ALUMINUM ELECTROLYTIC CAPACITORS

CONTENTS PAGE

Note:1.Specification and dimensions in this catalogue are subject to change without notice. If necessary, drawing can be provided.
2.Catalogue printed in Nov 2015.

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List of the Products

	Series Sleeve Color	Page	Type	Features	Operating Temperature Range	Working Voltage	Capacitance	Endurance Hours
Conductive Polymer	PL	26	Radial	Very low ESR	-55 to +105 ℃	2.5~16V	180~3500μF	2000
	PS	29	Radial	Standard	-55 to +105 ℃	2.5~25V	39~3500μF	2000
	PU	34	Radial	Ultra low ESR	-55 to +105 ℃	2.5~10V	180~3500μF	2000
	PX	37	Radial	Low profile	-55 to +105 ℃	2.5~25V	10~820μF	2000
	PE	40	Radial	Ultra low ESR, Down size to 6.3X8 (mm)	-55 to +105 ℃	2.5~6.3V	470~820μF	2000
	PW	41	Radial	Low height 2000Hours	-55 to +105 ℃	2.5V~25V	39~2500μF	2000
	PH	44	Radial	High Voltage/High Reliability	-55 to +105 ℃	35V~100V	10~150μF	2000
	PT	47	Radial	125 ℃ Guaranteed	-55 to +125 ℃	2.5~16V	180~2500μF	2000
	PF	50	Radial	Long Life to 5,000Hours	-55 to +105 ℃	2.5~16V	100~2700μF	5000
	PM	53	SMD	SMD & Low profile	-55 to +105 ℃	2.5~25V	10~560μF	2000
	PD	57	SMD	SMD & Large capacitance	-55 to +105 ℃	2.5~35V	39~3300μF	2000
	PV	60	SMD	SMD & Low height	-55 to +105 ℃	2.5~25V	39~2500μF	2000
	NEW PR	63	SMD	SMD & Long Life to 5,000 Hours	-55 to +105 ℃	6.3~25V	47~1500μF	5000
	NEW PG	66	SMD	SMD & For high temperature +125 ℃	-55 to +125 ℃	6.3~25V	47~1500μF	2000
SMD type	EV	69	SMD	105 ℃, Standard	-55 to +105 ℃	6.3~50V	0.1~1500μF	1000
	LV	71	SMD	85 ℃, Standard	-40 to +85 ℃	4~50V	0.1~6800μF	2000
	HV	74	SMD	Wide temperature range	-55 to +105 ℃	6.3~63V	0.1~6800μF	2000
	JV	77	SMD	3000 hours life	-55 to +105 ℃	6.3~50V	0.1~1000μF	3000
	MV	79	SMD	5000 hours life	-40 to +105 ℃	6.3~50V	0.1~1000μF	5000
	NEW CV	81	SMD	7000 hours life	-25 to +105 ℃	6.3~50V	33~1500μF	7000
	NV	83	SMD	5.5 ~ 10.5mm height, Non-polar	-40 to +85 ℃	6.3~50V	0.1~560μF	2000
	KV	85	SMD	85 ℃, Low leakage current	-40 to +85 ℃	6.3~50V	0.1~330μF	1000
	ZV	87	SMD	105 ℃, Low impedance	-55 to +105 ℃	6.3~50V	1~6800μF	2000 ~ 5000
	DV	89	SMD	105 ℃, Low impedance	-55 to +105 ℃	6.3~50V	1~6800μF	2000 ~ 5000
	RV	92	SMD	105 ℃, Low impedance, LongLife	-55 to +105 ℃	6.3~50V	1~6800μF	2000 ~ 5000
	TV	95	SMD	For high temperature + 125 ℃	-40 to +125 ℃	10~50V	10~330μF	1000 ~ 2000
Ultra-miniature type	SS	97	Radial	5mm, Standard, 85 ℃	-40 to +85 ℃	4~50V	0.1~330μF	1000
	ST	99	Radial	5mm, Standard, 105 ℃	-40 to +105 ℃	4~50V	0.1~220μF	1000
	SA	101	Radial	5mm, Low leakage current	-40 to +85 ℃	4~50V	0.1~100μF	1000
	SP	103	Radial	5mm, Non-polar	-40 to +85 ℃	6.3~50V	0.1~47μF	1000
	SM	105	Radial	7mm, Standard, 85 ℃	-40 to +85 ℃	4~63V	0.1~470μF	1000
	SH	107	Radial	7mm, 85 ℃, Long life	-40 to +85 ℃	4~63V	0.1~470μF	2000
	SK	109	Radial	7mm, Standard, 105 ℃	-40 to +105 ℃	4~63V	0.1~470μF	1000
	SJ	111	Radial	7mm, 105 ℃, Long life 2000 hours	-40 to +105 ℃	6.3~63V	0.1~220μF	2000
	SG	113	Radial	7mm, 105 ℃, Long life 4000 hours	-40 to +105 ℃	6.3~50V	0.1~470μF	4000
	SL	115	Radial	7mm, Low leakage current, 85 ℃	-40 to +85 ℃	6.3~50V	0.1~220μF	1000
	SD	117	Radial	7mm, Low leakage current, 105 ℃	-40 to +105 ℃	4~63V	0.1~100μF	1000
	SN	119	Radial	7~ 9mm, Non-polar, 85 ℃	-40 to +85 ℃	6.3~50V	0.1~220μF	1000
	SB	121	Radial	7mm, Non-polar, 105 ℃	-40 to +105 ℃	6.3~50V	0.1~100μF	1000
	SZ	123	Radial	7mm, Low impedance	-55 to +105 ℃	6.3~35V	6.8~330μF	1000
	SY	125	Radial	7mm, Low impedance, Long life	-55 to +105 ℃	6.3~50V	1~330μF	2000
Standard type	GS (GR)	127	Radial	General purpose, 85 ℃	-40 to +85 ℃ -25 to +85 ℃	6.3~100V 160~450V	0.1~33000μF 0.47~470μF	2000
	GW	131	Radial	9~21mm height low profile, 85 ℃	-40 to +85 ℃ -25 to +85 ℃	6.3~100V 160~450V	2.2~10000μF 2.2~220μF	2000
	KM	133	Radial	Standard, 105 ℃	-40 to +105 ℃ -25 to +105 ℃	6.3~100V 160~500V	0.1~22000μF 0.47~470μF	2000
	KW	137	Radial	9~21mm height low profile, 105 ℃	-40 to +105 ℃ -25 to +105 ℃	6.3~100V 160~450V	2.2~10000μF 1.5~220μF	2000
	KC	139	Radial	Ultra Miniaturized	-25 to +105 ℃	400~450V	82~220μF	3000
	LL	141	Radial	Low leakage current	-40 to +105 ℃	6.3~63V	0.1~2200μF	2000
Low Impedance / ESR type	GL	143	Radial	Low impedance and Low ESR Miniaturized	-55 to +105 ℃	6.3~63V	0.47~10000μF	2000 ~ 6000
	KF	146	Radial	Low impedance for power supply	-40 to +105 ℃ -25 to +105 ℃	6.3~100V 160~450V	0.47~15000μF 0.47~220μF	2000 ~ 5000
	KZ	151	Radial	Low impedance	-40 to +105 ℃	6.3~50V	0.47~6800μF	1000 ~ 2000
	GF	154	Radial	Low impedance	-55 to +105 ℃	6.3V~100V	4.7~6800μF	2000 ~ 5000
	LZ	157	Radial	Ultra low ESR and High ripple current	-40 to +105 ℃	6.3~25V	220~3300μF	2000
	GH	159	Radial	High temperature and Long life	-55 to +105 ℃	6.3~50V	0.47~6800μF	3000 ~ 10000
	NEW GT	165	Radial	Miniaturized and Long life	-40 to +105 ℃	10~63V	1~330μF	10000

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List of the Products

	Series Sleeve Color	Page	Type	Features	Operating Temperature Range	Working Voltage	Capacitance	Endurance Hours
High reliability type	FH	167	Radial	Low ESR and Long Life	-40 to +105 ℃	6.3V~100V	22~5600μF	4000 ~ 10000
	NEW ZH	171	Radial	Ultra low ESR and Long Life	-40 to +105 ℃	6.3V~100V	8.2~8200μF	6000 ~ 10000
	KL	174	Radial	Long life 5,000 hours	-25 to +105 ℃	160~500V	4.7~220μF	5000
	KH	177	Radial	Long life 5,000~10,000 hours	-40 to +105 ℃ -25 to +105 ℃	10~50V 160~450V	6.8~3300μF 6.8~220μF	5000 ~ 10000
	TH	180	Radial	For high temperature +125 ℃	-40 to +125 ℃ -25 to +125 ℃	10~100V 160~350V	0.47~1000μF 1~100μF	1000 ~ 2000
	TE	184	Radial	For high temperature +130 ℃	-40 to +130 ℃	10~50V	3.3~4700μF	2000 ~ 3000
	KS	187	Radial	Over voltage vent operating facility	-25 to +105 ℃	200,400V	4.7~470μF	2000
	FK	189	Radial	Long life for LED and ballast	-25 to +105 ℃	160~500V	1~330μF	6000 ~ 8000
	FL	192	Radial	Long life for LED and ballast	-25 to +105 ℃	160~500V	1~330μF	8000 ~ 10000
	LE	196	Radial	Long life for LED lighting	-25 to +105 ℃	160~450V	1~68μF	12000 ~ 20000
	KY	198	Radial	Slim type	-25 to +105 ℃	250~450V	10~150μF	2000
	LY	200	Radial	Slim type, longlife 5000hours	-25 to +105 ℃	250~450V	10~150μF	5000
	HY	202	Radial	Slim type, longlife 10000hours	-25 to +105 ℃	250~450V	12~120μF	10000
Non/Bi polarized type	NP	204	Radial	Non-polarized, 85 ℃	-40 to +85 ℃ -25 to +85 ℃	6.3~100V 160~250V	0.47~3300μF 0.47~47μF	2000
	NK	206	Radial	Non-polarized, 105 ℃	-40 to +105 ℃ -25 to +105 ℃	6.3~100V 160~250V	0.47~3300μF 0.47~47μF	2000
	BP	208	Radial	Bi-polarized	-40 to +105 ℃	25/50/63V	2.2~15μF	2000
For Audio Equipment	SW	210	Radial	5mm height, for audio equipment	-40 to +85 ℃	4~50V	0.1~470μF	1000
	SR	212	Radial	7mm height, for audio equipment	-40 to +85 ℃	6.3~50V	0.1~220μF	1000
	RW	214	Radial	Standard, for audio equipment	-40 to +85 ℃	6.3~100V	0.1~33,000μF	2000
	NR	216	Radial	Non-polar, for audio equipment	-40 to +85 ℃	6.3~100V	0.47~1,000μF	2000
	LR	218	Snap-in	85 ℃, for audio equipment	-40 to +85 ℃	16~100V	680~33,000μF	2000
Large can type	LP	223	Snap-in	85 ℃, Standard	-40 to +85 ℃ -25 to +85 ℃	10~100V 160~450V	470~68000μF 47~2700μF	2000
	LS	233	Snap-in	85 ℃, Miniaturized	-25 to +85 ℃	160~450V	47~2700μF	2000
	LU	236	Snap-in	85 ℃, Longlife 3000hours	-40 to +85 ℃ -25 to +85 ℃	16~100V 160~450V	820~47000μF 56~2700μF	3000
	LD	244	Snap-in	85 ℃, Longlife 5000hours	-40 to +85 ℃ -25 to +85 ℃	10~450V 500V	47~100000μF 47~1500μF	5000
	HP	253	Snap-in	105 ℃, Standard	-40 to +105 ℃ -25 to +105 ℃	10~100V 160~500V	330~68000μF 33~2200μF	2000
	HS	263	Snap-in	105 ℃, Miniaturized	-25 to +105 ℃	160~450V	33~2700μF	2000
	HW	266	Snap-in	105 ℃, Low Profile 15mm height	-25 to +105 ℃	160~400V	39~390μF	2000
	HU	268	Snap-in	105 ℃, Longlife 3000hours	-40 to +105 ℃ -25 to +105 ℃	10~100V 160~500V	560~47000μF 33~2700μF	3000
	HL	277	Snap-in	Long life with low ESR	-40 to +105 ℃ -25 to +105 ℃	10~100V 160~500V	560~47000μF 47~1500μF	5000
	LT	286	Snap-in	4 Snap-in terminals type	-40 to +85 ℃ -25 to +85 ℃	16~100V 160~450V	4700~82000μF 330~3300μF	2000
	HT	288	Snap-in	4 Snap-in terminals type	-25 to +105 ℃	160~400V	82~1200μF	2000
For inverter air conditioner	UB	306	Snap-in	Useful life 4000hours	-25 to +85 ℃	400~500V	330~1200μF	2000
	UC	312	Snap-in	Useful life 6000hours	-25 to +85 ℃	400~500V	330~1200μF	3000
	UD	318	Snap-in	Useful life 10000hours	-25 to +85 ℃	400~500V	330~1200μF	5000
	UJ	323	Snap-in	Useful life 3000hours	-25 to +105 ℃	400~500V	330~1200μF	2000
	UK	328	Snap-in	Useful life 5000hours	-25 to +105 ℃	400~500V	330~1200μF	3000
	UL	334	Snap-in	Useful life 7000hours	-25 to +105 ℃	400~500V	330~1000μF	5000
Photo flash type	RF	341	Radial	Photo flash equipment	-20 to +55 ℃	330/350V	100~450μF	5000times
	SF	342	Snap-in	Photo flash equipment	-20 to +55 ℃	330/350V	150~1500μF	5000times
Screw large can type	RS	344	Screw	General	-40 to +85 ℃	16~100V	3300~1000000μF	2000
	RG	350	Screw	Useful life 6000hours	-25 to +85 ℃	160~450V	680~68000μF	2000
	RP	355	Screw	Useful life 10000hours	-25 to +85 ℃	160~450V	680~68000μF	2000
	RX	362	Screw	useful life 20000hours	-25 to +85 ℃	160~450V	220~47000μF	5000
	RU	369	Screw	useful life 12000hours high ripple current	-25 to +85 ℃	350~450V	1000~22000μF	2000
	RJ	374	Screw	useful life 10000hours with stud	-25 to +85 ℃	350~450V	1500~22000μF	2000
	RY	378	Screw	useful life 12000hours high ripple current with stud	-25 to +85 ℃	350~450V	1500~22000μF	2000
	RK	382	Screw	General	-40 to +105 ℃	16~100V	1500~1000000μF	2000
	RL	388	Screw	Long life	-25 to +105 ℃	350~450V	680~15000μF	5000
	RM	394	Screw	useful life 6000hours	-25 to +105 ℃	160~450V	220~47000μF	2000
	RH	399	Screw	useful life 8000hours high ripple current	-25 to +105 ℃	160~450V	220~47000μF	2000
	RQ	403	Screw	useful life 6000hours with stud	-25 to +105 ℃	160~450V	2200~47000μF	2000
	RT	407	Screw	useful life 8000hours high ripple current with stud	-25 to +105 ℃	160~450V	2200~47000μF	2000

※About the Aluminum Electrolytic Capacitor related to Automotive Electronics applications, please contact us.

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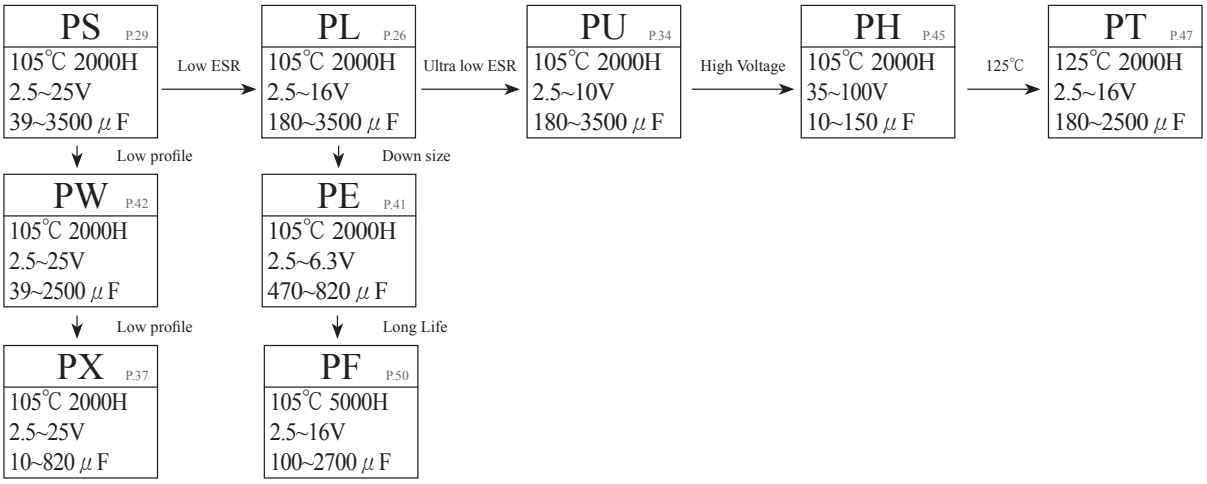
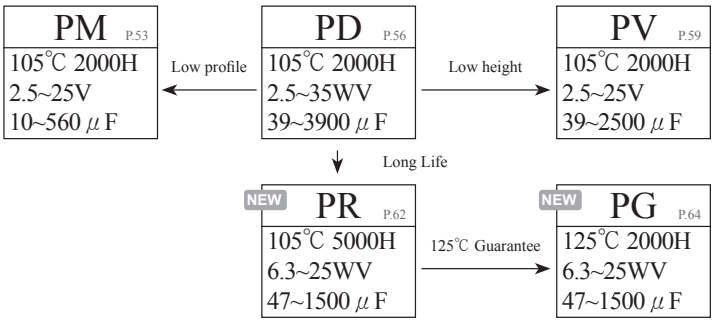
Product System

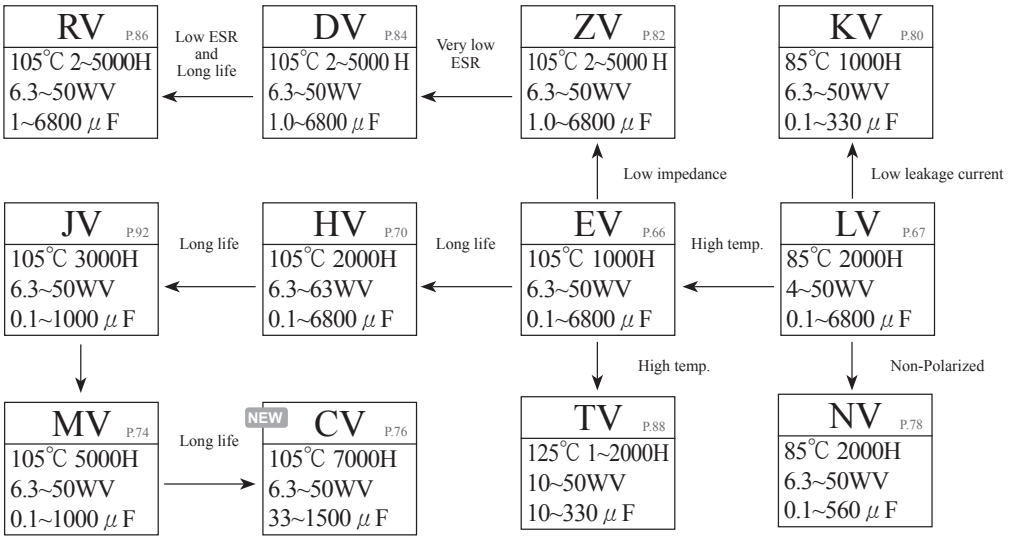
Conductive Polymer AL.E. Capacitors — Radial type



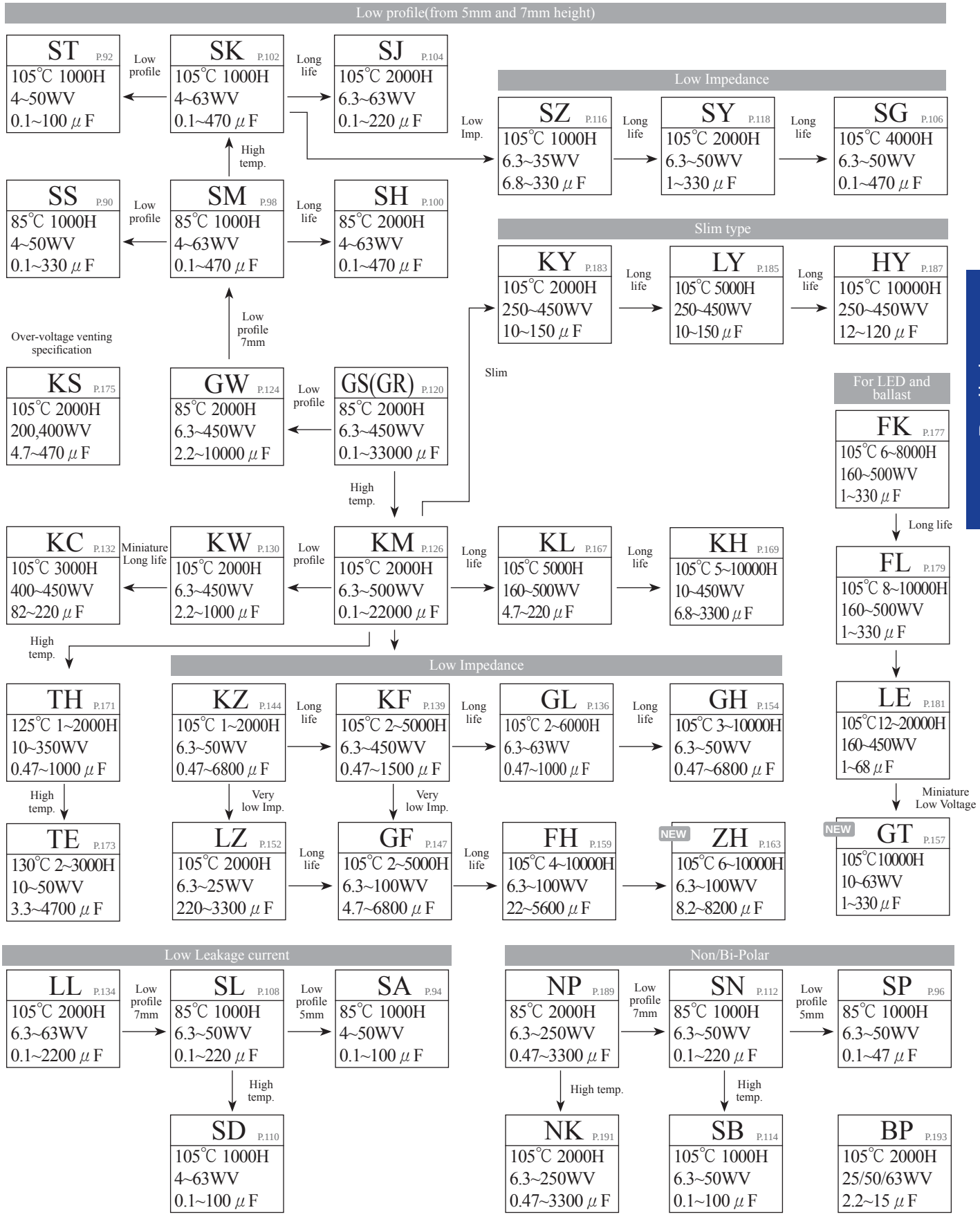
Conductive Polymer AL.E. Capacitors — SMD type



Aluminum Electrolytic Capacitors — SMD type

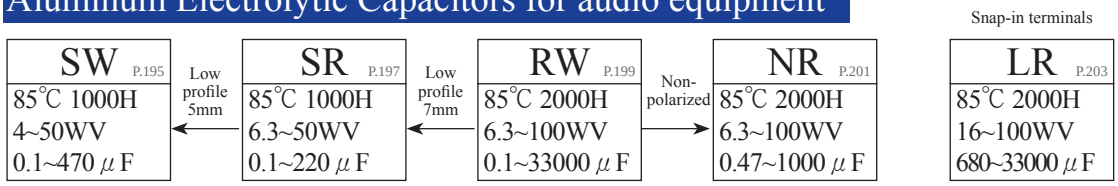


Radial type of aluminum Electrolytic Capacitors



Radial

Aluminum Electrolytic Capacitors for audio equipment



Snap-in type of aluminum Electrolytic Capacitors

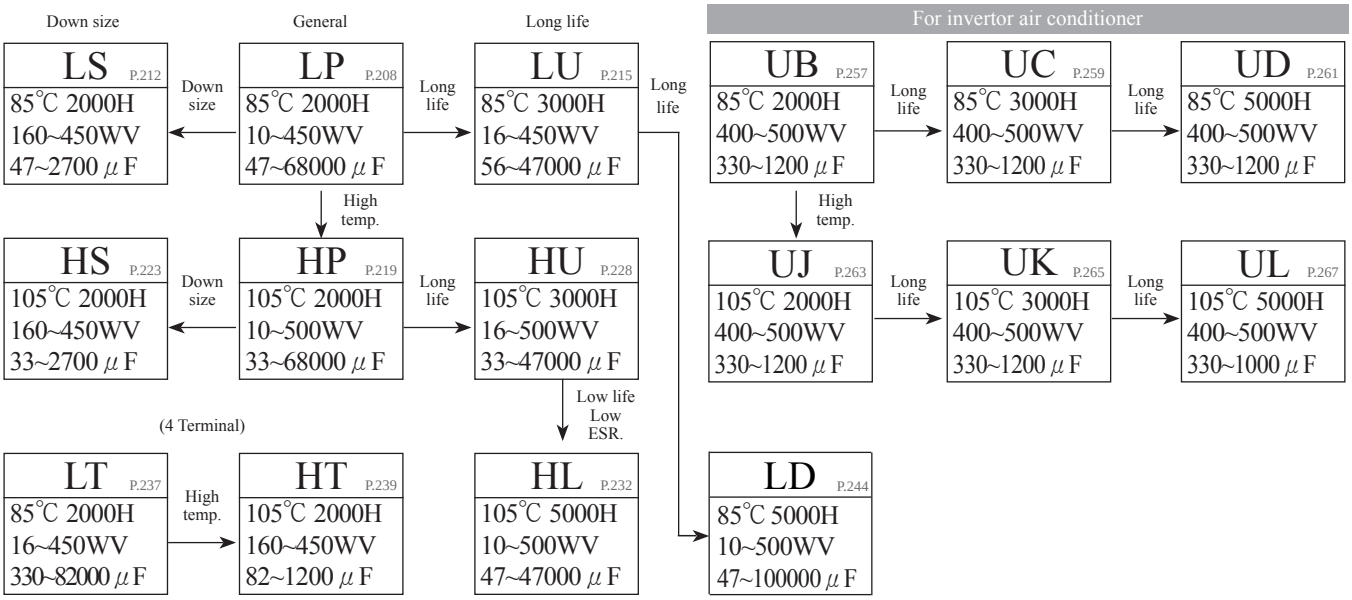
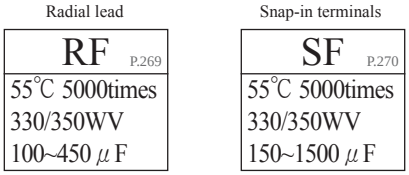
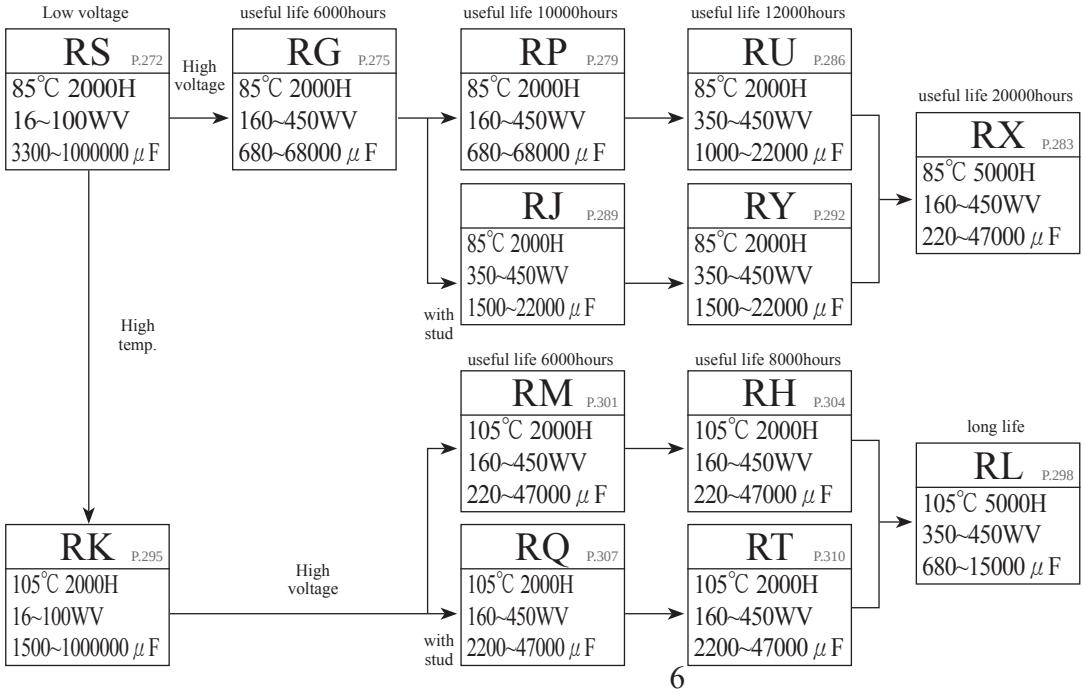


Photo flash type of aluminum Electrolytic Capacitors



Screw type of aluminum Electrolytic Capacitors



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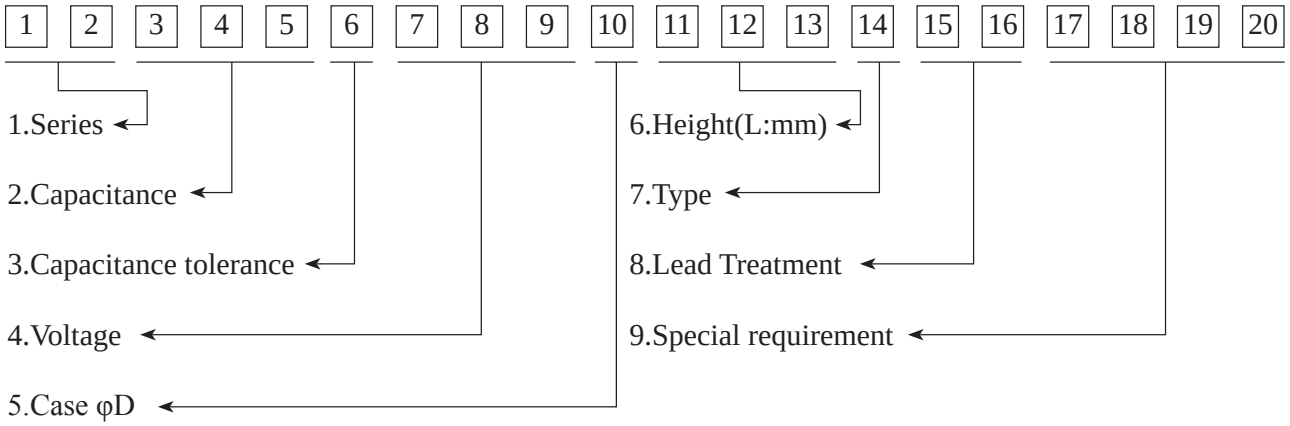
Part Number System



(1) Series

For the details, please refer to "List of the Products" on page3.

(2) Capacitance

Capacitance is shown in microfarads(uF)

μF	0.1	0.47	1	4.7	10	100	1000	10000
Code	0R1	R47	010	4R7	100	101	102	103

(3) Capacitance tolerance

Tolerance%	±5	±10	±20	±30	-10to+30	-10to+50	-10to+20	-10to100	0to+20	-30to+0	±15
Code	H	K	M	N	Q	T	V	W	Z	U	S
Tolerance%	0to+30	0to+40	0to+50	-5to+20	-8to+5	+5to+20	0to-20	-15to+20	-25to+20	-50to+0	-5to+30
Code	Y	X	A	J	E	I	B	P	L	O	C

(4) Voltage(W.V)

Voltage(W.V)	6.3	10	16	25	35	50	63	80	100	160	200	220	250	350	400	420	450	500
Code	6R3	010	016	025	035	050	063	080	100	160	200	220	250	350	400	420	450	500

(5) Case(φD)

Diameter	3	4	5	6.3	8	10	12	12.5	13	14.5	16	18	20	22	25	30	35	40	42	45	51	63.5	76.2	89	100
Code	A	B	C	E	F	G	H	Z	I	Y	J	K	L	M	N	O	P	Q	U	V	R	S	T	X	D

(6) Height(L:mm)

Description	5	5.5	5.8	6.5	7	7.7	8	8.7	9	10	10.5	11	12.5	14	16	17
Code	050	055	058	065	070	077	080	087	090	100	105	110	125	140	160	170

Description	20	25	25.5	31.5	35	35.5	41	47	52	83	98	118	141	151
Code	200	250	255	315	350	355	410	470	520	830	980	A18	A41	A51

(7) Type

Type	Without Lead Treatment	With Lead Treatment	Polymer
Code	A	E	P

(8) Lead Treatment

For the details, please refer to page9-13.

(9) Special & appearance requirement (The 17th, 18th, 19th, 20th code)

Code	Special
A	Terminal
B	Rubber
C	Lead wire
D	DF
E	Electrolyte
F	Pitch
G	Fill glue
H	Height requirement

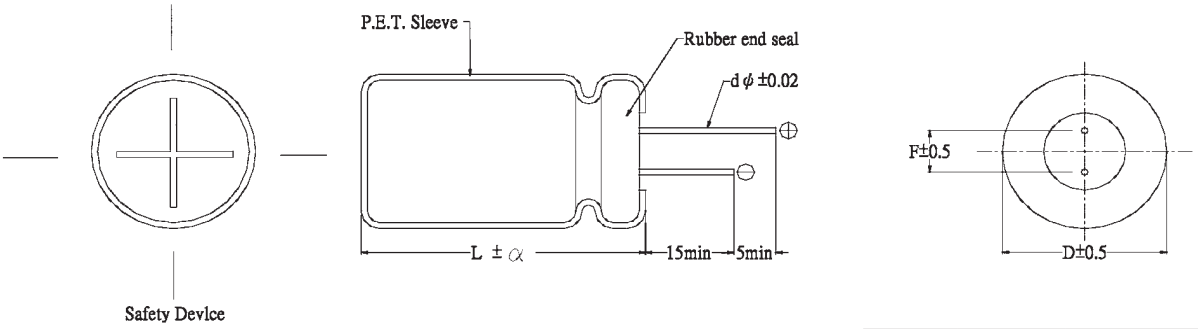
Code	Special
I	LC
K	Vent line
L	Life
N	Nude
P	Sleeve, tray, print, PVC sleeve
Q	Capacitance, Cv, Break
R	Ripple current
S	Countermeasure

Code	Special
T	Temperature characteristic
V	Vt, Electrolyte paper
M	solder, technics, form. Case with stud
Y	clip loop
Z	Impedance
U	Package& Label

Remark:

1. If it's without lead treatment & special requirement, after the 14th code is blank
2. If it's with lead treatment & without require special requirement, the 17th 18th 19th 20th code is blank
3. If it's without lead treatment, but, with special requirement, the 15th 16th code filled with 0.
4. If it's without lead treatment, but with special requirement, also exceed 4 kinds, keystone characteristic is 4code.
5. If it's with lead treatment, but with 1 special requirement, only remark 17 code, latter three code is blank.
6. If it's with led treatment, but with 1 special requirement, and it is different from former data, the 17th is 0, the 18th code is characteristic.

Standard



α	D<18	D= 18		D>18
		L<35.5	L≧35.5	
	1.5	1.5	2	2

Dφ	3	4	5	6.3	8		10	13	14.5	16	18	20	22	25
					L＜20	L≥20								
F	1.0	1.5	2.0	2.5	3.5		5.0		7.5			10		12.5
dφ	0.4	0.45	0.5			0.6	0.6		0.8					1.0

Cutting & Forming

Part No. Code (15th, 16th)	Cutting & Forming	Size (mm)
CF	 Fig1	Fig1

Dφ	4	5
F	2	2.5

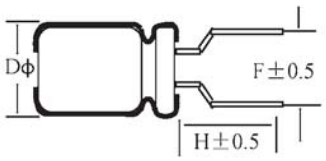
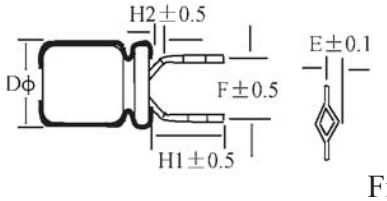


Fig2

Fig2

Dφ	4	4	4	5	5	6.3	6.3	8	10	13
F	2.5	3.5	5	3.5	5	3.5	5	5	7.5	7.5

KF	 Fig1	Fig1

Dφ	4	5
F	2	2.5
E	1.12	1.12
H1	4	4
H2	1.8	1.8

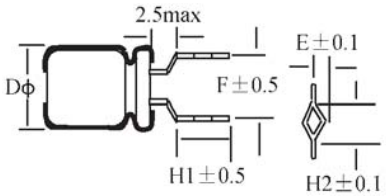


Fig2

Fig2

Dφ	5	6.3	8
F	5	5	5
E	1.12	1.12	1.32
H1	4	4	4
H2	1.8	1.8	1.8

Lead Treatment

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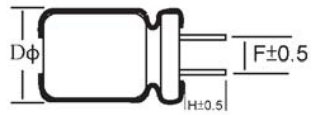
(15th, 16th)</th><th>Cutting & Forming</th><th>Size (mm)</th></tr>
<tr><td>CA</td><td> 
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<tr><td>F</td><td>1.5</td><td>2</td><td>2.5</td><td>3.5</td><td>5</td><td>5</td><td>7.5</td><td>7.5</td><td>10</td><td>12.5</td></tr>
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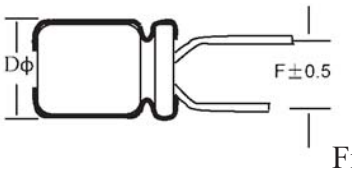
<tr><td>FA</td><td> 

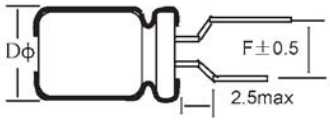
Fig1
 

Fig2</td><td>Fig1
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Fig2
<table>
<tr><td>Dφ</td><td>4</td><td>5</td><td>6.3</td><td>8</td><td>10</td><td>13</td></tr>
<tr><td>F</td><td>5</td><td>5</td><td>5</td><td>5</td><td>7.5</td><td>7.5</td></tr>
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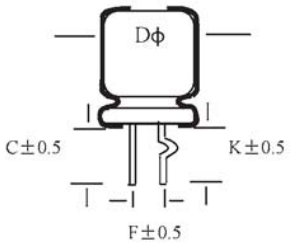
<tr><td>CK</td><td> 
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<tr><td>F</td><td>1.5</td><td>2</td><td>2.5</td><td>3.5</td><td>5</td><td>5</td><td>7.5</td><td>7.5</td></tr>
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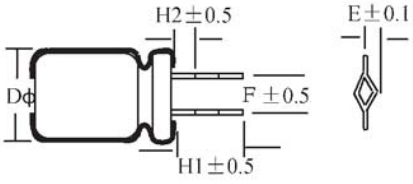
<tr><td>KA</td><td> 

Fig1</td><td>Fig1
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<tr><td>Dφ</td><td>5</td><td>6.3</td><td>8</td><td>10</td><td>13</td><td>16</td><td>18</td><td>22</td></tr>
<tr><td>F</td><td>2</td><td>2.5</td><td>3.5</td><td>5</td><td>5</td><td>7.5</td><td>7.5</td><td>10</td></tr>
<tr><td>E</td><td>1.12</td><td>1.12</td><td>1.32</td><td>1.32</td><td>1.32</td><td>1.32</td><td>1.32</td><td>1.82</td></tr>
<tr><td>H1</td><td>4</td><td>4</td><td>4</td><td>4.5</td><td>4.5</td><td>4.5</td><td>4.5</td><td>4.5</td></tr>
<tr><td>H2</td><td>1.8</td><td>1.8</td><td>1.8</td><td>1.8</td><td>1.8</td><td>1.8</td><td>1.8</td><td>1.8</td></tr>
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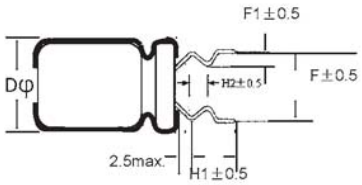
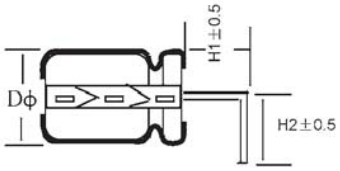
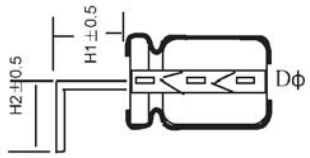
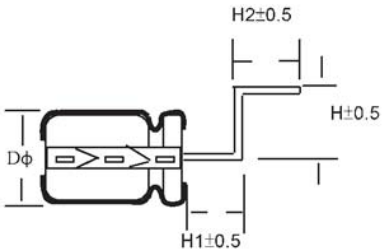
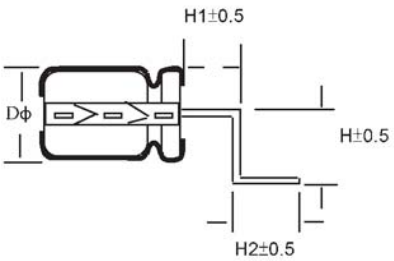
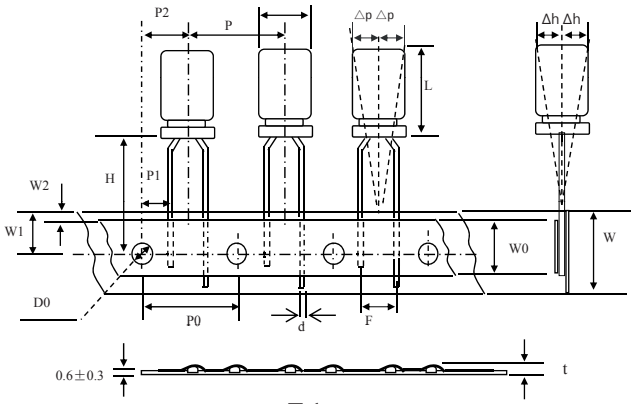
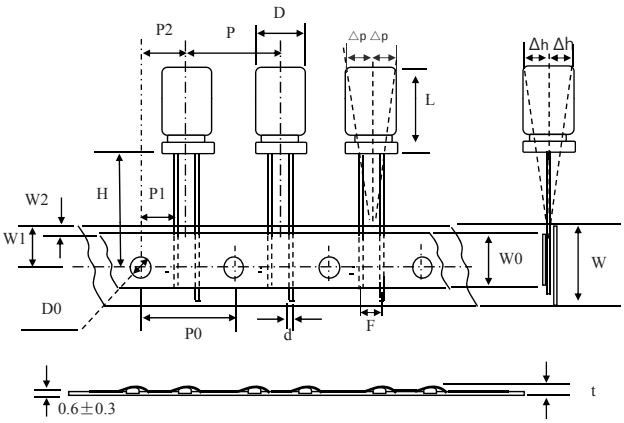
Part No. Code (15th, 16th)	Cutting & Forming	Size (mm)
EF		Dφ 4 5 6.3 8 F 5 5 5 5 F1 1.2 1.2 1.2 1.2 H1 4 4 4 4 H2 1.8 1.8 1.8 1.8
CR		Dφ 4 5 6.3 8 10 13 16 18 22 25 F 1.5 2 2.5 3.5 5 5 7.5 7.5 10 12.5 H1 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5
CL		Dφ 4 5 6.3 8 10 13 16 18 22 25 F 1.5 2 2.5 3.5 5 5 7.5 7.5 10 12.5 H1 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5
CS		Dφ 4 5 6.3 8 10 13 16 18 22 25 F 1.5 2 2.5 3.5 5 5 7.5 7.5 10 12.5
CZ		Dφ 4 5 6.3 8 10 13 16 18 22 25 F 1.5 2 2.5 3.5 5 5 7.5 7.5 10 12.5

Taping



T-1



T-2

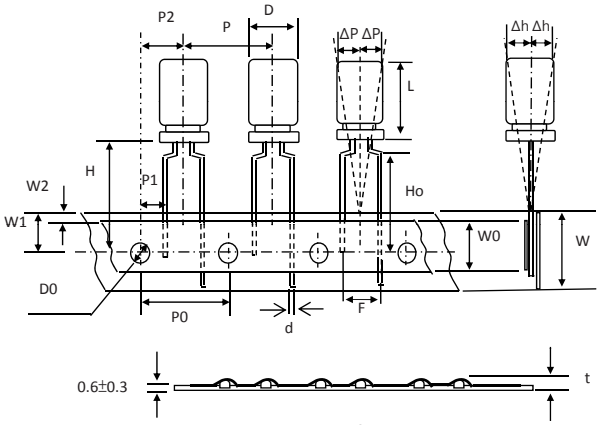
Specification Information

Code	D	L	d	P	P0	P1	P2	F	W	W0	W1	W2	H	D0	△h	△P	t	code	Fig
Tol.	±0.5	Max	±0.02	±1.0	±0.2	±0.7	±1.3	0.4 -0.2	±0.5	±0.5	±0.5	Max	0.75 -0.5	±0.2	Max	Max	Max	code	T-1
Item	4	5-7(+1)	0.45	12.7	12.7	5.35	6.35	2	18	11	9	2	18.5	4.0	1	1.0	1.5	TB	
						5.1		2.5										TC	
	5	5-7(+1)	0.45	12.7	12.7	4.6	6.35	2.5	18	11	9	2	18.5	4.0	1	1.0	1.5	TC	
		9-15(+1.5)	0.5																

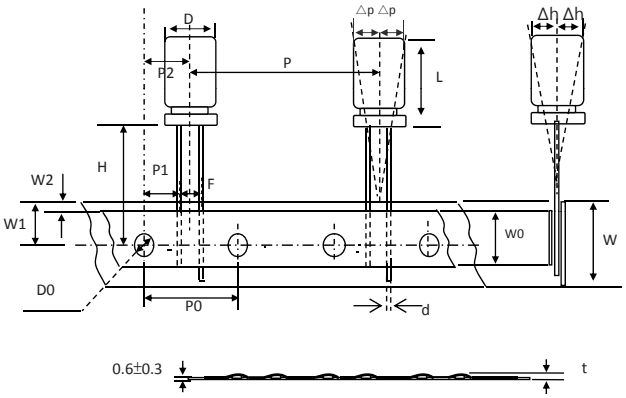
Code	D	L	d	P	P0	P1	P2	F	W	W0	W1	W2	H	D0	△h	△P	t	code	Fig
Tol.	±0.5	Max	±0.02	±1.0	±0.2	±0.7	±1.3	0.4 -0.2	±0.5	±0.5	±0.5	Max	0.75 -0.5	±0.2	Max	Max	Max	code	T-2
Item	5	5-7(+1)	0.45	12.7	12.7	5.35	6.35	2.0	18	11	9	2.0	18.5	4.0	1	1	1.5	TB	
		9-15(±1.5)	0.5																
	6.3	5(+1)	0.45	12.7	12.7	5.1	6.35	2.5	18	11	9	2.0	18.5	4.0	1	1	1.5	TC	
		7(+1)	0.5																
		10(+1)*	0.6																
		9-15(±1.5)	0.5																
Item	8	5-7(+1)	0.5	12.7	12.7	4.6	6.35	3.5	18	11	9	2.0	18.5	4.0	1	1	1.5	TD	
		8(+1)*	0.6																
		11.5(+1.5)*	0.6																
		9-20(±1.5)	0.5																
	10	9-30(±1.5)	0.6	12.7	12.7	3.85	6.35	5.0	18	11	9	2.0	18.5	4.0	1	1	1.5	TA	
	13	13-40(±1.5)	0.6	15	15	5	7.5	5.0	18	15	9	2.0	18.5	4.0	2	2	1.5	TA	

＊: In this case, that is suitable for polymer.

Taping



T-3



T-4

Specification Information

Code	D	L	d	P	P0	P1	P2	F	W	W0	W1	W2	H	H0	D0	△h	△P	t	code	Fig
Tol.	±0.5	Max	±0.02	±1.0	±0.2	±0.7	±1.0	0.4 -0.2	±0.5	±0.5	±0.5	Max	0.75 -0.5	±0.5	±0.2	Max	Max	Max		
Item	4	5-7(+1)	0.45	12.7	12.7	3.85	6.35	5	18	11	9	2.0	18.5	16	4.0	1	1	1.5	TA	T-3
	5	5-7(+1)	0.45	12.7	12.7	3.85	6.35	5	18	11	9	2.0	18.5	16	4.0	1	1	1.5		
		9-15(±1.5)	0.5																	
	6.3	5(+1)	0.45	12.7	12.7	3.85	6.35	5	18	11	9	2.0	18.5	16	4.0	1	1	1.5		
		7(+1)	0.5																	
		10(+1)*	0.6																	
		9-15(±1.5)	0.5																	
	8	5-8(+1)	0.5	12.7	12.7	3.85	6.35	5	18	11	9	2.0	18.5	16	4.0	1	1	1.5		
		9-20(±1.5)	0.5																	

Code	D	L	d	P	P0	P1	P2	F	W	W0	W1	W2	H	D0	△h	△P	t	code	Fig	
Item	±0.5	±1.5	±0.02	±1.0	±0.2	±0.7	±1.3	0.4 -0.2	±0.5	±0.5	±0.5	Max	+0.75 -0.5	±0.2	Max	Min	Max		T-4	
	13	13~40(±1.5)	0.6	25.4	12.7	3.85	6.35	5	18	15	9	2.0	18.5	4.0	2	2	1.5	TA		
	16	16~40(±1.5)	0.8	30	15	3.75	7.5	7.5	18	15	9	2.0	18.5	4.0	2	2	1.5	TE		

＊: In this case, that is suitable for polymer.

Radial

Part Number Ammo Package

F	5	2	2.5	3.5	7.5	SMD
Code (15th, 16th)	TA	TB	TC	TD	TE	TR

Part Number Reel Package

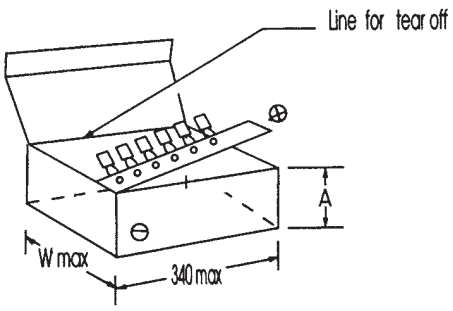
F	5	2	2.5	3.5	7.5
Code (15th, 16th)	RA	RB	RC	RD	RE

Package Information

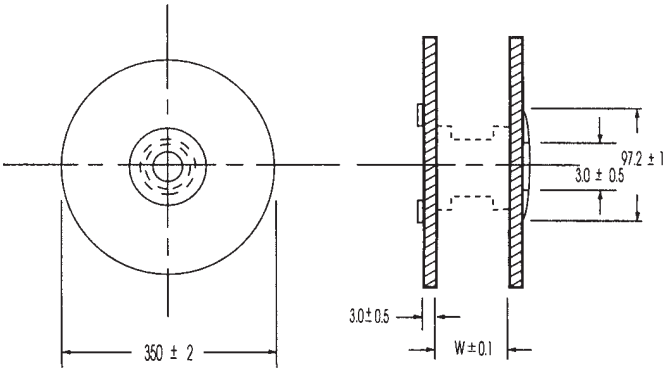
Size φD x L(mm)	Ammo Package		
	W	A	Quantity (pcs)
4 x all	227	51	2500
5 x all	227	51	2000
6.3 x all	227	51	1500
8 x 5~16	227	51	800
8 x 17~25	191	57	800
10 x 7~15	227	51	600
10 x 16~20	191	57	500
10 x 21~25	190	60	500
13 x 13~15	227	51	300
13 x 16~20	191	57	300
13 x 21~25	190	60	300
13 x 26~30	216	64	300
16 x 16~20	191	57	200
16 x 21~25	216	64	200
16 x 26~30	254	67	250
16 x 31~35.5	230	71	250

Size φD x L(mm)	Reel Package	
	AW	Quantity (pcs)
4 x all	45	1800
5 x all	45	1300
6.3 x all	45	1000
8 x 5~17	45	800
8 x 18~28	55	800
10 x 7~17	45	600
10 x 18~28	55	600
13 x 13~17	45	300
13 x 18~28	55	300
16 x 13~17	45	200
16 x 18~28	55	200

Ammo Package



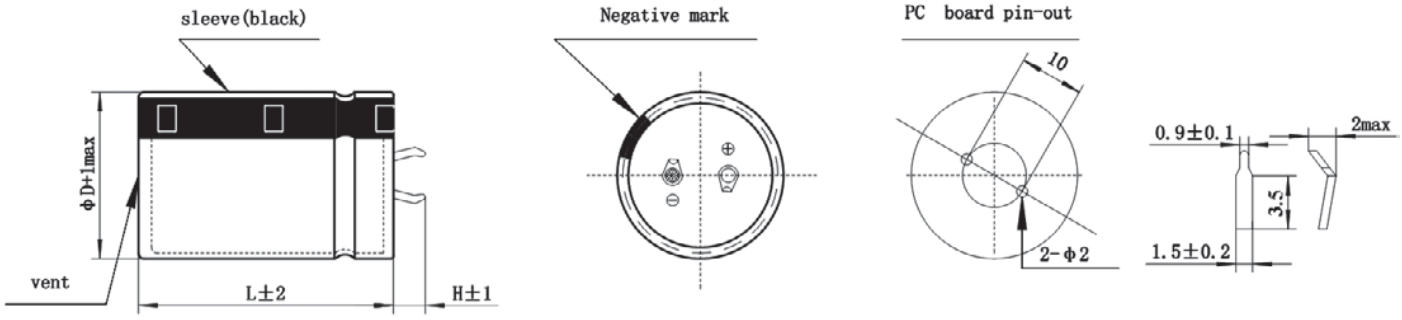
Reel Package



Available terminal for Snap-in Type

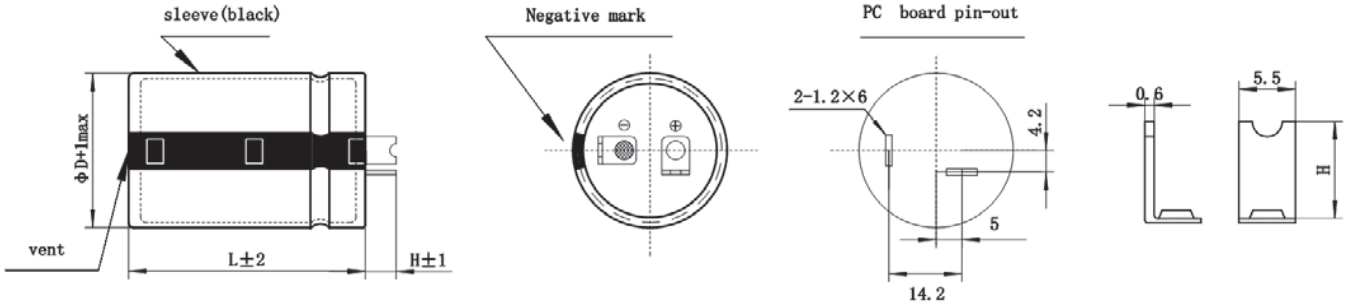
Please consult us about terminal type other those blow listed.

1. Standard terminal type Terminal code:PP D=Φ22 to Φ40



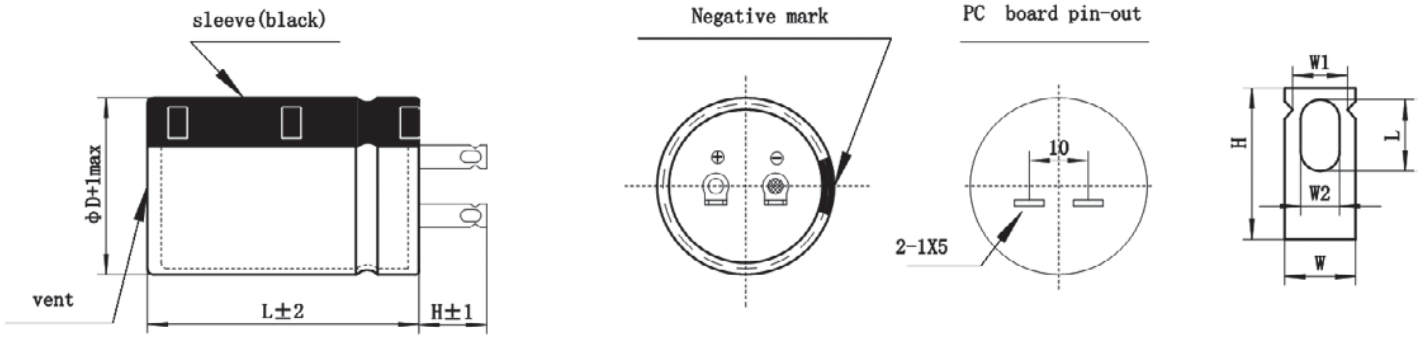
Standard snap-in terminals:Length 6.0±1mm.Also available with length of 4.0±1mm

2. Vibration proof terminal T type Terminal code:CP D=Φ30 to Φ40



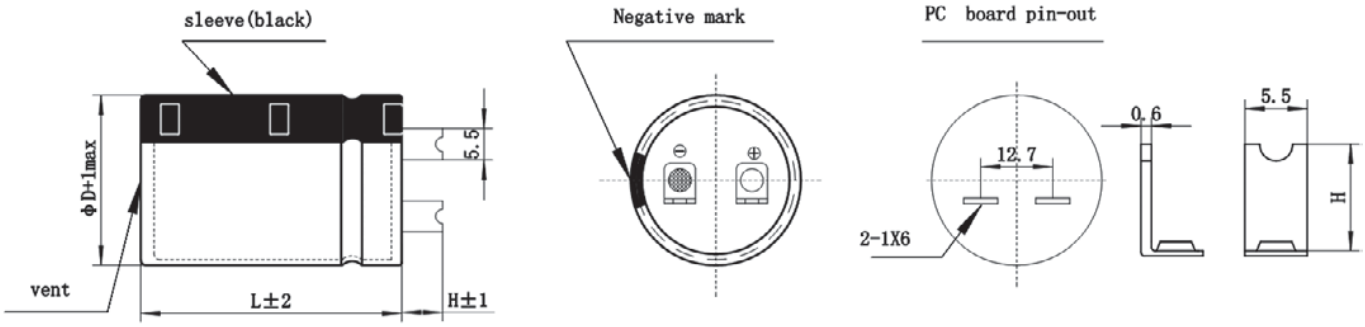
Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

3. Soldering Type terminal Terminal code:VP D=Φ30 to Φ40



Standard terminals:Length 6±1mm.Also available with length of 5.0±1mm or 12.0±1mm

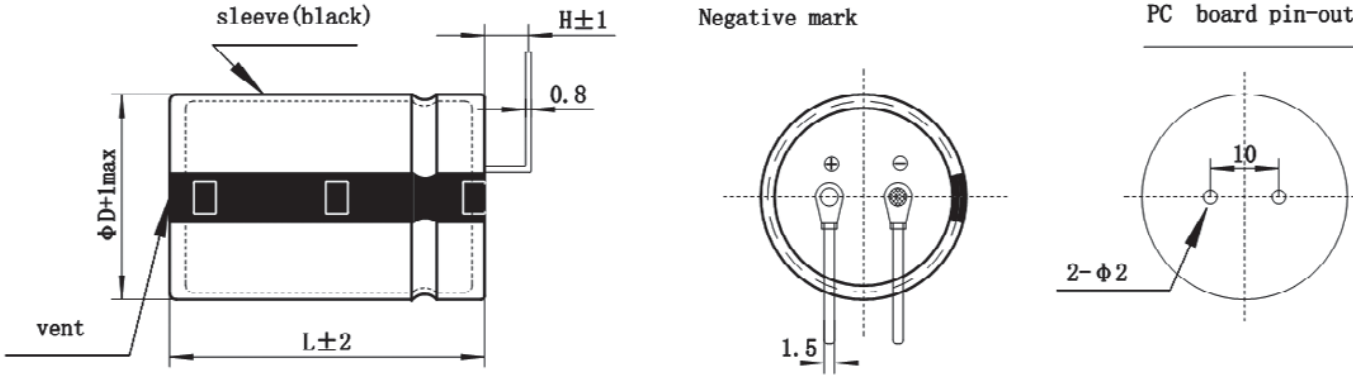
4. Vibration proof terminal U type Terminal code:HP D=Φ30 to Φ40



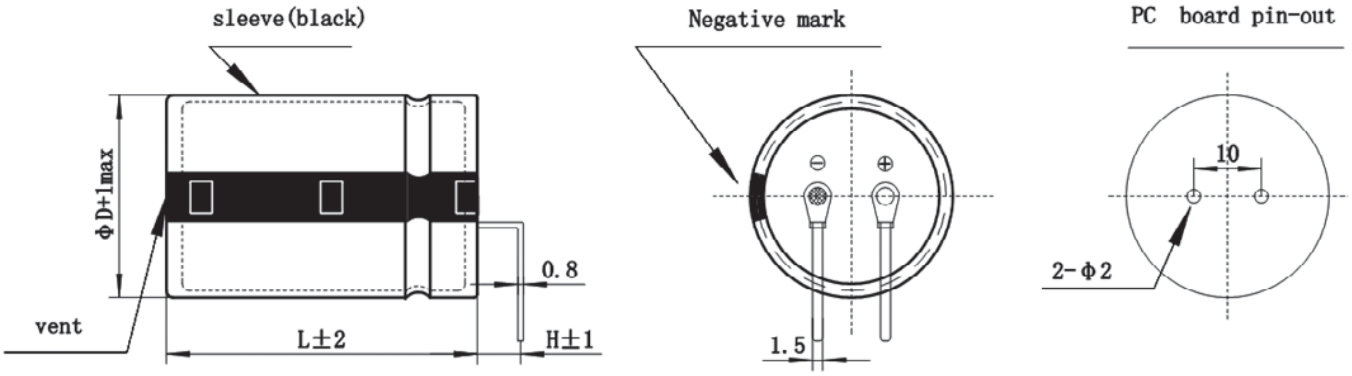
Standard terminals:Length 6±1mm.

5. Long terminal for Left or right bending type Terminal code:TP D=Φ22 to Φ40

Left bending(C+L):



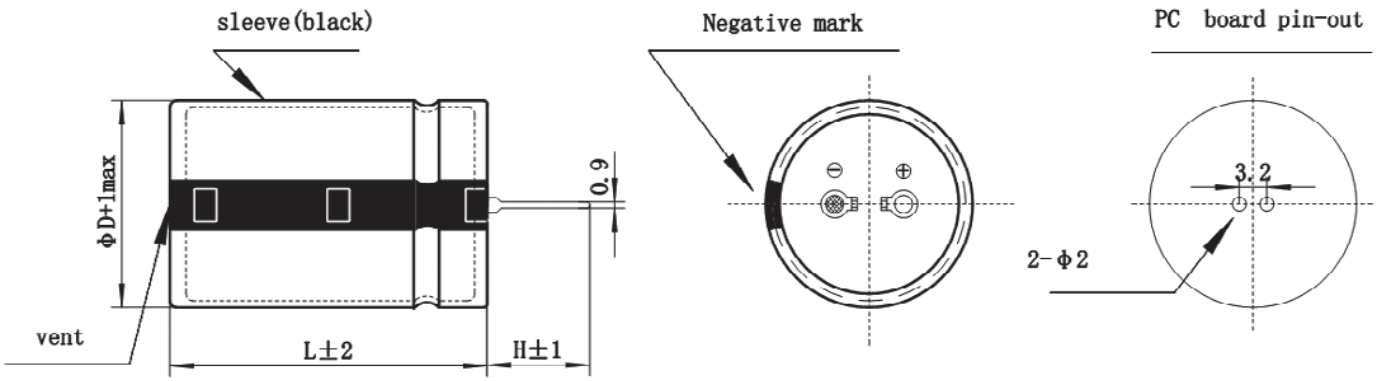
Right bending(C+R):



Standard terminals:H Length 2.5±1mm.

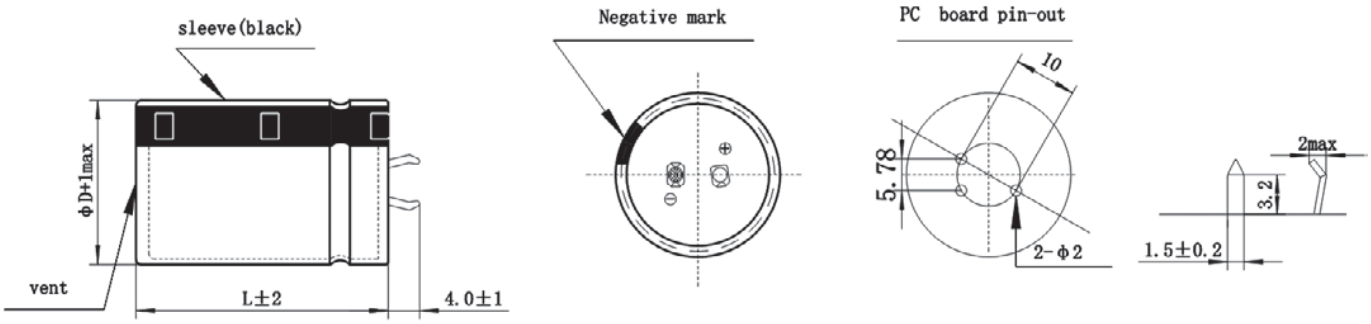
Available terminal for Snap-in Type

6. Slim terminal type Terminal code:LP D=Φ22 to Φ40

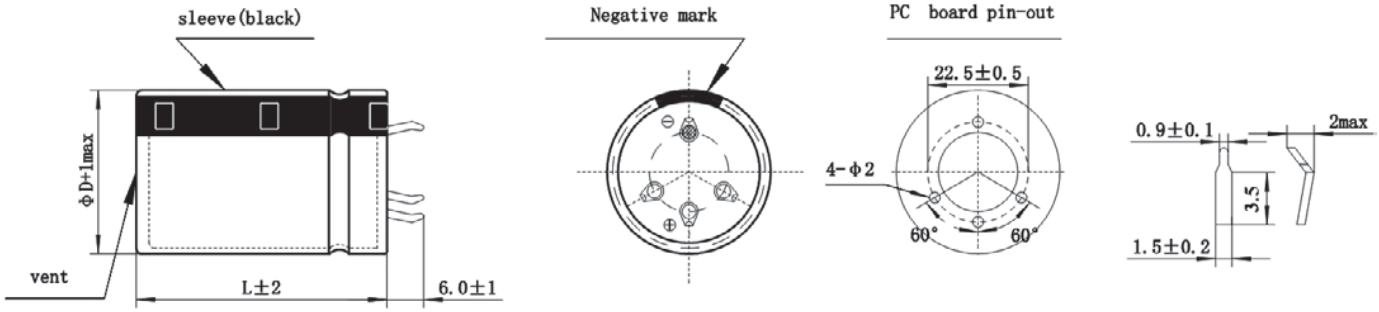


Standard terminals:Length 9.5±1mm.Also available with length of 4.0±1mm.

7. 3pin snap-in terminal type Terminal code:ZP D=Φ22 to Φ40



8. 4pin snap-in terminal type Terminal code:YP D=Φ30 to Φ40



CapXon

Available terminal for Snap-in Type

Package for Snap-in type

Packing

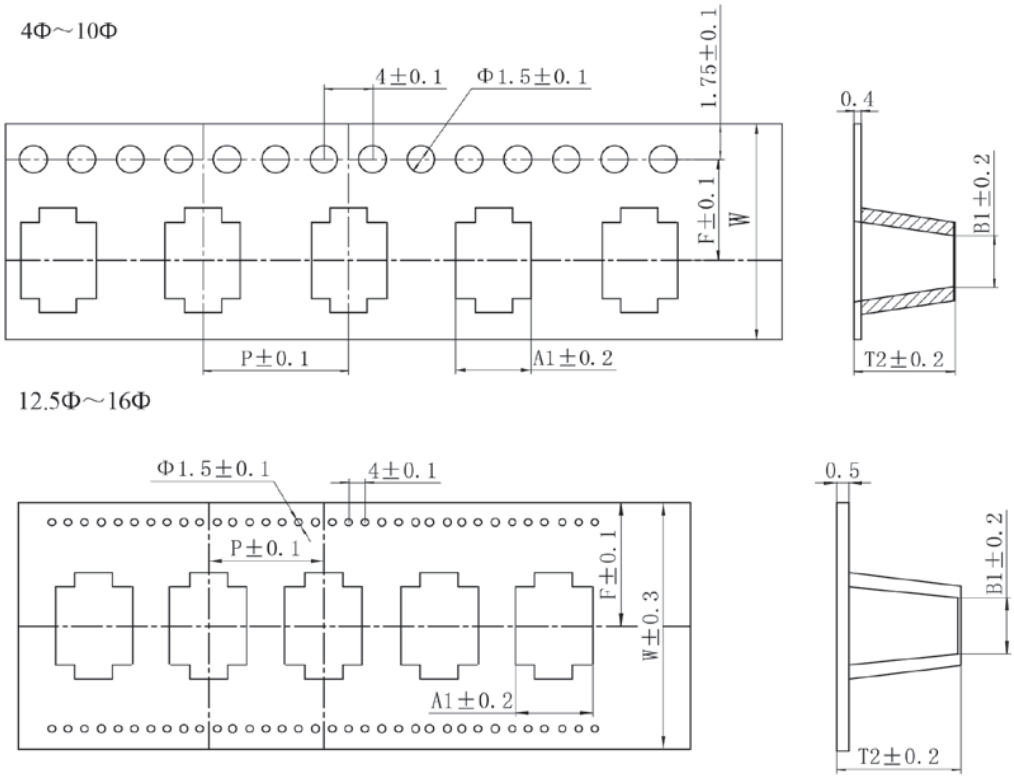
Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	all	/	600	6	100
25	all	/	500	5	100
30	≤36	<6	400	8	50
30	≥36	≥6	300	6	50
35	<27	/	400	8	50
35	27≤L≤42	/	300	6	50
35	>42	/	200	4	50
40	<37	/	200	5	40
40	37≤L<47	/	160	4	40
40	≥47	/	120	3	40

Packing of Snap-in

CapXon

Package for SMD Type

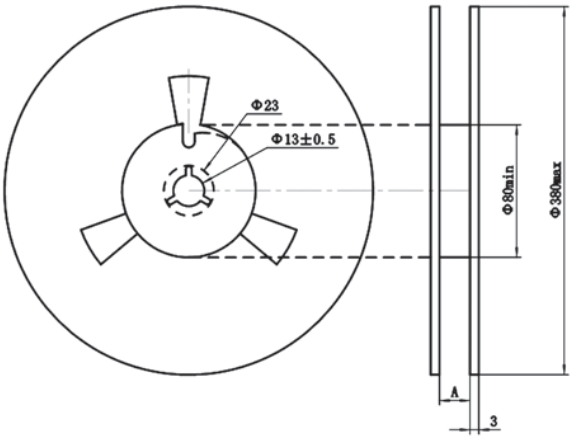
Carrier tape



Unit: mm

φD	4x5.5	5x5.5	5x5.8	6.3x6.1	6.3x5.5	6.3x5.8	6.3x7.7	8x6.5	8x7.7	8x8.7	8x10.5	8x11.7	10x8.7	10x10.5	10x12.4	12.5X14	16X17
W	12.0	12.0	12.0	16	16.0	16.0	16.0	16	16	24.0	24.0	24.0	24	24.0	24.0	32	44
P	8.0	12.0	12.0	12	12.0	12.0	12.0	12	12	16.0	16.0	16.0	16	16.0	16.0	24	28
F	5.5	5.5	5.5	7.5	7.5	7.5	7.5	7.5	7.5	11.5	11.5	11.5	11.5	11.5	11.5	16	21.95
A_1	4.7	5.7	5.7	7	7.0	7.0	7.0	8.7	8.7	8.7	8.7	8.7	10.7	10.7	10.7	13.9	17.5
B_1	4.7	5.7	5.7	7	7.0	7.0	7.0	8.7	8.7	8.7	8.7	8.7	10.7	10.7	10.7	13.9	17.5
T_2	5.7	5.7	6.1	6.2	5.7	5.7	8.0	7.0	8.2	11.0	11.0	13.0	11.0	11.0	12.9	14.5	17.3

Reel



Dφ	4	5	6.3, 8	8, 10	12.5	16
A	14	14	18	26	34	46

φD	Quantity
4X5.5	2000pcs
5x5.5	1000pcs
5x5.8	1000pcs
6.3x6.1	1000pcs
6.3x5.5	1000pcs
6.3x5.8	1000pcs
6.3x7.7	900 pcs
8x6.5	1000pcs
8x7.7	700pcs
8x8.7	500pcs
8x10.5	500pcs
8x11.7	400pcs
10x8.7	500pcs
10x10.5	500pcs
10x12.4	400pcs
12.5X14	200pcs
16X17	125pcs

For Conductive Polymer Capacitors

CP-CAP is a solid aluminum capacitor with conductive polymer electrolyte. Please read the following points in order to take the most out of your CP-CAP.

Designing device circuits

1. Circuits where CP-CAPs are prohibited to used

   The leakage current of conductive polymer solid aluminum capacitors may vary depending on thermal stresses. Please don't use solid capacitors in the following types of circuits:

   (1) High-impedance circuits that are to sustain voltages.

   (2) Coupling circuits

   (3) Time constant circuits

   In addition to the leakage current fluctuation, capacitance may also fluctuate depending on operational temperature and humidity. The fluctuation of the capacitance may cause problem if it is used as a time constant capacitor, which is extremely sensitive to the fluctuation of the capacitance. Do not use it as a time constant capacitance.

   (4) Other circuits that are significantly affected by leakage current. If you want to use 2 or more CP-CAPs in a series connection, please contact us before use.

2. Polarity

   The CP-CAP is a polarized solid aluminum electrolytic capacitor. Do not apply either reverse voltages or AC voltages to the polarized capacitors, using reverse polarity may cause a short circuit. Refer to the catalog, product specifications or capacitor body to confirm the polarity prior to use.

3. Applied voltage

   Do not apply DC voltages exceeding the full rated voltage. The peak voltage of superimposed AC voltages (ripple voltages) on DC voltages must not exceed the full rated voltage. While there are specifications for surge voltages exceeding the rated voltage, usage conditions apply, and continued operation for extended periods of time under such conditions cannot be guaranteed. Use the within 20% of the rated voltage for applications which may cause the reverse voltage during the transient phenomena when the power is turned off or the source is switched.

4. Ripple current

   Do not apply currents in excess of the rated ripple current. The superimposition of a large ripple current increases the rate of heating within the capacitor. This may reduce the service life of the capacitor or damage the capacitor.

5. Operating temperature

   Do not use the CP-CAP at high temperatures (temperatures exceeding the maximum temperature for the capacitor category) Use of the capacitor outside of the maximum temperature for the capacitor category may decrease the service life of the capacitor.

6. Sudden charge and discharge

   Do not use the CP-CAP in circuits where the capacitor is repetitively charged and discharged rapidly. Repetitively charging and discharging the capacitor rapidly may reduce the capacitance or may cause damage due to internal heating. Use of a protective circuit to ensure reliability is recommended when rush currents exceed 10A or the rush current is over 10 times of allowable ripple current of CP-CAP .

   A protection resistor(1 kΩ) must be inserted to the circuit during the charge and discharge when measuring the leakage current.

7. Failures and life-span

   The CP-CAP failure rate in use is based on the failure rate level in the specification requirements. Upper category temperature and category voltage adhere to JIS C 5003 Standard. The confidence level is 60% and the failure rate is 0.5%/1,000 hours (applied rated voltage at category temperature).

   The failure modes mainly have 2 types as follows.

   (1) Contingency failure

   The contingency failure mainly has short circuit. The phenomenon of after short is on following.

   (i) In the event a short circuit causes the current to become relatively small(less than approximately 1A for φ10,less than approximately 0.5A for φ8 and less than approximately 0.2A for smaller than φ6.3),the CP-CAP itself will generate a little heat, but its appearance will not be affected even when electricity is supplied continuously. However, if the short circuit current value exceeds the mentioned values above, the temperature inside the CP-CAP will increase, the internal pressure is

raised, rubber sealing is turned over, and odorous gas is released. In this case, keep your face and hands away from the area.

(ii) The electrolyte, electrolytic paper, sealing rubber, and plastic spacer used in the CP-CAP are all combustible. If an extremely large electric current flows through the capacitor after shorting, the shorted part may spark, and in a worst case scenario, may ignite. Ensure safety by fully considering the design issues described below when using this capacitor in equipment where safety is a priority.

- Increase safety by using in conjunction with a protective circuit or protective equipment.
- Install measures such as redundant circuits so that the failure of a part of the equipment will not cause unstable operation.

(2) Performance characteristic and failure(life-span)

CP-CAP characteristics can possibly change(capacitance reduction and ESR increase) within the specified range in specifications when it is used in the condition of rated voltage, electric and mechanical performance.

When life span exceeded the specified guarantee time of endurance and damp heat, electric aharacteristic might change and cause electrolyte insulation. This is called open circuit mode. It is recommended to use the capacitor at a lower temperature than the maximum temperature for the capacitor category.

8. Circuit design

Verify the following before designing the circuit:

(1) The electrical characteristics of the capacitor will vary depending on differences in temperature and frequency. Only design your after verifying the scope of these factors.

(2) When connecting two or more capacitors in parallel, ensure that the design takes current balancing into account.

(3) When two or more capacitors are connected in series, variability in applied voltage may cause over-voltage conditions. Contact CapXon before using capacitors connected in series.

9. Capacitor usage environment

Do not use/expose capacitors to the following conditions.

(1) Oil, water, salty water, take care to avoid storage in damp locations.

(2) Direct sunlight

(3) Toxic gases such as hydrogen, sulfide, sulfurous acids, nitrous acids, chlorine and chlorine compounds, bromine and bromine compounds, ammonia, etc.

(4) Ozone, ultraviolet rays and radiation.

(5) Severe vibration or mechanical shock conditions beyond the limits advised in the product specification section of the catalog.

10.Capacitor mounting

(1) For the surface mount capacitor, design the copper pads on the PC board in accordance with the catalog or the product specification

(2) For radial capacitors, design the terminal holes on the PC board to fit the terminal pitch of the capacitor.

11.Leakage current

Heat pressure from soldering and mechanical stress from transportation may cause the leakage current to become large. In such a case, leakage current will gradually decrease by applying voltage less than or equal to the rated voltage at a temperature within the upper category temperature. In close conditions to the upper category temperature, the nearer the applied voltage is to the rated voltage, the faster the leakage current recovery speed is.

Mounting precautions

1. Note

(1) For the surface mount capacitor, design the copper pads on the PC board in accordance with the catalog or the product specification

(2) For radial capacitors, design the terminal holes on the PC board to fit the terminal pitch of the capacitor.

(3) Mount after checking the capacitance and the rated voltage.

(4) Mount after checking the polarity.

(5) Do not apply excessive external force to the lead terminal and the CP-CAP itself.

(6) Ensure that the soldering conditions meet the specifications recommended by CapXon. Note that the leakage current may increase due to thermal stresses that occur during soldering, etc. Note that increased leakage currents gradually decrease when voltage is

applied.

2. Soldering using a soldering iron:

(1) The soldering conditions (temperature and time) are within the ranges specified in the catalog or product specifications.

(2) The tip of the soldering iron does not come into contact with the capacitor itself.

3. Flow soldering

(1) Do not dip the body of a capacitor into the solder bath only dip the terminals in. The soldering must be done on the reverse side of PC board.

(2) Soldering conditions (preheat, solder temperature and dipping time) should be within the limits prescribed in the catalog or the product specifications.

In regards to flow soldering, be sure to solder within the following conditions.

	Temperature	Duration	Flow number
Preheating	120℃ or less (ambient temperature)	120 sec. or less	1 time
Soldering conditions	260+5℃ or less	10+1 sec. or less	Twice or less

(3) Do not apply flux to any part of capacitors other than their terminals.

(4) Make sure the capacitors do not come into contact with any other components while soldering.

4. Reflow soldering

(1) Soldering conditions (preheat, solder temperature and soldering time) should be within the limits prescribed in the catalogs or the product specification.

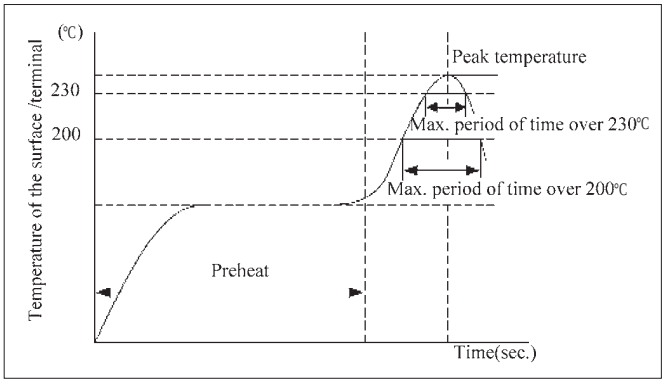
(2) The heat level should be appropriate. (Note that the thermal stress on the capacitor varies depending on the type and position of the heater in the reflow oven.)

(3) Vapor phase soldering (VPS) is not used.

(4) Except for the surface mount type, reflow soldering must not be used for the capacitors.

(5) In the case of reflow soldering, capacitive static electricity may decrease after soldering even when the soldering conditions are within the required values.

(6) Recommended reflow condition of SMD type.



Voltage range	Preheat	Time maintained above 200℃	Time maintained above 230℃	Peak temp.	Reflow number
2.5 to 10v	150 to 180℃ 120 sec. max.	90 sec. max.	60 sec. max.	260℃max	only 1 time
				250℃max	twice or less
16 to 25v		90 sec. max.	60 sec. max.	250℃max	only 1 time
		80 sec. max.	50 sec. max.	240℃max	twice or less
35 to 50v		70 sec. max.	30 sec. max.	240℃max	only 1 time

Note : 1) All temperatures are measured on the topside of the Al-case and terminal surface.

2) The second reflow soldering shall be applied after the temperature of capacitorsdecreases down to the room temperature.

The leakage current value may increase(from a few μA to a few mA) even within the above conditions. When the CP-CAP is used in a DC circuit, the leakage current will decrease gradually through self-recovery after voltage is applied. If your reflow profile deviates from the above conditions for mounting the CP-CAP, please consult with CapXon.

5. Handling after soldering

Do not apply any mechanical stress to the capacitor after soldering onto the PC board.

(1) Do not lean or twist the body of the capacitor after soldering the capacitors onto the PC board

(2) Do not use the capacitors for lifting or carrying the assembly board.

(3) Do not hit or poke the capacitor after soldering to PC board. When stacking the assembly board, be careful that other components do not touch the aluminum electrolytic capacitors.

(4) Do not drop the assembled board.

6. Washing the PC boards

(1) Do not wash capacitors by using the following cleaning agents. Solvent resistant capacitors are only suitable for washing using the cleaning conditions prescribed in the catalog or the product specification. In particular, ultrasonic cleaning will accelerate damage to capacitors.

- Halogenated solvents; cause capacitors to fail due to corrosion.
  Alkali system solvents; corrode (dissolve) an aluminum case.
- Petroleum system solvents; cause the rubber seal material to deteriorate.
- Xylene; causes the rubber seal material to deteriorate.
- Acetone; erases the markings.

(2) Verify the following points when washing capacitors.

- Monitor conductivity, ph, specific gravity and the water content of cleaning agents. Contamination adversely affects these characteristics.
- Be sure not to expose the capacitors under solvent rich conditions or keep capacitors inside a closed container. In addition, please dry the solvent sufficiently on the PC board and the capacitor with an air knife (temperature should be less than the maximum rated category temperature of the capacitor) for 10 minutes. Aluminum electrolytic capacitors can be characteristically and catastrophically damaged by halogen ions, particularly by chlorine ions, though the degree of the damage mainly depends upon the characteristics of the electrolyte and rubber seal material. When halogen ions come into contact with the capacitors, the foil corrodes when a voltage is applied. This corrosion causes an extremely high leakage current which results venting and an open circuit.

Storage

The following conditions for storage are recommend.

(1) Store capacitors in a cool, dry place. Store at a temperature between 5 and 35℃, with a humidity of 75% or less. SMD products are sealed in a special laminated aluminum bag. Use all capacitors once the bag is opened. Return unused capacitors to the bag, and seal it with a zipper. Be sure to follow our recommendations for reflow soldering.

(2) Store the capacitors in a location free from direct contact with water, salt water, and oil.

(3) Store in a location where the capacitor is not exposed to toxic gas, such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine or chlorine compounds, bromine or other halogen gases, methyl bromide or other halogen compounds, ammonia, or similar.

(4) Store in a location where the capacitor is not exposed to ozone, ultraviolet radiation, or other radiation.

(5) It is recommended to store capacitors in their original packaging wherever possible.

For Aluminum Electrolytic Capacitors

When you use aluminum electrolytic capacitors, remember the following.

1.Polarity

- Regular electrolytic Capacitor has polarity.
- Reverse voltage causes short circuit breakage of the capacitor or leakage of electrolyte. Where the polarity in a circuit sometimes reversed or unknown, a bi-polar capacitor should be used.

2.Overvoltage

- Do not apply overvoltage continuously.
- When overvoltage is applied to the capacitor, leakage current increase drastically.
- Applied working voltage to capacitors should not exceed the rated working voltage of capacitor.

3.Operating temperature and life:

- Do not use the capacitor over the max operating temperature.
- Life time of the capacitor depends on the temperature.
- Generally, life time is doubled by decreasing each temperature 10℃.
- Use temperature as low as possible.

4.Vent

- It is recommended at least 3mm of space around the vent.
- If such space is not provided, the vent will not operate completely.

5.Ripple current

- Do not apply a ripple current exceeding the rated maximum ripple current.
- Applying too much ripple current to the capacitor causes great heat generation, invites deterioration of properties of cases breakage.
- Please consult factory if ripple current exceeds the specified limit.

6.Charge and discharging

- Frequent and quick charge/discharge generates heat inside the capacitor, causing increase of leakage current, decrease of capacitance, or breakage occasionally.
- Consult us for assistance in this application.

使用鋁電解電容器注意事項：

1.極性

鋁電解電容器一般是有極性的，極性反接是造成鋁電解電容器短路損壞及漏液的原因，因此在無法辨識電氣迴路上之極性或使用於有極性變換設計之迴路時，請選用無極性電解電容器。

2.過載

請勿連續施加過載電壓。當電壓過載時電解電容器的漏電流會急速增加，所以電解電容器之工作電壓不應超過額定值。

3.使用溫度和壽命

電解電容器之使用溫度請勿超出最高使用溫度之設定範圍。電解電容器的壽命取決於使用溫度，一般來說當電解電容器之使用溫度降低10℃時，其壽命將增為兩倍，因此電解電容器應儘可能在較低溫度下使用。

4.防爆孔

有防爆孔設計之電解電容器其使用時防爆孔側應與其它機構保持最少3mm以上之空間距離，如此條件不能滿足的話，防爆孔將無法正常運作。

5.紋波電流

請勿施加超過額定最高紋波電流容許值以上之紋波電流。施加過大紋波電流將使電解電容器的內溫異常上升，引起電解電容器電氣特性劣化及破損。如有需要施加額定值以上之紋波電流等要求時，請諮詢敝廠人員。

6.充放電

經常及快速的充放電將使電容器之內溫異常上升，使漏電流增加、容量降低，有時還會造成產品之損壞，如對充放電有特殊要求時請諮詢敝廠人員。

7.Storage

- When the capacitor is stored for a long time without applying voltage, leakage current tends to increase.
- This returns to normal by applying the rated voltage to the capacitor before use.
- It is recommended to apply D.C. working voltage to the capacitor for 30 minutes through 1KΩ of protective series resistor, if it is stored for more than 6 months.
- The capacitor should be stored at temperature 5℃ to 35℃, with humidity of 75% or less.

7.電解電容器的儲存

當電解電容器經過長時間之放置後，通常其漏電流有增大之傾向。因此在使用經過長時間放置後之電解電容器以前，需先施加定額電壓使其電氣特性 回復正常；如儲存時間長於6個月以上時，請串排1kΩ之保護電阻後，使其持續負載定額工作電壓30分鐘。另外電解電容器應儲存於溫度介於5℃～35℃及濕度75%或以下之環境。

8.Soldering

- Improper soldering may shrink or break the insulating sleeve and/or damage the internal element as terminals and lead wires conduct heat into the capacitor.
- Avoid too high a soldering temperature and/or too long a soldering time.

8.焊錫

不適當的焊錫溫度及時間可能造成表面膠管之異常收縮破裂，有時高溫也會藉由導針及端子導熱至素子內部，對產品造成不良影響，因此須儘量避免過高溫度及過長時間之焊錫。

9.Mechanical stress on the lead wire and the terminal

- Do not apply excessive force to the lead wire and the terminal.
- Do not move the capacitor after soldering to the PC board, not carry the PC hoard by picking up the capacitor. For their strength, refer to JIS C-5141 and C-5102.

9.導針與端子之機械強度

請勿施加過度之外力於導針及端子上。請勿扳開已焊接於PC板上之電解電容器，更不要以電解電容器為施力點提起或移動整塊pc板。

10.Cleaning of boards after soldering

- If the capacitor is cleaned in halogenated solvent for organic removing solder flux solvent, the solvent may penetrate into the inside of capacitor, and may generate corrosion.

10.焊錫後之基板清洗

如使用鹵化有機溶劑清洗基板，溶劑有可能滲進電解電容器內部引起腐蝕。

11.Sleeve material

- The standard sleeve matenal is polyethylene terephthalate.
- If exposed to xylene, toluene, etc, and then subjected to high heat, the sleeve may crack. This sleeve is not insulating material.

11.套管材料

一般使用之塑膠套膠材質多為聚對苯二甲酸乙二酯（PET），如塑膠膠管在浸漬二甲苯或甲苯後再放置於高溫下，將產生分解反應，膠管將失去絕緣功能。

12.CapXon's Products meet quality standards specified by JIS-C-5101-1 and the reliability requirements refer to JIS-C-5101-4(non-SMD liquid capacitor), -18(Liquid SMD capacitor), -25(solid SMD capacitor),-26(solid Radial capacitor).

12.本公司之產品品質符合JIS-C-5101-1指定標準，其信賴性試驗方法依JIS-C-5101-4(非SMD液態電容)，-18（液態SMD電容），-25(固態SMD電容)，-26（固態導針型電容）之規範為基準。

13.None of ozone depleting chemicals (ODC) under the Montreal Protocol is used in manufacturing process of CapXon Electronic Industrial CO., Ltd.

13.本公司依蒙特利爾協議書之規定，於生產過程中不使用破壞臭氧層之藥品。

PL series Low ESR ≤ 9mΩ

Features

- ◆ Very Low ESR at high frequency range.
- ◆ Very Large permissible ripple current.

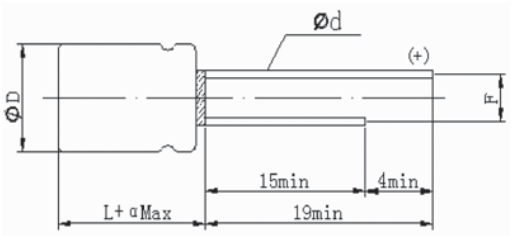
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~+105℃	
Rated Voltage Range	2.5~16 VDC	
Capacitance Range	180 to 3500 μF	
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	≦0.2CV (μA, after 2 minutes)	
Dissipation Factor (tan δ ，at 20℃，120Hz)	Not to exceed the value specified	
ESR（100K~300KHz）	Not to exceed the value specified	
Endurance 105℃，2000h，at rated voltage	Capacitance	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90~95%，1000h	Capacitance	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Current

Frequency	120Hz≦freq.<1KHz	1KHz≦freq.<10KHz	10KHz≦freq.<100KHz	100KHz≦freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



ϕDxL	ϕD+0.5max.	α	F±0.5	ϕd±0.05
8x8	8.0	1.0	3.5	0.6
8x11.5	8.0	1.5	3.5	0.6
10x12.5	10.0	1.5	5.0	0.6

Dimensions & Characteristics

ϕ DxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
2.5	560	280	0.08	9	6100	8x8
						8x11.5
	680	340	0.08	9	6100	8x8
						8x11.5
	820	410	0.08	9	6100	8x8
						8x11.5
	1000	500	0.08	9	6100	8x8
						8x11.5
	1200	600	0.08	9	6100	8x8
						8x11.5
	1500	750	0.08	9	6100	8x8
						8x11.5
	2000	1000	0.08	9	6100	8x11.5
					6640	10x12.5
	2500	1250	0.08	9	6640	10x12.5
	2700	1350	0.08	9	6640	10x12.5
	3000	1500	0.08	9	6640	10x12.5
	3300	1650	0.08	9	6640	10x12.5
	3500	1750	0.08	9	6640	10x12.5
4	560	224	0.08	9	6100	8x8
						8x11.5
	680	272	0.08	9	6100	8x8
						8x11.5
	820	328	0.08	9	6100	8x8
						8x11.5
						10x12.5
	1000	800	0.08	9	6100	8x8
						8x11.5
	1200	960	0.08	9	6100	8x11.5
					6640	10x12.5
	1500	1200	0.08	9	6100	8x11.5
						10x12.5
	2000	1600	0.08	9	6640	10x12.5
	2500	1500	0.08	9	6640	10x12.5
6.3	180	226.8	0.07	9	6100	8x8
						8x11.5
	220	277	0.07	9	6100	8x8
						8x11.5
	270	340.2	0.07	9	6100	8x8
						8x11.5
	330	416	0.07	9	6100	8x8
						8x11.5
	390	491.4	0.08	9	6100	8x8
						8x11.5
	470	592	0.08	9	6100	8x8
						8x11.5
	560	705.6	0.08	9	6100	8x8
						8x11.5
	680	428.4	0.08	9	6100	8x8
						8x11.5
	820	516.6	0.10	9	6100	8x8
					6100	8x11.5
	1000	630	0.10	9	6100	8x8
					6100	8x11.5
					6640	10x12.5
	1200	756	0.10	9	6100	8x11.5
					6640	10x12.5
	1500	945	0.10	9	6100	8x11.5
					6640	10x12.5
	2000	1260	0.10	9	6640	10x12.5
	2200	1336	0.10	9	6640	10x12.5
	2500	1575	0.10	9	6640	10x12.5

Ripple Current (mA, rms) at 105℃, 100KHz

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
10	180	360	0.07	9	6100	8x8
					5600	8x11.5
	220	440	0.08	9	6100	8x8
					5600	8x11.5
	270	540	0.08	9	6100	8x8
					5600	8x11.5
	330	660	0.08	9	6100	8x8
					5600	8x11.5
	390	780	0.08	9	6100	8x8
					5600	8x11.5
	470	940	0.08	9	6100	8x8
					5600	8x11.5
	560	560	0.10	9	6100	8x8
					5600	8x11.5
	680	680	0.10	9	5600	8x8
					5600	8x11.5
					6100	10x12.5
	820	820	0.10	9	5600	8x11.5
					6100	10x12.5
	1000	1000	0.10	9	5600	8x11.5
					6100	10x12.5
	1200	1200	0.10	9	6100	10x12.5
	1500	1500	0.10	9	6100	10x12.5
16	180	576	0.08	9	5600	8x11.5
	220	704	0.08	9	5600	8x11.5
	270	864	0.08	9	5600	8x11.5
	330	528	0.08	9	5600	8x11.5
					6100	10x12.5
	390	624	0.08	9	5600	8x11.5
					6100	10x12.5
	470	752	0.10	9	5600	8x11.5
					6100	10x12.5
	560	896	0.10	9	5600	8x11.5
					6100	10x12.5
	680	1000	0.10	9	6100	10x12.5
	820	1280	0.10	9	6100	10x12.5
	1000	1600	0.10	9	6100	10x12.5

ΦDxL(mm)

Size List

WV(SV) / Cap(μF)	2.5 (2.8)	4 (4.6)	6.3 (7.2)	10 (11.5)	16 (18.4)
180			8x8/8x11.5	8x8/8x11.5	8x11.5
220			8x8/8x11.5	8x8/8x11.5	8x11.5
270			8x8/8x11.5	8x8/8x11.5	8x11.5
330			8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5
390			8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5
470			8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5
560	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5
680	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5/10x12.5	10x12.5
820	8x8/8x11.5	8x8/8x11.5/10x12.5	8x8/8x11.5	8x11.5/10x12.5	10x12.5
1000	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5/10x12.5	8x11.5/10x12.5	10x12.5
1200	8x8/8x11.5	8x11.5/10x12.5	8x11.5/10x12.5	10x12.5	
1500	8x8/8x11.5	8x11.5/10x12.5	8x11.5/10x12.5	10x12.5	
2000	8x11.5/10x12.5	10x12.5	10x12.5		
2500	10x12.5	10x12.5	10x12.5		
2700	10x12.5				
3000	10x12.5				
3300	10x12.5				
3500	10x12.5				

Ripple Current (mA, rms) at 105℃ 100KHz

PS series Standard Products

Features

- ◆ Low ESR at high frequency range.
- ◆ Large permissible ripple current.

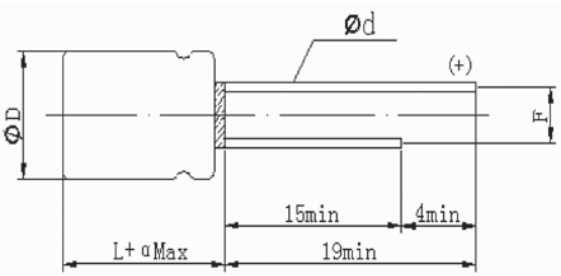
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~+105℃	
Rated Voltage Range	2.5~25 VDC	
Capacitance Range	39 to 3500 μF	
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	≦0.2CV (μA, after 2 minutes)	
Dissipation Factor (tan δ，at 20℃，120Hz)	Not to exceed the value specified	
ESR（100K~300KHz）	Not to exceed the value specified	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90~95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Current

Frequency	120Hz≦freq.<1KHz	1KHz≦freq.<10KHz	10KHz≦freq.<100KHz	100KHz≦freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



ϕDxL	ϕD+0.5max.	α	F±0.5	ϕd±0.05
8x8	8.0	1.0	3.5	0.6
8x11.5	8.0	1.5	3.5	0.6
10x12.5	10.0	1.5	5.0	0.6

Conductive Polymer

Dimensions & Characteristics

φ DxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
2.5	560	280	0.08	12	5100	8x8
						8x11.5
	680	340	0.08	12	5200	8x8
						8x11.5
	820	410	0.08	12	5200	8x8
						8x11.5
	1000	500	0.08	12	5500	8x8
						8x11.5
	1200	600	0.08	12	5500	8x8
						8x11.5
	1500	750	0.08	12	5500	8x8
						8x11.5
	2000	1000	0.08	12	5900	8x11.5
						10x12.5
	2200	1100	0.08	12	5900	10x12.5
	2500	1250	0.08	12	5900	10x12.5
	2700	1350	0.08	12	5900	10x12.5
	3000	1500	0.08	12	5900	10x12.5
	3300	1650	0.08	12	5900	10x12.5
	3500	1750	0.10	12	5900	10x12.5
4	560	448	0.08	12	5100	8x8
					5200	8x11.5
	680	544	0.08	12	5100	8x8
					5200	8x11.5
	820	656	0.08	12	5100	8x8
					5200	8x11.5
					5900	10x12.5
	1000	800	0.10	12	5100	8x8
					5500	8x11.5
					5900	10x12.5
	1200	960	0.10	12	5500	8x11.5
					5900	10x12.5
	1500	600	0.10	12	5500	8x11.5
					5900	10x12.5
	2000	800	0.10	12	5900	10x12.5
	2200	880	0.10	12	5900	10x12.5
	2500	1000	0.10	12	5900	10x12.5
6.3	180	226.8	0.07	21	5100	8x8
						8x11.5
	220	277	0.07	21	5100	8x8
						8x11.5
	270	340.2	0.07	21	5100	8x8
						8x11.5
	330	416	0.07	15	5100	8x8
					5500	8x11.5
	390	491.4	0.08	15	5100	8x8
					5500	8x11.5
	470	592	0.08	12	5100	8x8
					5500	8x11.5
	560	705.6	0.08	12	5100	8x8
					5500	8x11.5
	680	428	0.08	10	5100	8x8
				12	5500	8x11.5
					5900	10x12.5
	820	516.6	0.10	12	5100	8x8
					5500	8x11.5
					5900	10x12.5
	1000	630	0.10	12	5100	8x8
					5500	8x11.5
					5900	10x12.5
	1200	756	0.10	12	5500	8x11.5
					5900	10x12.5
	1500	945	0.10	12	5500	8x11.5
					5900	10x12.5
	2000	1260	0.10	12	5900	10x12.5
	2200	1386	0.10	12	5900	10x12.5
	2500	1575	0.10	12	5900	10x12.5

Ripple Current (mA, rms) at 105℃, 100KHz

Dimensions & Characteristics

ϕDxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
10	180	180	0.08	15	5100	8x8
					5500	8x11.5
	220	220	0.08	15	5100	8x8
					5500	8x11.5
	270	270	0.08	15	5100	8x8
					5500	8x11.5
	330	330	0.08	12	5100	8x8
					5500	8x11.5
	390	390	0.08	12	5100	8x8
					5500	8x11.5
	470	470	0.08	12	5500	8x8
					5500	8x11.5
	560	560	0.08	12	5500	8x8
					5500	8x11.5
	680	680	0.10	12	5500	8x8
					5900	8x11.5
					5900	10x12.5
	820	820	0.10	12	5900	8x11.5
					5900	10x12.5
	1000	1000	0.10	12	5900	8x11.5
					5900	10x12.5
	1200	1200	0.10	12	5900	10x12.5
	1500	1500	0.10	12	5900	10x12.5
16	100	160	0.08	12	4800	8x11.5
	150	240	0.08	12	4500	8x8
	180	288	0.08	15	4500	8x8
					4800	8x11.5
	220	352	0.08	15	4500	8x8
					5000	8x11.5
	270	432	0.08	12	4500	8x8
				15	5000	8x11.5
				12	5500	10x12.5
	330	528	0.08	12	4500	8x8
					5000	8x11.5
					5500	10x12.5
	390	624	0.08	12	4500	8x8
					5000	8x11.5
					5500	10x12.5
	470	752	0.10	12	5000	8x11.5
					5500	10x12.5
	560	896	0.10	12	5000	8x11.5
					5500	10x12.5
	680	1000	0.10	12	5500	10x12.5
	820	1000	0.10	12	5500	10x12.5
	1000	1000	0.10	12	5500	10x12.5

Ripple Current (mA, rms) at 105℃, 100KHz

ϕ DxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
20	39	156	0.08	25	3500	8x8
				20	3800	8x11.5
	47	188	0.08	25	3500	8x8
				20	3800	8x11.5
	68	272	0.08	25	3500	8x8
				20	4100	8x11.5
	82	328	0.08	20	3800	8x8
					4100	8x11.5
	100	400	0.08	18	3900	8x8
					4200	8x11.5
					4500	10x12.5
	150	600	0.08	18	3900	8x8
					4200	8x11.5
					4500	10x12.5
	180	720	0.08	18	3900	8x8
					4200	8x11.5
					4500	10x12.5
	220	880	0.08	18	3900	8x8
					4200	8x11.5
					4500	10x12.5
	270	1080	0.08	15	4500	8x11.5
					4900	10x12.5
	330	1320	0.08	15	4500	8x11.5
					4900	10x12.5
	390	1560	0.08	15	4500	8x11.5
					4900	10x12.5
	470	1880	0.08	15	4900	10x12.5
	560	2240	0.10	20	4500	10x12.5
	680	2720	0.10	20	4500	10x12.5
25	39	156	0.08	25	3500	8x8
				20	3800	8x11.5
	47	188	0.08	25	3500	8x8
				20	3800	8x11.5
	68	272	0.08	25	3500	8x8
				20	4100	8x11.5
	82	328	0.08	20	3800	8x8
					4100	8x11.5
	100	400	0.08	20	3900	8x8
					4200	8x11.5
					4500	10x12.5
	150	600	0.08	20	3900	8x8
					4200	8x11.5
					4500	10x12.5
	180	720	0.08	20	3900	8x8
					4200	8x11.5
					4500	10x12.5
	220	880	0.08	20	3900	8x8
					4200	8x11.5
					4500	10x12.5
	270	1080	0.08	18	4400	8x11.5
					4800	10x12.5
	330	1320	0.08	18	4400	8x11.5
					4800	10x12.5
	390	1950	0.08	20	4500	10x12.5
	470	1880	0.08	20	4500	10x12.5
	560	2240	0.10	20	4500	10x12.5

Ripple Current (mA, rms) at 105℃, 100KHz

Size List

ϕ DxL(mm)

RV (SV) / Cap(μ F)	2.5 (2.8)	4 (4.6)	6.3 (7.2)	10 (11.5)	16 (18.4)	20 (23)	25 (27.5)
39						8x8/8x11.5	8x8/8x11.5
47						8x8/8x11.5	8x8/8x11.5
68						8x8/8x11.5	8x8/8x11.5
82						8x8/8x11.5	8x8/8x11.5
100					8x8	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5
150					8x8	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5
180			8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5
220			8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5
270			8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	8x11.5/ 10x12.5	8x11.5/ 10x12.5
330			8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	8x11.5/ 10x12.5	8x11.5/ 10x12.5
390			8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	10x12.5	10x12.5
470			8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5	10x12.5	10x12.5
560	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	10x12.5		
680	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5 10x12.5	8x11.5/10x12.5	10x12.5		
820	8x8/8x11.5	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5	8x11.5/10x12.5	10x12.5		
1000	8x8/8x11.5	8x8/8x11.5 10x12.5	8x8/8x11.5 10x12.5	8x11.5/10x12.5	10x12.5		
1200	8x8/8x11.5	8x11.5/10x12.5	8x11.5/10x12.5	10x12.5			
1500	8x8/8x11.5	10x12.5	8x11.5/10x12.5	10x12.5			
2000	8x11.5/10x12.5	8x11.5/10x12.5	10x12.5				
2200	10x12.5	10x12.5	10x12.5				
2500	10x12.5	10x12.5	10x12.5				
2700	10x12.5						
3000	10x12.5						
3300	10x12.5						
3500	10x12.5						

Ripple Current (mA, rms) at 105℃ 100KHz

PU series Ultra Low ESR ≤ 7mΩ

Features

- ◆ Ultra Low ESR at high frequency range.
- ◆ Ultra Large permissible ripple current.

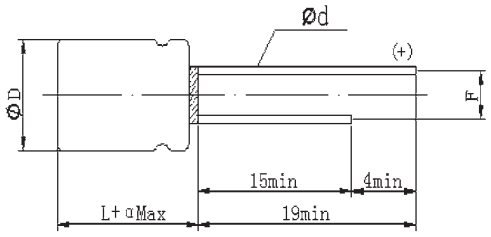
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~+105℃	
Rated Voltage Range	2.5~10 VDC	
Capacitance Range	180 to 3500 μF	
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	≦0.2CV (μA, after 2 minutes)	
Dissipation Factor (tan δ ，at 20℃，120Hz)	Not to exceed the value specified	
ESR（100K~300KHz）	Not to exceed the value specified	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90~95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Current

Frequency	120Hz≦freq.<1KHz	1KHz≦freq.<10KHz	10KHz≦freq.<100KHz	100KHz≦freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



φDxL	φD+0.5max.	α	F±0.5	φd±0.05
8x8	8.0	1.0	3.5	0.6
8x11.5	8.0	1.5	3.5	0.6
10x12.5	10.0	1.5	5.0	0.6

Dimensions & Characteristics

ϕ DxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
2.5	560	280	0.08	7	6100	8x8
						8x11.5
	680	340	0.08	7	6100	8x8
						8x11.5
	820	410	0.08	7	6100	8x8
						8x11.5
	1000	500	0.08	7	6100	8x11.5
	1200	600	0.08	7	6100	8x11.5
	1500	750	0.08	7	6100	8x11.5
					7100	10x12.5
	2000	1000	0.08	7	6100	8x11.5
				7	7100	10x12.5
	2500	1250	0.08	7	7100	10x12.5
	2700	1350	0.08	7	7100	10x12.5
	3000	1500	0.08	7	7100	10x12.5
	3300	1650	0.08	7	7100	10x12.5
	3500	1750	0.08	7	7100	10x12.5
4	560	224	0.08	7	6100	8x8
						8x11.5
	680	272	0.08	7	6100	8x8
						8x11.5
	820	328	0.08	7	6100	8x8
						8x11.5
					6600	10x12.5
	1000	800	0.08	7	6100	8x8
					6100	8x11.5
					6600	10x12.5
	1200	960	0.08	7	6100	8x11.5
					6600	10x12.5
	1500	1200	0.10	7	6100	8x11.5
					6600	10x12.5
	2000	1600	0.10	7	6600	10x12.5
	2500	1500	0.10	7	6600	10x12.5
6.3	180	113.4	0.10	7	6100	8x8
						8x11.5
	220	138.6	0.10	7	6100	8x8
						8x11.5
	270	170	0.10	7	6100	8x8
						8x11.5
	330	207.9	0.10	7	6100	8x8
						8x11.5
	390	245.7	0.10	7	6100	8x8
						8x11.5
	470	296.1	0.10	7	6100	8x8
						8x11.5
	560	352	0.08	7	6100	8x8
						8x11.5
	680	428.4	0.08	7	6100	8x8
					6600	8x11.5/10x12.5
	820	516.6	0.10	7	6100	8x8
					6600	8x11.5/10x12.5
	1000	630	0.10	7	7100	8x11.5/10x12.5
	1200	756	0.10	7	7100	8x11.5/10x12.5
	1500	945	0.10	7	7100	10x12.5
	2000	1260	0.10	7	7100	10x12.5
	2500	1575	0.10	7	7100	10x12.5
10	180	180	0.08	7	6600	8x11.5
	220	220	0.08	7	6600	8x11.5
	270	270	0.08	7	6600	8x11.5
	330	330	0.08	7	6600	8x11.5
	390	390	0.08	7	6600	8x11.5
	470	470	0.08	7	6600	8x11.5/10x12.5
	560	560	0.08	7	6600	8x11.5/10x12.5
	680	680	0.10	7	6600	8x11.5/10x12.5
	820	820	0.10	7	7100	8x11.5/10x12.5
	1000	1000	0.10	7	7100	10x12.5
	1200	1200	0.10	7	7100	10x12.5
	1500	1500	0.10	7	7100	10x12.5

Ripple Current (mA, rms) at 105℃, 100KHz

Size List

ϕ DxL(mm)

WV (SV) / Cap(μ F)	2.5 (2.8)	4 (4.6)	6.3 (7.2)	10 (11.5)
180			8x8/8x11.5	8x11.5
220			8x8/8x11.5	8x11.5
270			8x8/8x11.5	8x11.5
330			8x8/8x11.5	8x11.5
390			8x8/8x11.5	8x11.5
470			8x8/8x11.5	8x11.5/10x12.5
560	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5	8x11.5/10x12.5
680	8x8/8x11.5	8x8/8x11.5	8x8/8x11.5/10x12.5	8x11.5/10x12.5
820	8x8/8x11.5	8x8/8x11.5/10x12.5	8x8/8x11.5/10x12.5	8x11.5/10x12.5
1000	8x11.5	8x8/8x11.5/10x12.5	8x11.5/10x12.5	10x12.5
1200	8x11.5	8x11.5/10x12.5	8x11.5/10x12.5	10x12.5
1500	8x11.5/10x12.5	8x11.5/10x12.5	8x11.5/10x12.5	
2000	8x11.5/10x12.5	10x12.5	10x12.5	
2500	10x12.5	10x12.5	10x12.5	
2700	10x12.5			
3000	10x12.5			
3300	10x12.5			
3500	10x12.5			

Ripple Current (mA, rms) at 105℃ 100KHz

PX series Low Profile

Features

- ◆ Low profile.
- ◆ Low ESR at high frequency range & Large permissible ripple current.

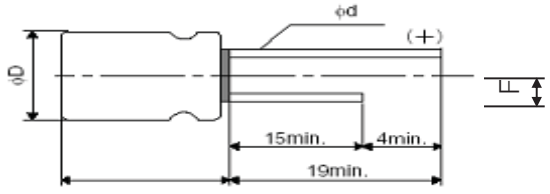
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	2.5 ～25V DC	
Capacitance Range	10 to 820μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 120Hz，20℃)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

Frequency	120Hz≤freq.<1kHz	1kHz≤freq.<10kHz	10kHz≤freq.<100kHz	100kHz≤freq.<300kHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



ΦD×L	ΦD±0.5max.	α	F±0.5	Φd±0.05
4×5/4×7	4.0	1.0	1.5	0.45
5×5/5×7	5.0	1.0	2.0	0.45
5×8/5×9	5.0	1.0	2.0	0.50
5×11	5.0	1.0	2.0	0.60
6.3×5.2/6.3×7	6.3	1.0	2.5	0.45
6.3×9	6.3	1.0	2.5	0.50
6.3×11	6.3	1.0	2.5	0.60

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
2.5	100	4×5	300	0.08	30	1670
	150	5×5	300	0.08	30	1970
		6.3×5.2	300	0.08	30	2200
	180	5×5	300	0.08	30	1970
	220	5×5	300	0.08	30	2200
	330	6.3×5.2	300	0.08	25	2610
	390	6.3×5.2	300	0.08	20	2690
		6.3×7	300	0.08	15	3100
	470	6.3×5.2	300	0.08	20	2690
		6.3×7	300	0.08	15	3100
	560	5×9	300	0.08	15	3100
		6.3×7	300	0.08	15	3100
	680	6.3×11	300	0.08	15	3500
4	100	5×5	300	0.08	30	1970
		6.3×5.2	300	0.08	30	2200
	150	6.3×7	300	0.08	25	2670
	220	6.3×7	300	0.08	20	2690
	270	6.3×5.2	300	0.08	25	2610
		6.3×9	300	0.08	15	3300
	330	6.3×5.2	300	0.08	20	2690
		6.3×7	300	0.08	15	3100
	390	6.3×9	300	0.08	15	3300
	470	6.3×7	300	0.08	15	3100
	560	6.3×11	300	0.08	15	3500
6.3	82	6.3×5.2	300	0.08	30	2200
	100	6.3×5.2	300	0.08	25	2390
		6.3×7	300	0.08	20	2690
	150	4×7	300	0.08	35	1900
	220	5×7	300	0.08	20	2450
		5×8	300	0.08	15	2690
		6.3×5.2	300	0.08	20	2690
		6.3×7	300	0.08	15	3100
		6.3×9	300	0.08	15	3300
	270	5×7	300	0.08	20	2450
		5×8	300	0.08	15	2690
	330	5×8	300	0.08	15	2690
		5×9	300	0.08	15	3100
		6.3×5.2	300	0.08	20	2690
		6.3×9	300	0.08	15	3300
	390	5×9	300	0.08	15	3100
		6.3×11	300	0.08	15	3500
	470	6.3×7	300	0.08	15	3100
	680	6.3×9	300	0.08	15	3300
		6.3×11	300	0.08	15	3500
	820	6.3×11	300	0.08	15	3500

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
10	10	4×5	300	0.08	80	1200
	22	4×5	300	0.08	80	1200
	33	5×5	300	0.08	45	1670
		6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2410
	39	5×5	300	0.08	45	1670
	47	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	20	2690
		6.3×9	300	0.08	18	3100
	56	6.3×5.2	300	0.08	30	2200
	68	6.3×9	300	0.08	18	3100
	82	6.3×5.2	300	0.08	30	2200
	100	6.3×5.2	300	0.08	30	2200
		6.3×9	300	0.08	18	3100
	150	5×7	300	0.08	25	2100
		6.3×5.2	300	0.08	25	2200
		6.3×9	300	0.08	18	3100
	180	5×11	300	0.08	20	2690
	220	5×11	300	0.08	20	2690
		6.3×9	300	0.08	15	3300
	270	5×11	300	0.08	20	2690
		6.3×7	300	0.08	20	3100
		6.3×11	300	0.08	15	3500
	330	6.3×9	300	0.08	15	3300
	470	6.3×9	300	0.08	15	3300
		6.3×11	300	0.08	15	3500
16	10	6.3×5.2	300	0.08	30	2200
	22	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2610
	33	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2610
	39	6.3×5.2	300	0.08	30	2200
	47	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2610
	82	6.3×7	300	0.08	20	2690
	100	5×11	300	0.08	20	2690
		6.3×5.2	300	0.08	30	2200
		6.3×9	300	0.08	20	2900
		6.3×11	300	0.08	15	3500
	150	6.3×7	300	0.08	20	2690
	180	6.3×9	300	0.08	20	3100
	220	6.3×9	300	0.08	20	3100
		6.3×11	300	0.08	15	3500
	270	6.3×11	300	0.08	15	3500
	330	6.3×9	300	0.08	15	3100
20	10	6.3×5.2	300	0.08	30	2200
	15	6.3×7	300	0.08	25	2670
	22	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2670
	33	6.3×7	300	0.08	25	2670
		6.3×9	300	0.08	20	2900
	47	6.3×7	300	0.08	25	2670
	56	6.3×9	300	0.08	20	2900
	68	6.3×9	300	0.08	20	2900
		6.3×11	300	0.08	20	2900
	82	6.3×11	300	0.08	20	2900
25	6.8	6.3×5.2	300	0.08	40	1800
	10	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2670
	15	6.3×5.2	300	0.08	30	2200
		6.3×7	300	0.08	25	2670
	22	6.3×7	300	0.08	25	2670
	27	6.3×9	300	0.08	25	2670
	33	6.3×7	300	0.08	25	2670
		6.3×5.2	300	0.08	30	2200
	39	6.3×7	300	0.08	25	2670
	47	6.3×9	300	0.08	25	2670
	56	6.3×11	300	0.08	20	2900
	68	6.3×11	300	0.08	20	2900

Ripple Current(mA,rms)at 105℃,100kHz

PE series

Features

- ◆ Down Size to φ6.3×8.
- ◆ Low ESR & large capacitance.
- ◆ Large permissible ripple current.

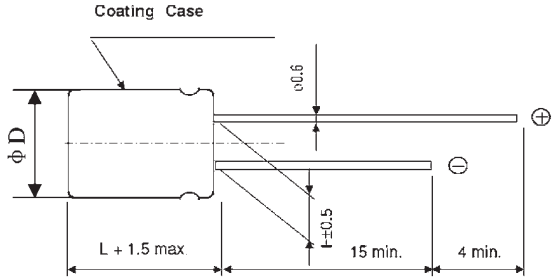
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~+105℃	
Rated Voltage Range	2.5~6.3 VDC	
Capacitance Range	470 to 820 μF	
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	≤0.2CV (μA, after 2 minutes)	
Dissipation Factor (tan δ，at 20℃，120Hz)	Not to exceed the value specified	
ESR（100K~300KHz）	Not to exceed the value specified	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90~95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Current

Frequency	120Hz≦freq.<1KHz	1KHz≦freq.<10KHz	10KHz≦freq.<100KHz	100KHz≦freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



φDxL	φD+0.5max.	α	F±0.5	φd±0.05
6.3x8	6.3	1.5	2.5	0.6

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100kHz)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
2.5	820	410	0.08	6	5600	6.3x8
4	560	448	0.08	6	5600	
6.3	470	592.2	0.08	7	5100	
	560	705.6	0.08	7	5100	
16	270	864	0.08	9	4500	

Ripple Current (mA, rms) at 105℃, 100KHz

Conductive Polymer

PW series

Features

- ◆ Low height
- ◆ Low ESR at high frequency range.

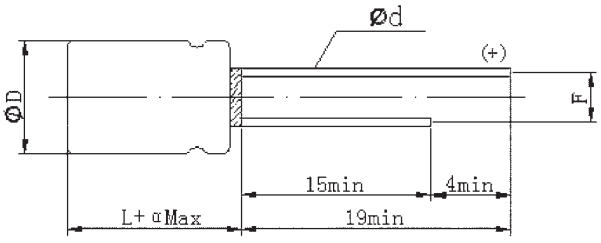
Specifications

Item	Performance Characteristics	
Operating Temp. Range	-55℃～+105℃	
Rated Voltage Range	2.5～25V DC	
Capacitance Range	39 to 2500μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	≤0.2CV （μA, after 2 minutes）	
Dissipation Factor (tan δ，at 20℃，120Hz)	Not to exceed the value specified	
ESR（100K~300KHz）	Not to exceed the value specified	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90~95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Current

Frequency	120Hz≦freq.<1KHz	1KHz≦freq.<10KHz	10KHz≦freq.<100KHz	100KHz≦freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



φDxL	φD+0.5max.	α	F±0.5	φd±0.05
8x7	8.0	1.0	3.5	0.6
10x7	10.0	1.5	5.0	0.6
10x10	10.0	1.5	5.0	0.6

Conductive Polymer

Dimensions & Characteristics

ϕ DxL(mm)

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tg δ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
2.5	820	410	0.08	20	3700	8x7
	1000	500	0.08	20	3700	8x7
	1200	600	0.08	15	4200	10x7
	1500	750	0.10	15	4200	10x7
	1800	900	0.10	15	4200	10x7
				12	4500	10x10
	2000	1000	0.10	15	4200	10x7
				12	4500	10x10
	2500	1250	0.10	12	4500	10x10
4	560	448	0.08	20	3700	8x7
	680	544	0.08	20	3700	8x7
	820	656	0.08	20	3700	8x7
				15	4200	10x7
	1000	800	0.10	15	4200	10x7
	1200	960	0.10	15	4200	10x7
				12	4500	10x10
	1500	1200	0.10	15	4200	10x7
				12	4500	10x10
	1800	1440	0.10	12	4500	10x10
6.3	470	592	0.08	20	3700	8x7
	560	705.6	0.08	20	3700	8x7
	680	856.8	0.08	20	3700	8x7
	820	1033.2	0.10	20	3700	8x7
				15	4200	10x7
	1000	1260	0.10	15	4200	10x7
				12	4500	10x10
	1200	1512	0.10	15	4200	10x7
				12	4500	10x10
	1500	1890	0.10	12	4500	10x10
10	330	660	0.08	20	3700	8x7
	390	780	0.08	20	3700	8x7
	470	940	0.08	20	3700	8x7
				15	4200	10x7
	560	1120	0.08	15	4200	10x7
				12	4500	10x10
	680	1360	0.10	15	4200	10x7
				12	4500	10x10
	820	1640	0.10	15	4200	10x7
				12	4500	10x10
	1000	2000	0.10	12	4500	10x10
16	180	576	0.08	20	3300	8x7
	220	704	0.08	20	3300	8x7
	270	864	0.08	20	3300	8x7
				20	3700	10x7
	330	1056	0.10	20	3700	10x7
				15	4200	10x10
	390	1248	0.10	20	3700	10x7
				20	4200	10x10
	470	1504	0.10	20	3700	10x7
				15	4200	10x10
	560	1792	0.10	15	4200	10x10

W.V. （V）	Capacitance （μF）	L.C. （μA,2min）	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)	Size ΦDxL(mm)
20	56	224	0.08	25	3000	8x7
	68	272	0.08	25	3000	8x7
	82	328	0.08	25	3000	8x7
				25	3400	10x7
	100	400	0.08	25	3000	8x7
				25	3400	10x7
				20	3800	10x10
	150	600	0.08	25	3000	8x7
				25	3400	10x7
				20	3800	10x10
	180	720	0.08	25	3000	8x7
				25	3400	10x7
				20	3800	10x10
	220	880	0.10	25	3400	10x7
				20	3800	10x10
	270	1080	0.10	25	3400	10x7
				20	3800	10x10
	330	1320	0.10	20	3800	10x10
25	39	195	0.08	25	3000	8x7
	47	235	0.08	25	3000	8x7
	56	280	0.08	25	3000	8x7
	68	340	0.08	25	3000	8x7
				25	3400	10x7
	82	410	0.08	25	3000	8x7
				25	3400	10x7
				20	3800	10x10
	100	500	0.10	25	3400	10x7
				20	3800	10x10
	120	600	0.10	25	3400	10x7
				20	3800	10x10
	150	750	0.10	25	3400	10x7
				20	3800	10x10
	180	900	0.10	20	3800	10x10

Ripple Current (mA, rms) at 105℃, 100KHz

Size List

ϕ DxL(mm)

WV (SV) Cap(μF)	2.5(2.8)	4(4.6)	6.3(7.2)	10(11.5)	16(18.4)	20(23)	25(27.5)
39							8x7
47							8x7
56						8x7	8x7/10x7
68						8x7	8x7/10x7
82						8x7/10x7	8x7/10x7/10x10
100						8x7/10x7/10x10	10x7/10x10
150						8x7/10x7/10x10	10x7/10x10
180					8x7	8x7/10x7/10x10	10x10
220					8x7	10x7/10x10	
270					8x7/10x7	10x7/10x10	
330				8x7	10x7/10x10	10x10	
390				8x7	10x7/10x10		
470			8x7	8x7/10x7	10x7/10x10		
560		8x7	8x7	10x7/10x10	10x10		
680		8x7	8x7	10x7/10x10			
820	8x7	8x7/10x7	8x7/10x7	10x7/10x10			
1000	8x7	10x7	10x7/10x10	10x10			
1200	10x7	10x7/10x10	10x7/10x10				
1500	10x7	10x7/10x10	10x10				
1800	10x7/10x10	10x10					
2000	10x7/10x10						
2500	10x10						

Ripple Current (mA, rms) at 105℃ 100KHz

Updated Series
Preliminary Data Sheet

CapXon

PH series

PH series High Voltage/High Reliability

Features

- ◆ High voltage and high reliability.
- ◆ Large permissible ripple current.
- ◆ Low ESR at high frequency range.

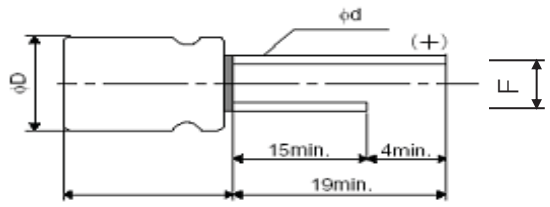
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	35～100V DC	
Capacitance Range	6.8 to 330μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 120Hz，20℃)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

Frequency	120Hz≤freq.<1kHz	1kHz≤freq.<10kHz	10kHz≤freq.<100kHz	100kHz≤freq.<300kHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



φD×L	ΦD±0.5max.	α	F	Φd±0.05
6.3×8	6.3	1.0	2.5	0.6
8×8	8.0	1.0	3.5	0.6
8×9/ 8×11.5	8.0	1.5	3.5	0.6
10×10	10.0	1.5	5.0	0.6
10×12.5	10.0	1.5	5.0	0.6

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
35	10	6.3×8	175	0.12	40	2100
		8×8	175	0.12	35	2300
	22	6.3×8	154	0.12	40	2100
		8×11.5	154	0.12	30	2890
	33	8×8	231	0.12	30	2500
		8×11.5	231	0.12	25	3100
	39	8×11.5	273	0.12	25	3100
	47	8×8	329	0.12	30	2700
		8×11.5	329	0.12	20	3600
		10×12.5	329	0.12	20	3800
	56	8×8	392	0.12	30	2700
		8×11.5	392	0.12	20	3600
	68	8×8	476	0.12	30	2700
		8×11.5	476	0.12	20	3600
		10×12.5	476	0.12	20	4000
	82	8×11.5	574	0.12	20	3600
	100	8×8	700	0.12	25	2800
		8×11.5	700	0.12	20	3600
		10×10	700	0.12	25	3000
		10×12.5	700	0.12	20	4000
	120	10×12.5	840	0.12	20	4400
	150	10×12.5	1050	0.12	15	4400
	180	10×12.5	1260	0.12	20	4000
	220	10×12.5	1540	0.12	20	4000
	270	10×12.5	1890	0.12	20	4000
	330	10×12.5	2310	0.12	18	4400
50	10	8×8	100	0.12	45	2100
	12	6.3×8	120	0.12	50	1800
	22	8×8	220	0.12	45	2300
	27	8×11.5	390	0.12	32	2700
	33	8×8	330	0.12	45	2300
		8×11.5	330	0.12	32	2700
		10×12.5	330	0.12	30	3000
	39	8×11.5	390	0.12	32	2700
		10×12.5	390	0.12	30	3000
	47	8×11.5	470	0.12	30	2800
		10×12.5	470	0.12	25	3400
	56	8×11.5	560	0.12	30	2800
		10×10	560	0.12	30	2800
		10×12.5	560	0.12	25	3400

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
50	68	8×9	680	0.12	40	2400
		8×11.5	680	0.12	30	2800
		10×12.5	680	0.12	25	3400
	82	10×12.5	820	0.12	25	3400
	100	10×12.5	1000	0.12	25	3400
	120	10×12.5	1200	0.12	25	3400
63	10	8×8	126	0.12	45	1900
		8×11.5	126	0.12	45	2100
	22	8×8	277.2	0.12	45	2100
	27	8×11.5	340	0.12	35	2300
	33	8×11.5	415.8	0.12	35	2500
		10×10	416	0.12	35	2700
	39	8×11.5	491.4	0.12	35	2500
		10×12.5	491.4	0.12	32	2900
	47	8×11.5	592.2	0.12	35	2500
		10×12.5	592.2	0.12	30	3000
	56	10×12.5	705.6	0.12	30	3000
	68	10×12.5	856.8	0.12	30	3000
	82	10×12.5	1033.2	0.12	30	3000
	150	10×12.5	1890	0.12	30	3000
80	10	8×8	160	0.12	45	1900
	12	8×11.5	192	0.12	38	2100
	22	10×12.5	352	0.12	35	2800
	27	10×12.5	432	0.12	35	2800
	33	8×11.5	528	0.12	38	2100
		10×12.5	528	0.12	35	2800
100	6.8	8×8	136	0.12	45	1800
	8.2	8×11.5	164	0.12	45	1800
	10	8×11.5	200	0.12	42	2100
	12	8×11.5	240	0.12	42	2100
		10×12.5	240	0.12	40	2300
	15	8×11.5	300	0.12	42	2100
	18	10×12.5	360	0.12	35	2500
	22	10×12.5	440	0.12	35	2800
	27	10×12.5	540	0.12	35	2800
	33	10×12.5	660	0.12	35	2800

Ripple Current(mA,rms)at 105℃,100kHz

CapXon

PT series

PT series 125℃ Guaranteed

Features

- ◆ 125℃ Guaranteed.
- ◆ Low ESR at high frequency range.

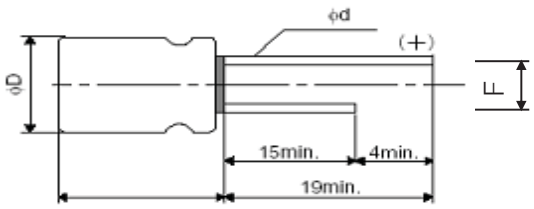
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+125℃	
Rated Voltage Range	2.5～50V DC	
Capacitance Range	22 to 2700μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 120Hz，20℃)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 125℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

Frequency	120Hz≤freq.<1kHz	1kHz≤freq.<10kHz	10kHz≤freq.<100kHz	100kHz≤freq.<300kHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mm)



φD×L	ΦD±0.5max.	α	F	Φd±0.05
6.3×5.2	6.3	1	2.5	0.45
6.3×11	6.3	1.5	2.5	0.6
8×7	8.0	1.0	3.5	0.6
8×8	8.0	1.0	3.5	0.6
8×11.5	8.0	1.5	3.5	0.6
10×8	10.0	1.0	5.0	0.6
10×10	10.0	1.5	5.0	0.6
10×12.5	10.0	1.5	5.0	0.6

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Rated Ripple Current	Allowable ripple current
						100KHz (mA,r.m.s)	
						105℃＜Tx≤125℃	Tx≤105℃
2.5	820	8×8	410	0.08	9	1741	5500
	1000	8×11.5	500	0.08	9	1929	6100
	1500	8×11.5	750	0.08	9	1929	6100
	2000	10×12.5	1000	0.08	9	2100	6640
	2700	10×12.5	1350	0.08	9	2100	6640
4	150	6.3×5.2	300	0.08	40	572	1810
	330	8×7	660	0.08	30	949	3000
	560	8×8	224	0.08	9	1741	5500
		8×11.5	224	0.08	9	1929	6100
	680	10×8	544	0.08	25	1170	3700
	820	8×8	328	0.08	9	1741	5500
	1200	8×11.5	960	0.08	9	1929	6100
	1500	10×12.5	1200	0.08	9	2100	6640
	2500	10×12.5	2000	0.08	9	2100	6640
6.3	82	6.3×5.2	258	0.08	40	569	1800
	150	8×7	472.5	0.08	30	949	3000
	330	10×8	415.8	0.08	25	1170	3700
	390	8×8	491.4	0.08	9	1741	5500
	470	8×11.5	592	0.08	9	1929	6100
	680	8×8	428	0.08	9	1741	5500
		10×12.5	428	0.08	9	1929	6100
	820	10×12.5	516.6	0.10	9	1929	6100
	1000	8×11.5	630	0.10	9	1929	6100
	1500	10×12.5	945	0.10	9	2100	6640
	2000	10×12.5	1260	0.10	9	2100	6640
10	56	6.3×5.2	280	0.08	40	569	1800
	120	8×7	240	0.08	30	949	3000
	220	8×11.5	220	0.08	9	1929	6100
	270	10×8	270	0.08	25	1170	3700
	330	8×11.5	330	0.08	9	1929	6100
	560	10×12.5	560	0.10	9	1929	6100
	680	8×11.5	680	0.10	9	1929	6100
	1000	10×12.5	1000	0.10	9	2100	6640
16	39	6.3×5.2	312	0.08	40	569	1800
	82	8×7	300	0.08	30	854	2700
	100	6.3×11	160	0.08	12	1518	4800
	150	8×8	240	0.08	18	1140	3600
		10×8	240	0.08	25	1044	3300
	180	8×11.5	288	0.08	10	1771	5600
	220	8×11.5	352	0.08	10	1771	5600
	270	8×11.5	432	0.08	10	1771	5600
	330	8×11.5	528	0.08	10	1771	5600
	470	10×12.5	752	0.10	10	1929	6100
	560	10×12.5	896	0.10	10	1929	6100

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Rated Ripple Current	Allowable ripple current
						100KHz (mA,r.m.s)	
						105℃＜Tx≤125℃	Tx≤105℃
20	22	6.3×5.2	220	0.12	60	458	1450
	47	8×7	300	0.12	30	854	2700
	68	10×8	272	0.12	30	949	3000
	100	8×11.5	400	0.12	22	1234	3900
	120	8×8	480	0.12	25	981	3100
	150	8×11.5	600	0.12	22	1234	3900
		10×12.5	600	0.12	20	1424	4500
	270	10×12.5	1080	0.12	20	1551	4900
25	68	8×11.5	340	0.12	24	1108	3500
	82	8×8	410	0.12	25	981	3100
	100	10×12.5	500	0.12	20	1424	4500
	120	8×11.5	600	0.12	22	1234	3900
	180	10×12.5	900	0.12	20	1424	4500
35	39	8×8	273	0.12	32	823	2600
	56	8×11.5	392	0.12	25	1013	3200
	100	10×12.5	700	0.12	22	1266	4000
50	22	8×8	220	0.12	35	790	2500
	27	8×11.5	270	0.12	32	854	2700
	33	10×10	330	0.12	30	1100	3476
	47	10×12.5	470	0.12	25	1297	4100

Ripple Current(mA,rms)at 125℃,100KHz

Updated Series
Preliminary Data Sheet

CapXon

PF series

PF series Long Life to 5,000Hours

Features

- ◆ Super Long Life to 5,000Hours.
- ◆ Low ESR at high frequency range.

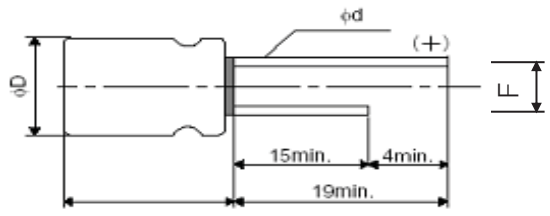
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	2.5～35V DC	
Capacitance Range	22to 2700μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 120Hz，20℃)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，5000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

Frequency	120Hz≤freq.<1kHz	1kHz≤freq.<10kHz	10kHz≤freq.<100kHz	100kHz≤freq.<300kHz
Coefficient	0.05	0.3	0.7	1

Diagram of Dimensions:(unit:mr



φD×L	ΦD±0.5max.	α	F	Φd±0.05
4×5	4	1.0	1.5	0.45
5×8/5×9	5	1.0	2.0	0.5
6.3×5.2	6.3	1.0	2.5	0.5
6.3×8	6.3	1.5	2.5	0.6
6.3×11	6.3	1.5	2.5	0.6
8×7/ 8×8	8.0	1.0	3.5	0.6
8×11.5	8.0	1.5	3.5	0.6
10×12.5	10.0	1.5	5.0	0.6

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
2.5	100	5×8	300	0.08	9	4180
	220	5×8	300	0.08	9	4180
	300	5×9	300	0.08	9	4180
	330	5×8	300	0.08	9	4180
		6.3×8	300	0.08	9	5600
	390	6.3×5.2	300	0.08	15	3100
	470	5×8	300	0.08	9	4180
		6.3×8	300	0.08	9	5600
	560	5×8	300	0.08	9	4180
		6.3×5.2	300	0.08	15	3100
		6.3×8	300	0.08	9	5600
		8×8	300	0.08	9	6100
	820	6.3×8	410	0.08	9	5600
		8×7	410	0.08	10	5000
		8×8	410	0.08	9	6100
	1000	8×8	500	0.08	9	6100
	1500	8×11.5	750	0.08	9	6100
	2000	10×12.5	1000	0.08	9	6640
	2700	10×12.5	1350	0.08	9	6640
4	270	6.3×8	300	0.08	9	5000
	330	5×8	300	0.08	9	4050
	390	6.3×8	312	0.08	9	5000
	560	6.3×8	448	0.08	9	5600
		8×7	448	0.08	15	3900
	680	8×8	542	0.08	9	6100
	820	8×8	656	0.08	9	6100
	1000	8×11.5	800	0.08	9	6100
	1200	10×12.5	960	0.08	9	6640
	1500	10×12.5	1200	0.08	9	6640
	2000	10×12.5	1600	0.08	9	6640
6.3	220	6.3×5.2	300	0.08	18	2980
		6.3×8	300	0.08	10	4500
	270	5×8	340.2	0.08	10	3700
	330	5×8	415.8	0.08	10	3700
		6.3×8	415.8	0.08	9	5000
	390	8×7	491.4	0.08	15	3900
		8×8	491.4	0.08	9	6100
	470	6.3×8	592.2	0.08	9	5100
		8×8	592.2	0.08	9	6100
	560	6.3×8	705.6	0.08	9	5100
		8×8	705.6	0.08	9	6100
	680	8×8	428	0.08	9	6100
	820	8×8	516.6	0.10	9	6100
		10×12.5	516.6	0.10	9	6640
	1000	8×11.5	630	0.10	9	6100
	1200	8×11.5	756	0.10	9	6100
	1500	10×12.5	945	0.10	9	6640
	2000	10×12.5	1260	0.10	9	6640

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
10	10	4×5	300	0.08	100	700
	68	6.3×8	300	0.08	10	4500
	100	6.3×8	300	0.08	10	4500
	150	6.3×8	300	0.08	10	4500
	270	8×7	270	0.08	22	3300
		8×11.5	270	0.08	9	5600
	330	8×11.5	330	0.08	9	5600
	390	8×8	390	0.08	9	6100
	470	8×8	470	0.08	9	6100
		10×12.5	470	0.08	9	6100
	560	8×8	560	0.10	9	6100
		10×12.5	560	0.10	9	6100
	680	8×11.5	680	0.10	9	6100
	820	10×12.5	820	0.10	9	6640
	1000	10×12.5	1000	0.10	9	6640
16	100	6.3×5.2	300	0.08	24	2490
		6.3×8	300	0.08	15	3500
		6.3×11	300	0.08	12	4800
	150	6.3×5.2	300	0.08	24	3200
		8×7	300	0.08	22	3300
	180	6.3×11	288	0.08	12	5600
		8×8	288	0.08	10	5100
		10×12.5	288	0.08	10	5600
	220	8×7	352	0.08	22	3300
		8×8	352	0.08	10	5100
	270	8×7	432	0.08	22	3300
		8×8	432	0.08	10	5100
		10×12.5	432	0.08	10	5600
	330	8×8	528	0.10	10	4700
		8×11.5	528	0.08	10	5600
	390	10×12.5	624	0.08	10	6100
	470	8×11.5	752	0.10	10	5400
		10×12.5	752	0.10	10	6100
	560	8×11.5	896	0.10	10	6100
		10×12.5	896	0.10	10	6100
	1000	10×12.5	1600	0.10	12	5400
20	120	6.3×5.2	480	0.12	25	3200
	150	10×12.5	600	0.12	14	5000
	180	8×7	720	0.12	25	3200
	330	10×12.5	1320	0.12	14	5000
	390	8×11.5	1560	0.12	14	4950
	560	10×12.5	2240	0.12	12	5400
	680	10×12.5	2720	0.12	12	5400
25	56	6.3×5.2	280	0.12	30	2800
	68	8×11.5	340	0.12	20	4100
	82	6.3×8	410	0.12	28	2780
		8×7	410	0.12	28	3000
	100	8×11.5	500	0.12	20	4100
		10×12.5	500	0.12	18	4650
	180	8×8	900	0.12	18	3770
		8×11.5	900	0.12	18	4200
	220	8×11.5	1100	0.12	18	4200
	270	10×12.5	1350	0.12	18	4650
	330	10×12.5	1650	0.12	14	5000
	390	10×12.5	1950	0.12	14	5000
35	22	6.3×5.2	300	0.12	35	2600
	33	10×12.5	231	0.12	25	3100
	39	8×7	273	0.12	32	2800
	68	8×11.5	476	0.12	20	3600
	82	8×11.5	574	0.12	20	3600
	120	10×12.5	840	0.12	18	4000
	150	10×12.5	1050	0.12	18	4000

Ripple Current(mA,rms)at 105℃,100KHz

Updated Series
Preliminary Data Sheet

CapXon

PM series

PM series SMD type & Low Profile.

Features

- ◆ SMD type & Low Profile.
- ◆ Low ESR at high frequency range & Large permissibie ripple current.

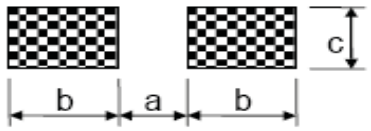
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	2.5～100V DC	
Capacitance Range	4.7 to 560μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 20℃，120Hz)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

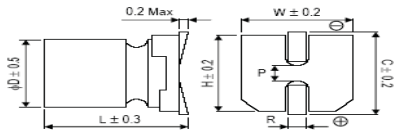
Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Recommended land pattern:(unit:mm)



φD×L	a	b	c
4×5.5	1.0	2.6	1.6
5×5.5	1.4	3.0	1.6
5×5.8	1.4	3.0	1.6
6.3×5.8	2.1	3.5	1.6
6.3×7.7	2.1	3.5	1.6

Diagram of Dimensions:(unit:mm)



φD×L	W	H	C	R	P
4×5.5	4.3	4.3	5.1	0.5 to 0.8	1.0
5×5.5	5.3	5.3	5.9	0.5 to 0.8	1.4
5×5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
6.3×5.8	6.5	6.5	7.2	0.5 to 0.8	2.2
6.3×7.7	6.5	6.5	7.2	0.5 to 0.8	2.2

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
2.5	82	5×5.8	300	0.08	30	2100
	100	6.3×5.8	300	0.08	22	2500
	150	6.3×5.8	300	0.08	22	2500
	180	5×5.8	300	0.08	25	2310
		6.3×5.8	300	0.08	22	2500
	220	5×5.8	300	0.08	25	2310
		6.3×5.8	300	0.08	22	2800
	270	5×5.8	300	0.08	22	2610
		6.3×5.8	300	0.08	22	2800
	330	6.3×5.8	300	0.08	15	3100
	390	6.3×5.8	300	0.08	25	2610
		6.3×5.8	300	0.08	15	3100
	470	6.3×5.8	300	0.08	20	2800
		6.3×7.7	300	0.08	15	3600
	560	6.3×5.8	300	0.08	15	3100
		6.3×7.7	300	0.08	15	3600
4	47	5×5.8	300	0.08	25	2310
	56	5×5.8	300	0.08	25	2310
	68	5×5.8	300	0.08	25	2310
	100	5×5.8	300	0.08	25	2310
		6.3×5.8	300	0.08	22	2500
	120	5×5.8	300	0.08	22	2500
		6.3×5.8	300	0.08	22	2500
	150	5×5.8	300	0.08	22	2500
		6.3×5.8	300	0.08	22	2500
		6.3×7.7	300	0.08	20	3100
	180	6.3×5.8	300	0.08	22	2500
	220	5×5.8	300	0.08	22	2610
		6.3×5.8	300	0.08	22	2800
		6.3×7.7	300	0.08	20	3100
	270	6.3×5.8	300	0.08	22	2800
		6.3×7.7	300	0.08	20	3100
	330	6.3×5.8	300	0.08	20	2800
		6.3×5.8	300	0.08	15	3100
		6.3×7.7	300	0.08	15	3600
	390	6.3×5.8	300	0.08	20	2800
		6.3×7.7	300	0.08	15	3600
	470	6.3×7.7	300	0.08	15	3600
6.3	47	5×5.5	300	0.08	30	2000
	56	5×5.5	300	0.08	30	2000
	68	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	22	2690
	82	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	22	2690
	100	5×5.5	300	0.08	30	2000
		5×5.8	300	0.08	25	2310
		6.3×5.8	300	0.08	22	2800
	120	5×5.8	300	0.08	25	2310
		6.3×5.8	300	0.08	22	2800
	150	5×5.8	300	0.08	22	2610
		6.3×5.8	300	0.08	22	2800
		6.3×7.7	300	0.08	20	3100
	180	5×5.8	300	0.08	22	2610
		6.3×5.8	300	0.08	22	2800
		6.3×7.7	300	0.08	20	3100

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
6.3	220	6.3×5.8	300	0.08	20	3000
		6.3×5.8	300	0.08	15	3100
		6.3×7.7	300	0.08	15	3600
	270	6.3×5.8	300	0.08	20	3000
		6.3×7.7	300	0.08	15	3600
	330	6.3×5.8	300	0.08	20	3100
		6.3×7.7	300	0.08	15	3600
		6.3×7.7	300	0.08	10	4200
	390	6.3×7.7	300	0.08	15	3600
10	4.7	4×5.5	300	0.08	120	980
	6.8	4×5.5	300	0.08	120	980
	10	4×5.5	300	0.08	80	1200
	15	4×5.5	300	0.08	80	1200
	22	4×5.5	300	0.08	80	1200
	33	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
	39	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
	47	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
		6.3×7.7	300	0.08	20	2800
	56	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
		6.3×7.7	300	0.08	20	2800
	68	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
		6.3×7.7	300	0.08	20	2800
	82	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
		6.3×7.7	300	0.08	20	2800
	100	5×5.5	300	0.08	30	2000
		6.3×5.8	300	0.08	30	2200
		6.3×7.7	300	0.08	20	2800
	120	6.3×5.8	300	0.08	25	2610
	150	6.3×5.8	300	0.08	25	2610
		6.3×7.7	300	0.08	20	3100
	180	6.3×5.8	300	0.08	25	2610
		6.3×7.7	300	0.08	20	3100
	220	6.3×5.8	300	0.08	25	2610
		6.3×7.7	300	0.08	20	3100
	270	6.3×7.7	300	0.08	20	3100
	330	6.3×7.7	300	0.08	20	3100
16	10	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	15	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	22	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	33	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	39	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
16	47	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	56	5×5.8	400	0.08	40	2000
		6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	30	2610
	68	6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	25	2690
	82	6.3×5.8	400	0.08	35	2200
		6.3×7.7	400	0.08	25	2690
	100	6.3×5.8	400	0.08	30	2490
		6.3×7.7	400	0.08	25	2690
	150	6.3×7.7	400	0.08	25	2690
	180	6.3×5.8	400	0.12	25	3200
20	10	5×5.8	600	0.08	40	2000
		6.3×5.8	600	0.08	40	2200
	15	6.3×5.8	600	0.08	35	2200
	22	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	27	6.3×5.8	600	0.08	35	2200
	33	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	39	6.3×7.7	600	0.08	30	2670
	47	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	56	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	120	6.3×5.8	600	0.12	25	3200
25	6.8	6.3×5.8	600	0.08	40	2000
	10	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	35	2670
	15	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	22	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	33	6.3×5.8	600	0.08	35	2200
		6.3×7.7	600	0.08	30	2670
	39	6.3×7.7	600	0.08	30	2670
	47	6.3×5.8	600	0.08	35	2200
35	18	6.3×5.8	600	0.12	64	900
	22	6.3×5.8	600	0.12	50	1300
	27	6.3×5.8	600	0.12	50	1530
	47	6.3×7.7	600	0.12	50	1600
	56	6.3×7.7	600	0.12	35	2100
50	8.2	6.3×5.8	600	0.12	80	800
	12	6.3×5.8	600	0.12	80	800
	15	6.3×5.8	600	0.12	80	800
63	5.6	6.3×5.8	600	0.12	100	700
	8.2	6.3×5.8	600	0.12	100	700
100	4.7	6.3×7.7	600	0.12	100	1060

Ripple Current(mA,rms)at 105℃,100KHz

Updated Series
Preliminary Data Sheet

CapXon

PD series

PD series SMD type & Large capacitance

Features

◆ SMD type & Large capacitance.

◆Uitra low ESR at high frequency range & Large permissibie ripple current.

◆Long life and high reliability(reliability:0.1%/1000Hrs).

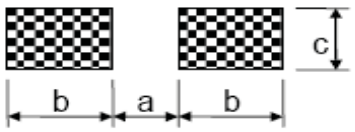
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	2.5～100V DC	
Capacitance Range	10 to 3300μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 20℃，120Hz)	Not to exceed the values shown in Standard Ratings	
ESR（at 100kHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

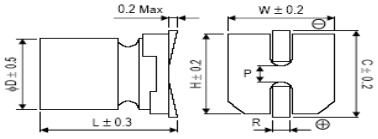
Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Recommended land pattern:(unit:mm)



φD×L	a	b	c
8×11.7	2.8	4.2	1.9
10×12.4	4.3	4.4	1.9

Diagram of Dimensions:(unit:mm)



φD×L	W	H	C	R	P
8×11.7	8.3	8.3	9.0	0.7 to 1.1	3.1
10×12.4	10.3	10.3	11.0	0.7 to 1.1	4.5

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
2.5	560	8×11.7	280	0.08	9	5200
	680	8×11.7	340	0.08	9	5200
	820	8×11.7	410	0.08	9	5400
	1000	8×11.7	500	0.08	9	5400
	1500	8×11.7	750	0.08	9	5400
		10×12.4	750	0.08	9	5600
	2500	10×12.4	1250	0.08	9	5600
	2700	10×12.4	1350	0.10	9	5600
	3300	10×12.4	1650	0.10	9	5600
4	560	8×11.7	448	0.08	9	5200
	680	8×11.7	544	0.08	9	5200
	820	8×11.7	656	0.08	9	5200
	1000	8×11.7	800	0.10	9	5200
	1200	8×11.7	960	0.10	9	5200
		10×12.4	960	0.10	9	5600
	1500	8×11.7	1200	0.10	9	5200
		10×12.4	1200	0.10	9	5600
	1800	10×12.4	1440	0.10	9	5600
	2200	10×12.4	1760	0.10	9	5600
	2500	10×12.4	2000	0.10	9	5600
	2700	10×12.4	2160	0.10	9	5600
6.3	180	8×11.7	227	0.08	9	5200
	270	8×11.7	340	0.08	9	5200
	330	8×11.7	416	0.08	9	5200
	390	8×11.7	491	0.08	9	5200
	470	8×11.7	592	0.08	9	5200
	560	8×11.7	706	0.08	9	5200
	680	10×12.4	856	0.08	9	5500
	820	8×11.7	1033	0.10	9	5200
		10×12.4	1033	0.10	9	5500
	1000	8×11.7	1260	0.10	9	5200
		10×12.4	1260	0.10	9	5500
	1500	10×12.4	1890	0.10	9	5500
	2000	10×12.4	2520	0.10	9	5500
	2200	10×12.4	2772	0.10	9	5500
10	180	8×11.7	360	0.08	9	5200
	220	8×11.7	440	0.08	9	5200
	270	8×11.7	540	0.08	9	5200
	330	8×11.7	660	0.08	9	5200
	390	8×11.7	780	0.08	9	5200
	470	8×11.7	940	0.08	9	5200
		10×12.4	940	0.08	9	5500
	560	8×11.7	1120	0.08	9	5200
		10×12.4	1120	0.08	9	5500
	680	8×11.7	1360	0.10	9	5200
		10×12.4	1360	0.10	9	5500
	820	10×12.4	1640	0.10	9	5500
	1000	10×12.4	2000	0.10	9	5500
	1200	10×12.4	2400	0.10	9	5500
	1500	10×12.4	3000	0.10	9	5500
16	180	8×11.7	576	0.08	15	4700
	220	8×11.7	704	0.08	15	4700
		10×12.4	704	0.08	15	5100
	270	8×11.7	864	0.08	15	4700
		10×12.4	864	0.08	15	5100
	330	8×11.7	1056	0.08	15	4700
		10×12.4	1056	0.08	15	5100
	390	8×11.7	1248	0.10	15	4700
	470	10×12.4	1504	0.10	15	5100
	560	8×11.7	1792	0.12	14	4950
	680	10×12.4	2176	0.10	15	5100
	820	10×12.4	2624	0.10	15	5100
	1000	10×12.4	3200	0.12	14	5400

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
20	39	8×11.7	156	0.08	20	4210
	68	8×11.7	272	0.08	20	4210
	82	8×11.7	328	0.08	20	4210
	100	8×11.7	400	0.08	20	4210
		10×12.4	400	0.08	20	4800
	150	10×12.4	600	0.10	20	4800
	180	10×12.4	720	0.10	20	4800
	220	8×11.7	880	0.10	22	4000
		10×12.4	880	0.10	20	4800
	270	8×11.7	1080	0.10	22	4000
		10×12.4	1080	0.10	20	4800
	330	10×12.4	1320	0.10	20	4800
	390	8×11.7	1560	0.12	14	4950
	470	10×12.4	1880	0.12	20	4800
	680	10×12.4	2720	0.12	16	5000
25	33	8×11.7	165	0.08	25	3800
	47	8×11.7	235	0.08	20	4210
	56	10×12.4	280	0.08	28	3800
	82	8×11.7	410	0.08	20	4210
	100	8×11.7	500	0.10	20	4210
		10×12.4	500	0.10	20	4800
	180	8×11.7	900	0.10	25	3800
		10×12.4	900	0.10	20	4800
	220	8×11.7	1100	0.10	25	3800
		10×12.4	1100	0.10	20	4800
	270	10×12.4	1350	0.10	20	4800
	330	8×11.7	1650	0.12	20	4210
		10×12.4	1650	0.12	22	4200
	390	10×12.4	1950	0.12	22	4200
	470	10×12.4	2350	0.12	25	3800
35	39	8×11.7	273	0.12	32	2700
	68	8×11.7	476	0.12	28	3300
	82	8×11.7	574	0.12	28	3300
	100	10×12.4	700	0.12	25	3800
	120	8×11.7	840	0.12	25	3800
	150	8×11.7	840	0.12	25	3800
		10×12.4	1050	0.12	25	3800
	180	10×12.4	1260	0.12	22	4100
	220	10×12.4	1540	0.12	22	4100
	270	10×12.4	1890	0.12	20	4400
	330	10×12.4	2310	0.12	20	4400
50	10	8×11.7	100	0.12	40	1800
	22	8×11.7	220	0.12	40	1800
	33	8×11.7	330	0.12	35	2000
	39	8×11.7	390	0.12	30	2300
	47	8×11.7	470	0.12	30	2300
	56	8×11.7	560	0.12	30	2500
		10×12.4	560	0.12	25	3000
	68	10×12.4	680	0.12	25	3000
	100	10×12.4	1000	0.12	25	3000
63	22	8×11.7	277	0.12	35	1800
	27	8×11.7	340	0.12	35	2200
	33	8×11.7	416	0.12	35	2200
		10×12.4	416	0.12	30	2500
	39	8×11.7	491	0.12	35	2200
	47	10×12.4	592	0.12	30	2500
	56	10×12.4	706	0.12	30	2500
	68	10×12.4	856.8	0.12	30	2500
80	12	8×11.7	192	0.12	40	1800
	22	10×12.4	352	0.12	38	2300
	47	10×12.4	752	0.12	40	1800
100	10	8×11.7	200	0.12	45	1700
	18	10×12.4	360	0.12	40	2100
	22	10×12.4	440	0.12	40	2100

Ripple Current(mA,rms)at 105℃,100KHz

CapXon

PV series

PV series SMD type & Low height

Features

◆ SMD type,Low height & Large capacitance.

◆Low ESR at high frequency range & Large permissibie ripple current.

◆Long life and high reliability(reliability:0.1%/1000Hrs).

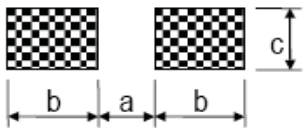
Specification

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	2.5～100V DC	
Capacitance Range	6.8to 2500μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 20℃，120Hz)	Not to exceed the values shown in Standard Ratings	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

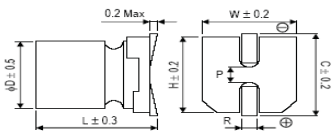
Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Recommended land pattern:(unit:mm)



φD×L	a	b	c
8×7.7	2.8	4.2	1.9
8×8.7	2.8	4.2	1.9
8×10.5	2.8	4.2	1.9
10×8.7	4.3	4.4	1.9
10×10.5	4.3	4.4	1.9

Diagram of Dimensions:(unit:mm



φD×L	W	H	C	R	P
8×7.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×8.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×10.5	8.3	8.3	9.0	0.7 to 1.1	3.1
10×8.7	10.3	10.3	11.0	0.7 to 1.1	4.5
10×10.5	10.3	10.3	11.0	0.7 to 1.1	4.5

Dimensions & Characteristics

φDxL(mm)

W.V. （V）	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
2.5	560	8×7.7	280	0.08	20	3500
	680	8×7.7	340	0.08	20	3500
	820	8×7.7	410	0.08	20	3500
	1000	8×8.7	500	0.08	11	4800
	1200	10×8.7	600	0.08	20	3700
	1500	10×8.7	750	0.10	20	3700
	2200	10×10.5	1100	0.10	11	5500
	2500	10×10.5	1250	0.10	11	5500
4	330	8×7.7	264	0.08	20	3500
	390	8×8.7	312	0.08	15	4200
	470	8×8.7	376	0.08	15	4200
	560	8×7.7	448	0.08	20	3500
		8×8.7	448	0.08	11	4800
	680	8×7.7	544	0.08	20	3500
		8×8.7	544	0.08	11	4800
	820	8×8.7	656	0.08	11	4800
		10×10.5	656	0.08	11	5100
	1000	8×10.5	800	0.10	11	5100
	1200	10×10.5	960	0.10	11	5500
	1500	10×10.5	1200	0.10	11	5500
	2000	10×10.5	1600	0.10	11	5500
6.3	220	8×7.7	277.2	0.08	20	3500
	270	8×7.7	340.2	0.08	20	3500
	330	8×7.7	415.8	0.08	20	3500
	390	8×7.7	491	0.08	20	3500
	470	8×7.7	592.2	0.08	20	3500
		8×8.7	592	0.08	11	4800
	680	8×8.7	856	0.10	11	4800
	820	10×8.7	1033.2	0.10	20	3700
	1000	10×8.7	1260	0.10	20	3700
	1200	10×10.5	1512	0.10	11	5500
	1500	10×10.5	1890	0.10	11	5500
10	330	8×7.7	660	0.08	20	3500
	390	8×7.7	780	0.08	20	3500
	470	8×8.7	940	0.08	11	4800
	560	10×8.7	1120	0.08	20	3700
		10×10.5	1120	0.08	11	4800
	680	10×8.7	1360	0.10	20	3700
		10×10.5	1360	0.10	11	4800
	820	10×10.5	1640	0.10	11	5100
16	68	8×7.7	217.6	0.08	25	3300
	150	8×7.7	480	0.08	25	3300
	180	8×7.7	576	0.08	23	3500
		8×8.7	576	0.08	16	4800
	220	8×7.7	704	0.08	23	3500
		8×8.7	704	0.08	16	4800
	270	8×8.7	864	0.10	16	4800
		10×10.5	864	0.10	16	5100
	330	10×8.7	1056	0.10	23	3700
		10×10.5	1056	0.10	16	5100
	390	10×8.7	1248	0.10	23	3700
		10×10.5	1248	0.10	16	5100
	470	10×10.5	1504	0.10	16	5100

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
20	27	8×8.7	400	0.10	25	3300
	68	8×8.7	272	0.10	22	3500
	82	8×8.7	328	0.10	22	3500
	100	8×8.7	400	0.10	22	3500
	120	10×8.7	480	0.10	30	2800
	150	8×8.7	600	0.10	22	3500
		10×8.7	600	0.10	27	3100
	180	10×8.7	720	0.10	27	3100
		10×10.5	720	0.10	22	3700
	220	10×8.7	880	0.10	27	3100
		10×10.5	880	0.10	22	3700
	270	10×10.5	1080	0.10	22	3700
	330	10×10.5	1320	0.10	22	3700
25	47	10×8.7	400	0.10	30	2800
	68	8×8.7	340	0.10	22	3500
	82	8×8.7	410	0.10	22	3500
		10×8.7	410	0.10	27	3100
	100	8×8.7	500	0.10	22	3500
		10×8.7	500	0.10	27	3100
	120	8×8.7	600	0.10	22	3500
	150	8×8.7	750	0.10	25	3300
	180	10×10.5	900	0.10	22	3700
	270	10×10.5	1350	0.10	25	3500
35	56	8×7.7	392	0.12	40	2200
	68	8×7.7	476	0.12	35	2400
	82	8×8.7	574	0.12	35	2600
	100	8×8.7	700	0.12	30	3000
		10×10.5	700	0.12	30	3200
	120	10×10.5	840	0.12	30	3200
	150	10×10.5	1050	0.12	30	3200
50	10	8×8.7	100	0.12	45	1500
	33	8×8.7	330	0.12	40	1900
	47	8×10.5	470	0.12	35	2200
		10×10.5	470	0.12	35	2500
	68	10×10.5	680	0.12	35	2600
63	10	8×8.7	126	0.12	45	1500
	22	8×8.7	277	0.12	40	1700
	27	8×8.7	340	0.12	40	1900
	33	8×8.7	416	0.12	40	1900
		10×10.5	416	0.12	35	2200
	47	10×10.5	592	0.12	35	2200
80	10	8×8.7	160	0.12	45	1600
	15	10×10.5	240	0.12	40	1900
100	6.8	8×8.7	136	0.12	48	1500
	12	10×10.5	240	0.12	45	1900
	15	8×8.7	300	0.12	48	1500

CapXon

PR series

PR series SMD type & Long Life to 5,000Hours

Features

◆ SMD type .

◆Long Life to 5,000Hours.

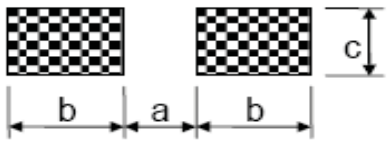
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	6.3～50V DC	
Capacitance Range	10 to 1500μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
ESR（at 100KHz，20℃）	Not to exceed the values shown in Standard Ratings	
ESR（100K～300KHz）	Not to exceed the values shown in Standard Ratings	
Endurance 105℃，5000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiie

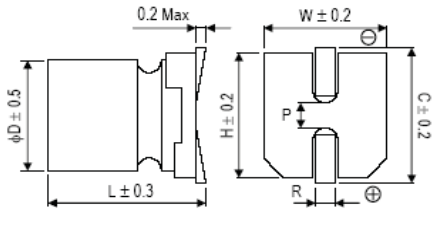
Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Recommended land pattern:(unit:mm)



φD×L	a	b	c
6.3×5.8	2.1	3.5	1.6
6.3×7.7	2.1	3.5	1.6
8×7.7	2.8	4.2	1.9
8×8.7	2.8	4.2	1.9
8×11.7	2.8	4.2	1.9
10×8.7	4.3	4.4	1.9
10×10.5	4.3	4.4	1.9
10×12.4	4.3	4.4	1.9

Diagram of Dimensions:(unit:mm)



φD×L	W	H	C	R	P
6.3×5.8	6.5	6.5	7.2	0.5 to 0.8	2.2
6.3×7.7	6.5	6.5	7.2	0.5 to 0.8	2.2
8×7.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×8.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×11.7	8.3	8.3	9.0	0.7 to 1.1	3.1
10×8.7	10.3	10.3	11.0	0.7 to 1.1	4.5
10×10.5	10.3	10.3	11.0	0.7 to 1.1	4.5
10×12.4	10.3	10.3	11.0	0.7 to 1.1	4.5

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
6.3	100	6.3×5.8	300	0.08	32	2300
	220	6.3×5.8	300	0.08	32	2300
		6.3×5.8	300	0.08	20	2800
	270	6.3×7.7	340.2	0.08	22	3000
	470	8×7.7	592.2	0.08	22	3700
	820	8×11.7	1033.2	0.08	12	5000
	1000	10×10.5	1260	0.08	15	4700
	1500	10×12.4	1890	0.08	12	5300
10	56	6.3×5.8	300	0.08	32	2300
	120	6.3×7.7	300	0.08	22	2900
	150	6.3×7.7	300	0.08	22	2900
	180	6.3×7.7	360	0.08	22	2900
	270	8×7.7	540	0.08	22	3200
	330	10×8.7	660	0.08	22	3700
	470	8×11.7	940	0.08	12	4500
	560	10×10.5	1120	0.08	15	4200
	820	10×12.4	1640	0.08	12	4800
	1000	10×12.4	2000	0.08	12	4800
16	47	6.3×5.8	400	0.10	48	1700
	82	6.3×7.7	400	0.10	28	2400
	100	6.3×7.7	400	0.10	28	2400
	120	6.3×7.7	400	0.12	28	2400
		8×7.7	400	0.12	28	3000
	150	8×8.7	480	0.12	26	3100
		10×8.7	480	0.12	33	3100
	180	8×11.7	576	0.12	18	4200
		10×8.7	576	0.12	33	3100
	220	8×11.7	704	0.12	18	4200
	270	10×10.5	864	0.12	23	3800
	330	10×10.5	1056	0.12	23	3800
	390	10×12.4	1248	0.12	18	4500
	560	10×12.4	1792	0.12	18	4500
	680	10×12.4	2176	0.12	18	4500
20	22	6.3×5.8	600	0.10	48	1700
	33	6.3×5.8	600	0.10	48	1700
	47	6.3×7.7	600	0.10	33	2300
	56	6.3×7.7	600	0.10	33	2300
	68	6.3×7.7	600	0.10	33	2300
	82	8×7.7	600	0.12	33	2900
	120	8×7.7	600	0.12	33	2900
	150	8×11.7	600	0.12	23	4000
	180	8×11.7	720	0.12	23	4000
		10×10.5	720	0.12	25	3650
	220	10×10.5	880	0.12	25	3650
	330	10×12.4	1320	0.12	23	4200

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Maximum Permissible Ripple Current(mA,r.m.s)
25	10	6.3×5.8	600	0.10	58	1600
	22	6.3×5.8	600	0.10	58	1600
	39	6.3×7.7	600	0.10	33	2300
	47	6.3×7.7	600	0.10	33	2300
		8×11.7	600	0.12	23	3700
	56	8×7.7	600	0.12	33	2900
	68	8×7.7	600	0.12	33	2900
		8×11.7	600	0.12	23	4000
	82	8×8.7	600	0.12	27	3200
		8×11.7	600	0.12	23	4000
		10×8.7	600	0.12	33	2900
	100	6.3×7.7	600	0.12	40	2000
		8×8.7	600	0.12	27	3200
	120	8×11.7	600	0.12	23	4000
		10×10.5	600	0.12	25	3650
	150	10×12.4	750	0.12	23	4200
	180	10×12.4	900	0.12	23	4200
	220	8×11.7	1100	0.12	23	4000
		10×12.4	1100	0.12	23	4200
35	10	6.3×5.8	600	0.12	75	980
	18	6.3×7.7	600	0.12	60	1400
	22	8×11.7	600	0.12	35	2300
	27	6.3×7.7	600	0.12	60	1400
	33	8×11.7	600	0.12	35	2300
	39	8×8.7	600	0.12	40	1800
	56	8×11.7	600	0.12	35	2300
	68	10×10.5	600	0.12	32	2500
	100	10×10.5	700	0.12	32	2500
		10×12.4	700	0.12	30	3100
	150	10×10.5	700	0.12	32	2500
		10×12.4	700	0.12	30	3100
50	10	8×7.7	100	0.12	75	1400
	12	6.3×7.7	120	0.12	75	1400
	22	8×8.7	220	0.12	50	1800
		8×11.7	220	0.12	40	2400
		10×8.7	220	0.12	55	1800
	27	8×11.7	270	0.12	40	2400
	33	10×10.5	330	0.12	42	2200
		10×12.4	330	0.12	30	3000
	47	10×12.4	470	0.12	30	3000
	56	10×12.4	560	0.12	30	3000
	68	10×12.4	680	0.12	30	3000
	100	10×12.4	1000	0.12	26	3650

Ripple Current(mA,rms)at 105℃,100KHz

Updated Series
Preliminary Data Sheet

CapXon

PG series

PG series SMD type & 125℃ Guaranteed

Features

◆ SMD type .

◆125℃ Guaranteed

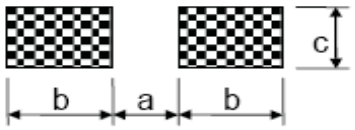
Specifications

Items	Performance Characteristics	
Operating Temperature Range	-55℃～+105℃	
Rated Voltage Range	6.3～50V DC	
Capacitance Range	10 to 1500μF	
Capacitance Tolerance	±20%（120Hz，+20℃）	
Leakage Current（+20℃，max）	Not to exceed the values shown in Standard Ratings （Rated voltage applied, after 2 minutes at 20℃）	
Dissipation Factor (tanδ，at 20℃，120Hz)	Not to exceed the values shown in Standard Ratings	
ESR（at 100kHz，20℃）	Not to exceed the values shown in Standard Ratings	
Endurance 125℃，2000h，at rated voltage	Capacitance Change	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃，RH90～95%，1000h	Capacitance Change	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Frequency Coefficient for Ripple Cuiient

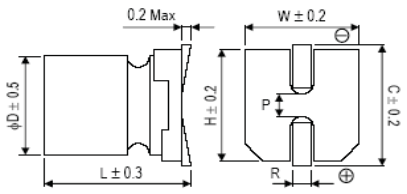
Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.3	0.7	1

Recommended land pattern:(unit:mm)



φD×L	a	b	c
6.3×5.8	2.1	3.5	1.6
6.3×7.7	2.1	3.5	1.6
8×7.7	2.8	4.2	1.9
8×8.7	2.8	4.2	1.9
8×11.7	2.8	4.2	1.9
10×8.7	4.3	4.4	1.9
10×10.5	4.3	4.4	1.9
10×12.4	4.3	4.4	1.9

Diagram of Dimensions:(unit:mm)



φD×L	W	H	C	R	P
6.3×5.8	6.5	6.5	7.2	0.5 to 0.8	2.2
6.3×7.7	6.5	6.5	7.2	0.5 to 0.8	2.2
8×7.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×8.7	8.3	8.3	9.0	0.7 to 1.1	3.1
8×11.7	8.3	8.3	9.0	0.7 to 1.1	3.1
10×8.7	10.3	10.3	11.0	0.7 to 1.1	4.5
10×10.5	10.3	10.3	11.0	0.7 to 1.1	4.5
10×12.4	10.3	10.3	11.0	0.7 to 1.1	4.5

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Rated Ripple Current	Allowable ripple current
						100KHz (mA,r.m.s)	
						105℃＜Tx≤125℃	Tx≤105℃
6.3	100	6.3×5.8	300	0.08	35	695	2200
	270	6.3×7.7	340.2	0.08	25	885	2800
	470	8×7.7	592.2	0.08	25	1100	3500
	820	8×11.7	1033.2	0.08	15	1490	4700
	1000	10×10.5	1260	0.08	18	1390	4400
	1500	10×12.4	1890	0.08	15	1610	5100
10	56	6.3×5.8	300	0.08	35	695	2200
	120	6.3×7.7	300	0.08	25	885	2800
	150	6.3×7.7	300	0.08	25	885	2800
	180	6.3×7.7	360	0.08	25	885	2800
	270	8×7.7	540	0.08	25	950	3000
	330	10×8.7	660	0.08	25	1100	3500
	470	8×11.7	940	0.08	15	1330	4200
	560	10×10.5	1120	0.08	18	1265	4000
	820	10×12.4	1640	0.08	15	1420	4500
16	47	6.3×5.8	400	0.10	50	505	1600
	82	6.3×7.7	400	0.10	30	695	2200
	100	6.3×7.7	400	0.10	30	695	2200
	120	8×7.7	400	0.12	30	885	2800
	150	8×8.7	480	0.12	28	950	3000
		10×8.7	480	0.12	35	930	3000
	180	8×11.7	576	0.12	20	1200	3800
		10×8.7	576	0.12	35	930	3000
	220	8×11.7	704	0.12	20	1200	3800
	270	10×10.5	864	0.12	25	1105	3500
	330	10×10.5	1056	0.12	25	1105	3500
	390	10×12.4	1248	0.12	20	1265	4000
	560	10×12.4	1792	0.12	20	1265	4000
20	22	6.3×5.8	600	0.10	50	505	1600
	33	6.3×5.8	600	0.10	50	505	1600
	47	6.3×7.7	600	0.10	35	695	2200
	56	6.3×7.7	600	0.10	35	695	2200
	68	6.3×7.7	600	0.10	35	695	2200
	82	8×7.7	600	0.12	35	885	2800
	120	8×7.7	600	0.12	35	885	2800
	150	8×11.7	600	0.12	25	1200	3800
	180	8×11.7	720	0.12	25	1200	3800
		10×10.5	720	0.12	27	1105	3500
	220	10×10.5	880	0.12	27	1105	3500
	330	10×12.4	1320	0.12	25	1265	4000
25	10	6.3×5.8	600	0.10	60	474	1500
	22	6.3×5.8	600	0.10	60	474	1500
	39	6.3×7.7	600	0.10	35	695	2200
	47	6.3×7.7	600	0.10	35	695	2200
	47	8×11.7	600	0.12	25	1100	3500
	56	8×7.7	600	0.12	35	885	2800
	68	8×7.7	600	0.12	35	885	2800
		8×11.7	600	0.12	25	1200	3800
	82	8×8.7	600	0.12	30	950	3000
		8×11.7	600	0.12	25	1200	3800
		10×8.7	600	0.12	35	885	2800
	100	8×11.7	600	0.12	25	1200	3800
	120	8×11.7	600	0.12	25	1200	3800
		10×10.5	600	0.12	27	1105	3500
	150	10×12.4	750	0.12	25	1265	4000
	180	10×12.4	900	0.12	25	1265	4000

Dimensions & Characteristics

φDxL(mm)

W.V. (V)	Capacitance (μF)	Size ΦDxL(mm)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100KHZ)	Rated Ripple Current	Allowable ripple current
						100KHz (mA,r.m.s)	
						105℃＜Tx≤125℃	Tx≤105℃
35	10	6.3×5.8	600	0.12	75	310	980
	18	6.3×7.7	600	0.12	60	450	1400
	22	8×11.7	600	0.12	35	730	2300
	27	6.3×7.7	600	0.12	60	450	1400
	33	8×11.7	600	0.12	35	730	2300
	39	8×8.7	600	0.12	40	570	1800
	56	8×11.7	600	0.12	35	730	2300
	68	10×10.5	600	0.12	32	800	2500
	100	10×10.5	700	0.12	32	800	2500
		10×12.4	700	0.12	30	980	3100
	150	8×11.7	1050	0.12	25	1650	4800
	180	10×10.5	1260	0.12	30	1390	4400
50	10	8×7.7	100	0.12	75	450	1400
	12	6.3×7.7	120	0.12	75	450	1400
	22	8×8.7	220	0.12	50	570	1800
		8×11.7	220	0.12	40	760	2400
		10×8.7	220	0.12	55	570	1800
	27	8×11.7	270	0.12	40	760	2400
	33	10×10.5	330	0.12	42	700	2200
		10×12.4	330	0.12	30	885	2800
	47	10×12.4	470	0.12	30	885	2800
	100	10×12.4	1000	0.12	30	885	2800
	180	10×12.4	1800	0.12	24	950	3000

Ripple Current(mA,rms)at 125℃,100KHz

EV Series

Features

- ◆ Chip type long life capacitance in large case sizes
- ◆ Chip type with Endurance of 1000 hours at +105℃
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic insertion machine using carrier tape
- ◆ RoHS Compliant
- ◆ AEC-Q200 qualified

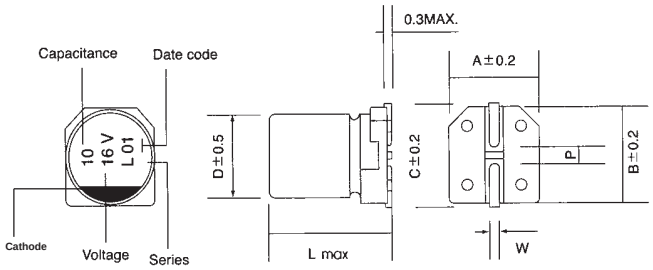
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	0.1 to 1500μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max φ4~6.3: 30 / 24 / 20 / 18 / 16 / 14 D.F.(%)max φ8~10: 35 / 28 / 24 / 18 / 16 / 14
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 8 / 4 / 4 / 3 / 3
Endurance	Test condition Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : Within ±25% of initial value for capacitance of 16V or less Within ±20% of initial value for capacitance of 25V or more Dissipation factor : Less than 200% of specified value Leakage current : Less than specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ :Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under. Leakage current: Less than specified value Capacitance change: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

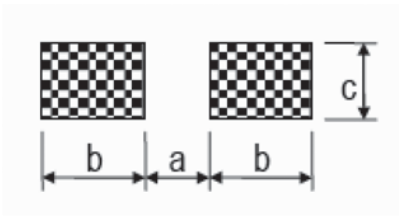
CAP(μF)＼Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP≦1500μF	0.8	1.0	1.10	1.15	1.20

Diagram of Dimensions:(unit:mm)



φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1.0	2.6	1.6
5 x all	1.4	3.0	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6.0	6.5	3.5

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x5.5	1.0
0.22											4x5.5	2.6
0.33											4x5.5	3.2
0.47											4x5.5	3.8
1.0											4x5.5	6.3
2.2											4x5.5	11
3.3											4x5.5	14
4.7							4x5.5	16	4x5.5	16	5x5.5	22
10					4x5.5	18	4x5.5	26	4x5.5	27	6.3x5.5	33
22	4x5.5	22	4x5.5	27	4x5.5	30	5x5.5	38	6.3x5.5	42	6.3x5.5	51
33	4x5.5	30	4x5.5	25	5x5.5	40	5x5.5	48	6.3x5.5	50	6.3x7.7	60
			5x5.5	40					6.3x7.7	58	8x6.5	60
47	4x5.5	36	5x5.5	46	5x5.5	51	6.3x5.5	63	6.3x7.7	66	6.3x7.7	66
											8x6.5	66
100	5x5.5	60	6.3x5.5	60	6.3x5.5	60	6.3x7.7	91	6.3x7.7	84	8x10.5	140
							8x6.5	91	8x6.5	84		
150	6.3x5.5	86	6.3x5.5	86	6.3x7.7	95	8x10.5	140	8x10.5	155	10x10.5	180
					8x6.5	95						
220	6.3x7.7	102	6.3x7.7	105	6.3x7.7	105	8x10.5	155	10x10.5	190	10x10.5	220
	8x6.5	102	8x6.5	105								
330	6.3x7.7	105	8x10.5	195	8x10.5	195	8x10.5	175	10x10.5	300		
	8x6.5	105					10x10.5	198				
470	8x10.5	210	8x10.5	210	8x10.5	210	10x10.5	300				
1000	10x10.5	230	10x10.5	310								
1500	10x10.5	310										

Ripple Current (mA, rms) at 105℃ 120Hz

CapXon

LV series

LV Series

Feature

- ◆ 85℃ standard, case diameter φ4~φ10mm
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ RoHS Compliant

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +85℃
Rated Voltage Range	4~100VDC / 160~450VDC
Capacitance Range	0.1 to 6800μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) whichever is greater (2 minutes) / I≦0.04 CV+100μA (1 minute)

Dissipation Factor (tanδ，at 20℃，120Hz)

Rated voltage(VDC)		4	6.3	10	16	25	35	50	63	80	100	160～250	＞250
D.F.(%)max	φ4~6.3	42	30	22	18	16	14	14	12	10	10	-	-
	φ8~10	45	34	26	20	16	14	14	12	10	10	15	20
	≧φ12.5	45	40	36	24	18	15	14	12	10	10	15	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Rated voltage(VDC)	4	6.3	10	16	25	35	50	63	80	100	160～250	＞250
Z-25℃ / Z+20℃	7	4	3	2	2	2	2	3	3	3	3	6
Z-40℃ / Z+20℃	15	8	8	4	4	3	3	4	4	4	6	10

Endurance

Test conditions
Duration time :2000 Hrs
Ambient temperature :+85℃
Applied voltage :Rated DC working voltage

After test requirement at +20℃:
Capacitance change :Within ±25% of the initial value
Dissipation factor :Not more than 200% of specified value
Leakage current :Not more than the specified value

Shelf Life

Test conditions
Duration time :1000 Hrs
Ambient temperature :+85℃
Applied voltage :None

After test requirement at +20℃ : Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Resistance to soldering heat

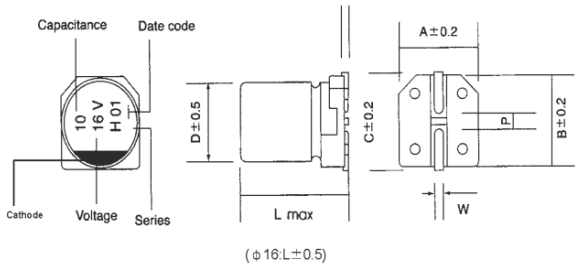
The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under.

Leakage	Less than specified value
Capacitance	Within ±10% of initial value
tanδ	Less than specified value

Multiplier for Ripple Current vs.

CAP(μF) \ Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP	0.8	1.0	1.10	1.15	1.20

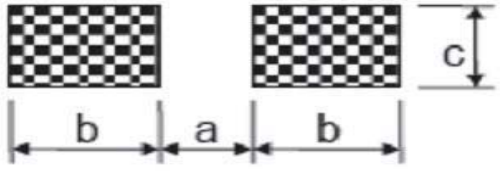
Diagram of



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	6.1	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

LV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)
4	47	4×5.5	28
4	100	5×5.5	34
4	150	6.3×6.1	50
4	220	6.3×5.5	61
4	330	6.3×7.7	135
4	330	8×6.5	145
4	470	8×6.5	180
4	470	8×10.5	220
4	560	8×10.5	242
4	680	8×10.5	285
4	1000	10×10.5	370
4	1200	10×10.5	410
4	1500	10×10.5	470
6.3	22	4×5.5	29
6.3	33	4×5.5	33
6.3	33	5×5.5	37
6.3	47	4×5.5	40
6.3	47	5×5.5	46
6.3	100	5×5.5	70
6.3	100	6.3×6.1	85
6.3	150	6.3×6.1	100
6.3	220	6.3×6.1	130
6.3	220	6.3×7.7	141
6.3	220	8×6.5	150
6.3	330	6.3×7.7	197
6.3	330	8×6.5	210
6.3	470	8×10.5	380
6.3	560	8×10.5	410
6.3	680	8×10.5	460
6.3	1000	8×10.5	480
6.3	1000	10×10.5	500
6.3	1200	10×10.5	510
6.3	1500	10×10.5	530
6.3	3300	12.5×14	750
6.3	6800	16×17	1330
10	10	4×5.5	21
10	22	4×5.5	33
10	22	5×5.5	37
10	33	4×5.5	41
10	33	5×5.5	43
10	47	5×5.5	52
10	100	6.3×5.5	76
10	150	6.3×6.1	88
10	220	6.3×7.7	170
10	220	8×6.5	190
10	330	8×10.5	330
10	470	8×10.5	420
10	560	10×10.5	450
10	680	10×10.5	480
10	1000	10×10.5	510
10	2200	12.5×14	730
10	4700	16×17	1200
16	10	4×5.5	23
16	22	4×5.5	37
16	33	5×5.5	45
16	47	5×5.5	50
16	47	6.3×5.5	60
16	100	6.3×5.5	100
16	100	6.3×6.1	108
16	150	6.3×7.7	135

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)
16	220	6.3×7.7	185
16	220	8×10.5	290
16	330	8×10.5	330
16	470	8×10.5	430
16	470	10×10.5	480
16	560	10×10.5	500
16	680	10×10.5	550
16	1000	12.5×14	600
16	1200	12.5×14	660
16	1500	12.5×14	710
16	3300	16×17	1200
25	4.7	4×5.5	18
25	10	4×5.5	27
25	22	5×5.5	40
25	22	6.3×5.5	46
25	33	5×5.5	46
25	33	6.3×5.5	54
25	47	6.3×5.5	60
25	47	6.3×6.1	68
25	100	6.3×7.7	150
25	100	8×6.5	160
25	150	8×10.5	200
25	220	8×10.5	300
25	330	8×10.5	390
25	330	10×10.5	450
25	470	10×10.5	460
25	560	12.5×14	520
25	680	12.5×14	580
25	1000	12.5×14	660
25	2200	16×17	1150
35	4.7	4×5.5	18
35	10	4×5.5	29
35	22	5×5.5	45
35	22	6.3×5.5	48
35	33	6.3×5.5	58
35	47	6.3×5.5	65
35	47	6.3×6.1	70
35	47	8×6.5	115
35	100	6.3×7.7	250
35	100	8×10.5	280
35	150	8×10.5	300
35	220	8×10.5	350
35	220	10×10.5	400
35	330	10×10.5	460
35	470	12.5×14	590
35	560	12.5×14	600
35	680	12.5×14	610
35	1500	16×17	1060
50	0.1	4×5.5	1
50	0.22	4×5.5	2
50	0.33	4×5.5	2.8
50	0.47	4×5.5	4
50	1	4×5.5	8.4
50	2.2	4×5.5	14
50	3.3	4×5.5	17
50	4.7	4×5.5	22
50	10	5×5.5	30
50	10	6.3×5.5	35
50	22	6.3×6.1	60
50	22	6.3×7.7	75

CapXon

LV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)
50	22	8×6.5	80
50	33	6.3×7.7	188
50	33	8×6.5	200
50	47	6.3×7.7	225
50	47	8×6.5	240
50	100	8×10.5	300
50	150	10×10.5	320
50	220	10×10.5	450
50	330	12.5×14	520
50	470	16×17	925
50	1000	16×17	940
63	0.1	4×5.5	1
63	0.22	4×5.5	2
63	0.33	4×5.5	3
63	0.47	4×5.5	4
63	1	4×5.5	8
63	2.2	4×5.5	14
63	3.3	5×5.5	18
63	4.7	5×5.5	23
63	4.7	6.3×5.5	27
63	10	6.3×5.5	35
63	22	6.3×7.7	75
63	22	8×6.5	75
63	33	8×10.5	160
63	47	8×10.5	170
63	100	10×10.5	270
63	100	12.5×14	340
63	150	12.5×14	380
63	220	12.5×14	460
63	330	16×17	560
63	470	16×17	700
80	1	4×5.5	8
80	2.2	5×5.5	16
80	3.3	6.3×5.5	25
80	4.7	6.3×5.5	30
80	10	6.3×7.7	40
80	22	6.3×7.7	70
80	33	8×10.5	160
80	47	10×10.5	195
80	100	12.5×14	380
80	150	12.5×14	450
80	220	16×17	550
100	1	4×5.5	8
100	2.2	6.3×5.5	18
100	2.2	6.3×6.1	20
100	3.3	6.3×5.5	25
100	3.3	6.3×6.1	28
100	4.7	6.3×7.7	38
100	4.7	8×6.5	38
100	10	6.3×7.7	50
100	22	8×10.5	120
100	33	10×10.5	190
100	47	12.5×14	330
100	100	12.5×14	380
100	150	16×17	560
160	10	8×10.5	70
160	12	8×10.5	80
160	18	10×10.5	100
160	22	10×10.5	150
160	27	12.5×14	235

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)
160	33	12.5×14	250
160	39	12.5×14	270
160	47	16×17	400
160	68	16×17	500
200	10	10×10.5	100
200	10	12.5×14	130
200	22	12.5×14	235
200	27	12.5×14	250
200	33	12.5×14	270
200	39	16×17	370
200	47	16×17	420
200	68	16×17	520
250	4.7	8×10.5	70
250	6.8	10×10.5	95
250	10	10×10.5	115
250	15	12.5×14	180
250	22	16×17	280
250	27	16×17	305
250	33	16×17	340
250	39	16×17	370
250	47	16×17	430
400	3.3	10×10.5	50
400	4.7	10×10.5	90
400	4.7	12.5×14	115
400	6.8	12.5×14	130
400	8.2	12.5×14	140
400	10	12.5×14	145
400	10	16×17	160
400	12	16×17	175
400	15	16×17	170
400	18	16×17	195
400	22	16×17	235
450	4.7	12.5×14	115
450	6.8	12.5×14	130
450	8.2	12.5×14	140
450	10	12.5×14	145
450	10	16×17	160
450	12	16×17	175
450	15	16×17	170
450	18	16×17	195
450	22	16×17	235

CapXon

HV series

HV Series

Features

- Long life of 2000 hrs at 105℃
- Reflow soldering is available
- Available for high density mounting
- RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-55~ +105℃(6.3 to 100Vdc)	-40~ +105℃(160 to 450Vdc)
Rated Voltage Range	6.3~100 VDC	160~450 VDC
Capacitance Range	0.1 to 6800μF	
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) whichever is greater (2 minutes)	I≦0.04 CV+100μA (1 minute)

Dissipation Factor (tanδ, at 20℃, 120Hz)

Rated voltage(VDC)		6.3	10	16	25	35	50	63	80	100	160～250	＞250
D.F.(%)max	φ4~6.3	30	24	20	16	14	14	12	10	10	-	-
	φ8~10	35	26	24	18	14	14	12	10	10	15	20
	≧φ12.5	37	34	24	18	14	14	12	10	10	15	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Rated voltage(VDC)	6.3	10	16	25	35	50	63	80	100	160～250	＞250
Z-25℃ / Z+20℃	6	4	4	3	2	2	2	3	3	3	6
Z-40℃ / Z+20℃	12	10	8	6	4	4	4	4	4	6	10

Endurance

Test conditions
Duration time :2000 Hrs
Ambient temperature :+105℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃:
Capacitance change :Within ±30% of the initial value
Dissipation factor :Not more than 300% of specified value
Leakage current :Not more than the specified value

Shelf Life

Test conditions
Duration time :1000 Hrs
Ambient temperature :+105℃
Applied voltage :None
After test requirement at +20℃ : Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Resistance to soldering heat

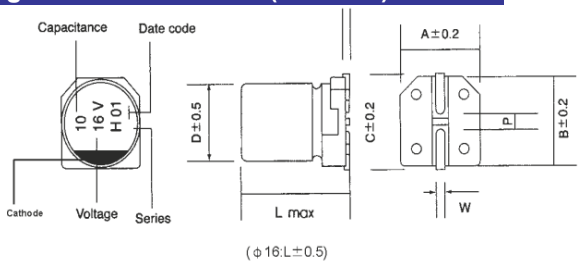
The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under.

Leakage	Less than specified value
Capacitance	Within ±10% of initial value
tanδ	Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF) \ Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP	0.8	1.0	1.10	1.15	1.20

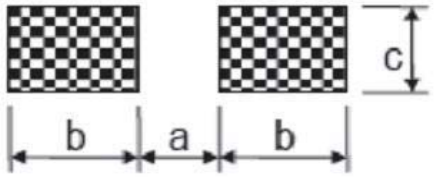
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

HV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
6.3	22	4×5.5	23
6.3	33	4×5.5	28
6.3	47	4×5.5	37
6.3	47	5×5.5	40
6.3	100	5×5.5	46
6.3	100	6.3×5.5	57
6.3	150	6.3×5.5	70
6.3	150	8×6.5	90
6.3	220	6.3×7.7	90
6.3	220	8×6.5	130
6.3	330	6.3×7.7	140
6.3	330	8×10.5	170
6.3	470	8×10.5	210
6.3	560	8×10.5	310
6.3	680	8×10.5	330
6.3	680	10×10.5	370
6.3	1000	8×10.5	420
6.3	1000	10×10.5	480
6.3	1200	10×10.5	500
6.3	1500	10×10.5	520
6.3	1800	12.5×14	600
6.3	2200	12.5×14	650
6.3	3300	12.5×14	700
6.3	6800	16×17	930
10	22	4×5.5	25
10	33	4×5.5	34
10	47	5×5.5	42
10	100	6.3×5.5	55
10	100	8×6.5	60
10	150	6.3×5.5	90
10	150	8×6.5	110
10	220	6.3×7.7	140
10	220	8×6.5	160
10	330	8×10.5	195
10	470	8×10.5	350
10	470	10×10.5	420
10	560	10×10.5	450
10	680	10×10.5	480
10	1000	10×10.5	530
10	1200	12.5×14	570
10	1500	12.5×14	750
10	4700	16×17	880
16	10	4×5.5	20
16	22	4×5.5	31
16	22	5×5.5	35
16	33	5×5.5	36
16	33	6.3×5.5	40
16	47	5×5.5	45
16	47	6.3×5.5	56
16	100	6.3×7.7	58
16	100	8×6.5	62
16	150	6.3×7.7	125
16	150	8×6.5	140
16	220	6.3×7.7	170
16	220	8×10.5	185
16	330	8×10.5	250
16	470	8×10.5	370
16	470	10×10.5	420
16	560	10×10.5	480
16	680	10×10.5	540

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
16	1000	12.5×14	580
16	1200	12.5×14	590
16	1500	12.5×14	620
16	3300	16×17	850
25	4.7	4×5.5	12
25	10	4×5.5	22
25	22	5×5.5	38
25	33	6.3×5.5	48
25	47	6.3×7.7	56
25	47	8×6.5	60
25	100	6.3×7.7	110
25	100	8×10.5	160
25	150	8×10.5	175
25	220	8×10.5	180
25	220	10×10.5	190
25	330	8×10.5	290
25	470	10×10.5	440
25	560	12.5×14	490
25	680	12.5×14	510
25	1000	12.5×14	600
25	2200	16×17	805
35	4.7	4×5.5	14
35	10	4×5.5	24
35	22	5×5.5	40
35	22	6.3×5.5	46
35	33	6.3×7.7	47
35	33	8×6.5	50
35	47	6.3×7.7	60
35	47	8×6.5	65
35	100	6.3×7.7	130
35	100	8×10.5	180
35	150	8×10.5	190
35	220	8×10.5	250
35	220	10×10.5	280
35	330	10×10.5	360
35	470	12.5×14	460
35	560	12.5×14	500
35	1500	16×17	740
50	0.1	4×5.5	1
50	0.22	4×5.5	2
50	0.33	4×5.5	3
50	0.47	4×5.5	4
50	1	4×5.5	8
50	2.2	4×5.5	11
50	3.3	4×5.5	13
50	4.7	4×5.5	18
50	10	6.3×5.5	28
50	22	6.3×7.7	50
50	22	8×6.5	55
50	33	6.3×7.7	95
50	33	8×10.5	135
50	47	6.3×7.7	115
50	47	8×10.5	155
50	100	10×10.5	315
50	150	10×10.5	330
50	220	10×10.5	350
50	330	12.5×14	400
50	470	16×17	570
50	1000	16×17	655
63	0.1	4×5.5	0.7

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
63	0.22	4×5.5	1.6
63	0.33	4×5.5	2.5
63	0.47	4×5.5	3.5
63	1	4×5.5	7
63	2.2	4×5.5	11
63	3.3	5×5.5	14
63	4.7	5×5.5	22
63	10	6.3×5.5	40
63	22	6.3×7.7	58
63	33	8×10.5	112
63	47	8×10.5	119
63	100	10×10.5	280
63	220	12.5×14	300
63	470	16×17	630
80	1	4×5.5	7
80	2.2	5×5.5	12
80	3.3	6.3×5.5	17
80	4.7	6.3×5.5	25
80	10	6.3×7.7	35
80	22	6.3×7.7	58
80	33	8×10.5	112
80	47	10×10.5	160
80	100	12.5×14	380
80	150	16×17	500
80	220	16×17	600
100	1	4×5.5	7
100	2.2	6.3×6.1	15
100	2.2	6.3×5.5	13
100	3.3	6.3×6.1	20
100	4.7	6.3×7.7	28
100	10	6.3×7.7	35
100	22	8×10.5	85
100	33	10×10.5	135
100	47	12.5×14	240
100	150	16×17	500
160	10	8×10.5	57
160	12	8×10.5	60
160	18	10×10.5	65
160	22	10×10.5	70
160	27	12.5×14	85
160	33	12.5×14	95
160	39	12.5×14	105
160	47	16×17	260
160	68	16×17	300
200	10	10×10.5	64
200	10	12.5×14	80
200	22	12.5×14	105
200	27	12.5×14	115
200	33	12.5×14	170
200	33	16×17	220
200	47	16×17	260
250	4.7	8×10.5	50
250	6.8	10×10.5	60
250	10	10×10.5	75
250	15	12.5×14	120
250	22	16×17	180
250	27	16×17	200
250	33	16×17	230
250	39	16×17	260
250	47	16×17	285

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
400	2.2	8×10.5	27
400	3.3	8×10.5	34
400	3.9	10×10.5	40
400	4.7	10×10.5	40
400	4.7	12.5×14	50
400	6.8	12.5×14	60
400	8.2	12.5×14	65
400	10	12.5×14	70
400	10	16×17	85
400	12	16×17	95
400	22	16×17	120
450	3.3	10×10.5	40
450	3.9	10×10.5	40
450	4.7	12.5×14	50
450	6.8	12.5×14	60
450	8.2	12.5×14	65
450	10	12.5×14	70
450	10	16×17	85
450	12	16×17	95
450	15	16×17	100
450	22	16×17	120

CapXon

JV series

JV Series Long Life

Features

- Chip type long life capacitance in large case sizes
- Chip type with Endurance of 3000 hours at +105℃
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- RoHS Compliant

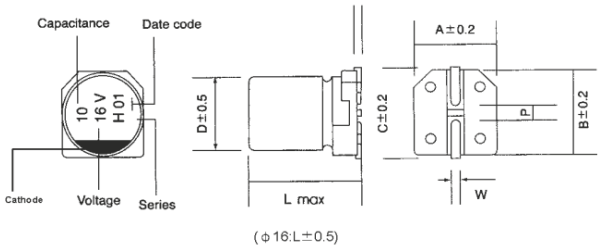
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	0.1 to1000μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA)After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max: 28 / 24 / 20 / 16 / 13 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 10 / 7 / 5 / 3 / 3 / 3
Endurance	Test conditions Duration time :3000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±30% of the initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃ for 30 seconds. Leakage: Less than specified value Capacitance: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP≦1000μF	0.8	1.0	1.10	1.15	1.20

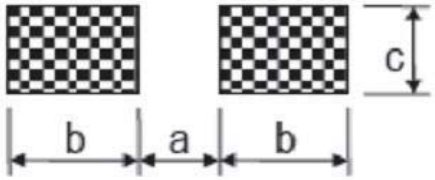
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

JV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
6.3	22	4×5.5	22
6.3	33	5×5.5	33
6.3	47	5×5.5	36
6.3	100	6.3×5.5	68
6.3	220	6.3×7.7	120
6.3	330	8×10.5	230
6.3	470	10×10.5	290
6.3	1000	10×10.5	360
10	22	5×5.5	30
10	33	5×5.5	35
10	47	6.3×5.5	52
10	100	6.3×7.7	81
10	220	8×10.5	142
10	330	10×10.5	280
10	470	10×10.5	305
16	10	4×5.5	18
16	22	5×5.5	31
16	33	6.3×5.5	48
16	47	6.3×5.5	51
16	100	6.3×7.7	83
16	220	10×10.5	222
16	330	10×10.5	305
16	470	10×10.5	330
25	4.7	4×5.5	16
25	10	4×5.5	26
25	22	6.3×5.5	44
25	33	6.3×5.5	50
25	47	6.3×7.7	66
25	100	8×10.5	118
25	220	10×10.5	300
25	330	10×10.5	395
25	470	10×10.5	470
35	4.7	4×5.5	16
35	10	5×5.5	27
35	22	6.3×5.5	45
35	33	6.3×7.7	58
35	47	8×10.5	93
35	100	10×10.5	155
35	220	10×10.5	340
35	330	10×10.5	420
50	0.1	4×5.5	1
50	0.22	4×5.5	3
50	0.33	4×5.5	3
50	0.47	4×5.5	5
50	1	4×5.5	8
50	2.2	4×5.5	12
50	3.3	4×5.5	17
50	4.7	5×5.5	22
50	10	6.3×5.5	33
50	22	6.3×7.7	58
50	33	8×10.5	140
50	47	8×10.5	170
50	100	10×10.5	300

CapXon

MV series

MV Series Long Life

Features

- Chip type long life capacitance in large case sizes
- Chip type with Endurance of 3000 hours at +105℃
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- RoHS Compliant

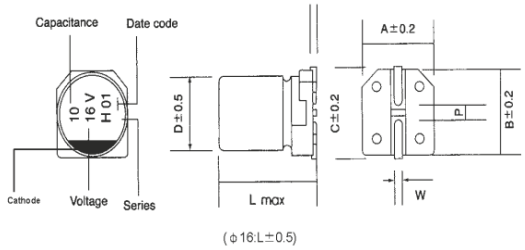
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +105℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	0.1 to1000μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA)After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max: 32 / 28 / 22 / 16 / 13 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 10 / 7 / 5 / 3 / 3 / 3
Endurance	Test conditions Duration time :5000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±30% of the initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃ for 30 seconds. Leakage: Less than specified value Capacitance: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP≦1000μF	0.8	1.0	1.10	1.15	1.20

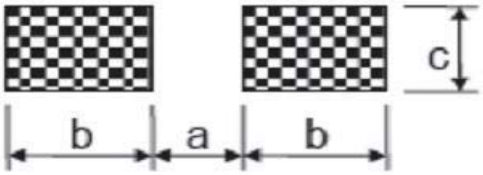
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

MV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
6.3	22	4×5.5	22
6.3	33	5×5.5	32
6.3	47	5×5.5	36
6.3	100	6.3×5.5	60
6.3	220	6.3×7.7	110
6.3	330	8×10.5	160
6.3	470	10×10.5	260
6.3	1000	10×10.5	340
10	22	5×5.5	28
10	33	5×5.5	34
10	47	6.3×5.5	48
10	100	6.3×7.7	79
10	220	8×10.5	140
10	330	8×10.5	210
10	330	10×10.5	240
10	470	8×10.5	250
10	470	10×10.5	280
10	1000	10×10.5	410
16	10	4×5.5	17
16	22	4×5.5	26
16	22	5×5.5	30
16	33	6.3×5.5	44
16	47	6.3×5.5	50
16	100	6.3×7.7	81
16	220	8×10.5	190
16	220	10×10.5	216
16	330	10×10.5	300
16	470	10×10.5	320
25	4.7	4×5.5	13
25	10	4×5.5	23
25	22	5×5.5	35
25	22	6.3×5.5	40
25	33	6.3×5.5	48
25	47	6.3×7.7	63
25	100	6.3×7.7	88
25	100	8×10.5	116
25	220	10×10.5	240
25	330	10×10.5	375
25	470	10×10.5	450
35	4.7	4×5.5	15
35	10	5×5.5	25
35	22	6.3×5.5	42
35	33	6.3×7.7	57
35	47	8×10.5	92
35	100	8×10.5	130
35	100	10×10.5	150
35	220	10×10.5	280
35	330	10×10.5	390
50	0.1	4×5.5	1
50	0.22	4×5.5	3
50	0.33	4×5.5	3
50	0.47	4×5.5	4
50	1	4×5.5	6
50	2.2	4×5.5	11
50	3.3	4×5.5	14
50	4.7	5×5.5	19
50	10	6.3×5.5	30
50	22	6.3×7.7	52
50	33	8×10.5	80
50	47	8×10.5	95
50	100	10×10.5	160

CapXon

CV series

CV Series Chip type

Features

- ◆ Chip type ,Low impedance
- ◆ Chip type with load life of 7000 hours at +105℃
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic mounting machine using carrier tape
- ◆ Complied to the RoHS directive

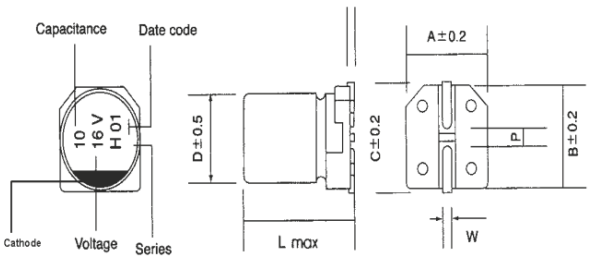
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Rate voltage Range	6.3~50 VDC
Capacitance Range	22 to 1500μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current(+20℃,max.)	I≦0.03 CV or 4 (μA)After 2 minutes whicheveris greater measured with rated working voltage applied.
Dissipation Factor(tanδ) (+20℃, at 120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max.: 32 / 28 / 26 / 16 / 14 / 14
Low Temperature Characteristics (Impedance ratio at 120Hz)	Impedance ratio max.(at:120Hz) Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃/+20℃: 4 / 3 / 2 / 2 / 2 / 2
Load Life	Test condition Duration time :7000hours Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : Within ±30% of initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value
Shelf Life	Test condition Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The following specificationsshall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃for 30 seconds. Leakage current: Less than specified value Capacitance change: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP (μF) \ Hz	60(50)	120	500	1K	10K~100K
0.1 ≤Cap ≤100 μF	0.53	0.67	0.8	0.87	1
100 ≤Cap ≤1500 μF	0.67	0.83	0.92	0.96	1

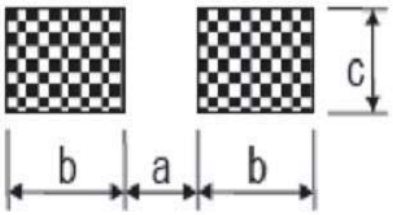
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

ΦD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	6.1	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100KHz
6.3	100	6.3×7.7	140	1.10
6.3	150	6.3×7.7	180	0.90
6.3	220	6.3×7.7	230	0.75
6.3	330	8×10.5	400	0.50
6.3	470	8×10.5	600	0.22
6.3	680	10×10.5	700	0.20
6.3	1000	12.5×14	1100	0.10
6.3	1500	16×17	1500	0.08
10	100	6.3×7.7	140	1.10
10	150	6.3×7.7	180	0.90
10	220	6.3×7.7	230	0.75
10	330	8×10.5	400	0.50
10	470	8×10.5	600	0.22
10	680	10×10.5	700	0.20
10	1000	12.5×14	1100	0.10
10	1500	16×17	1500	0.08
16	100	6.3×7.7	140	1.10
16	150	8×10.5	250	0.60
16	220	8×10.5	280	0.40
16	330	8×10.5	600	0.22
16	470	8×10.5	600	0.22
16	470	10×10.5	850	0.16
16	680	12.5×14	1100	0.10
16	1000	16×17	1500	0.08
25	22	6.3×7.7	95	1.50
25	33	6.3×7.7	120	1.30
25	47	6.3×7.7	140	1.10
25	100	8×10.5	280	0.70
25	150	8×10.5	380	0.60
25	220	8×10.5	600	0.22
25	330	8×10.5	650	0.20
25	390	10×10.5	750	0.19
25	470	10×10.5	850	0.16
25	680	12.5×14	1100	0.10
25	1000	16×17	1500	0.08
35	47	6.3×7.7	230	1.00
35	100	8×10.5	600	0.22
35	220	10×10.5	850	0.16
35	330	12.5×14	1100	0.10
35	470	16×17	1500	0.08
50	47	8×10.5	350	0.53
50	100	8×10.5	350	0.53
50	100	10×10.5	400	0.51
50	150	10×10.5	450	0.48
50	220	12.5×14	850	0.40
50	330	16×17	1100	0.30

SMD

NV Series

Features

- ◆ 85℃ Non-polarized
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ RoHS Compliant

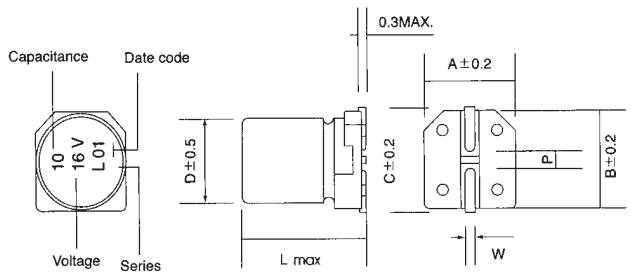
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +85℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	0.1 to 560μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	0.05 CV or 10 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied
Dissipation Factor (tan δ ，at 20℃，120Hz)	Rated voltage(VDC) 6.3 10 16 25 35 50 D.F. (%) max. 24 20 17 17 15 15
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC) 6.3 10 16 25 35 50 Z-25℃／Z+20℃ 4 3 2 2 2 2 Z-40℃／Z+20℃ 8 6 4 3 3 3
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±25% of the initial value Dissipation factor :Not more than 200% of specified value Leakage current :Not more than the specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under. Leakage current: Less than specified value Capacitance change: Within ±10% of initial value tan δ: Less than specified value

Multiplier for Ripple Current vs. Frequency

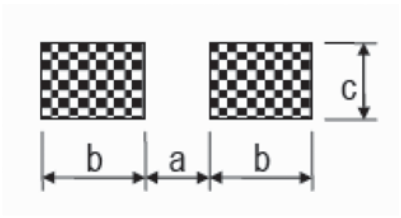
Frequency(Hz)	60(50)	120	500	1K	≧10K
Multiplier	0.8	1.0	1.20	1.30	1.50

Diagram of Dimensions:(unit:mm)



ϕD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1.0	2.6	1.6
5 x all	1.4	3.0	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6.0	6.5	3.5

Case Size

ϕ DxL(mm)

WV / Cap(μF)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x5.5	1.0
0.22											4x5.5	2.0
0.33											4x5.5	2.8
0.47											4x5.5	4.0
1											4x5.5	8.4
2.2									4x5.5	8.4	4x5.5	13
											5x5.5	13
3.3					4x5.5	12	4x5.5	12	4x5.5	16	4x5.5	17
							5x5.5	12	5x5.5	16	5x5.5	17
4.7					4x5.5	12	4x5.5	16	4x5.5	18	5x5.5	20
							5x5.5	16	5x5.5	18	6.3x5.5	20
10	4x5.5	15	4x5.5	17	4x5.5	23	5x5.5	27	6.3x5.5	29	6.3x5.5	32
					5x5.5	23	6.3x5.5	27				
22	4x5.5	28	5x5.5	33	5x5.5	37	6.3x5.5	40	6.3x5.5	45	8x10.5	60
	5x5.5	32	6.3x5.5	37	6.3x5.5	37						
33	5x5.5	37	6.3x5.5	41	6.3x5.5	49	6.3x7.7	51	8x10.5	58	10x10.5	75
							8x6.5	55				
47	6.3x5.5	45	6.3x5.5	50	6.3x7.7	51	6.3x7.7	56	8x10.5	64	10x10.5	100
					8x6.5	55	8x6.5	60				
100	6.3x7.7	65	6.3x7.7	75	8x10.5	100	8x10.5	130				
	8x6.5	70	8x6.5	80								
220	8x10.5	120	8x10.5	150	10x10.5	170						
330	8x10.5	160	10x10.5	180								
470	10x10.5	190										
560	10x10.5	220										

Ripple Current (mA, rms) at 85℃ 120Hz

CapXon

KV series

KV Series

Feature

- 85℃ Low leakage current case diameter Φ4～Φ8
- Reflow soldering is available
- Available for high density mounting
- RoHS Compliant

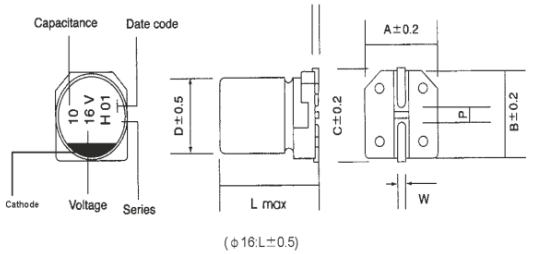
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +85℃
Rated Voltage Range	6.3~50VDC
Capacitance Range	0.1 to 3300μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≤0.002 CV or 0.4 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied
Dissipation Factor (tanδ，at 20℃，120Hz)	Rated voltage(VDC) 6.3 10 16 25 35 50 D.F.(%)max 26 22 18 16 14 12
Low Temperature Characteristics (at 120Hz)	**Impedance ratio max** Rated voltage(VDC) 6.3 10 16 25 35 50 Z-25℃ / Z+20℃ 4 3 2 2 2 2 Z-40℃ / Z+20℃ 8 6 4 4 3 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±25% of the initial value Dissipation factor :Not more than 200% of specified value Leakage current :Not more than the specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under. Leakage: Less than specified value Capacitance: Within ±10% of initial value **tanδ**: Less than specified value

Multiplier for Ripple Current vs.

CAP(μF)＼Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP≦330μF	0.8	1.0	1.10	1.15	1.20

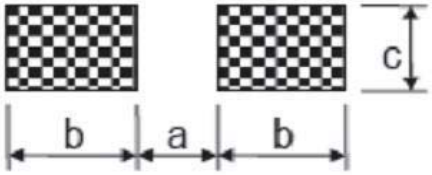
Diagram of



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	6.1	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)
6.3	10	4×5.5	15
6.3	22	4×5.5	28
6.3	33	4×5.5	37
6.3	47	4×5.5	45
6.3	100	5×5.5	70
6.3	220	6.3×7.7	102
6.3	220	8×6.5	110
6.3	330	6.3×7.7	155
6.3	330	8×6.5	170
10	10	4×5.5	23
10	22	4×5.5	33
10	33	5×5.5	41
10	47	6.3×5.5	52
10	100	6.3×7.7	75
10	100	8×6.5	80
10	220	6.3×7.7	125
10	220	8×6.5	135
16	4.7	4×5.5	10
16	10	4×5.5	23
16	22	5×5.5	37
16	33	6.3×5.5	49
16	47	6.3×5.5	58
16	100	6.3×7.7	85
16	100	8×6.5	92
25	3.3	4×5.5	10
25	4.7	4×5.5	16
25	10	4×5.5	27
25	22	5×5.5	42
25	33	6.3×5.5	52
25	47	6.3×7.7	65
25	47	8×6.5	70
25	100	6.3×7.7	102
25	100	8×6.5	110
35	2.2	4×5.5	8
35	3.3	4×5.5	15
35	4.7	4×5.5	18
35	10	6.3×5.5	29
35	22	6.3×5.5	46
35	33	6.3×7.7	58
35	33	8×6.5	62
35	47	6.3×7.7	75
35	47	8×6.5	80
50	0.1	4×5.5	1
50	0.22	4×5.5	2
50	0.33	4×5.5	3
50	0.47	4×5.5	4
50	1	4×5.5	8
50	2.2	4×5.5	13
50	3.3	4×5.5	17
50	4.7	6.3×5.5	20
50	10	6.3×5.5	33
50	22	6.3×7.7	48
50	22	8×6.5	52
50	33	6.3×7.7	66
50	33	8×6.5	71

SMD

ZV Series

Features

- ◆ Low impedence 100 KHz
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ Endurance 2000~5000 hrs at 105℃
- ◆ RoHS Compliant

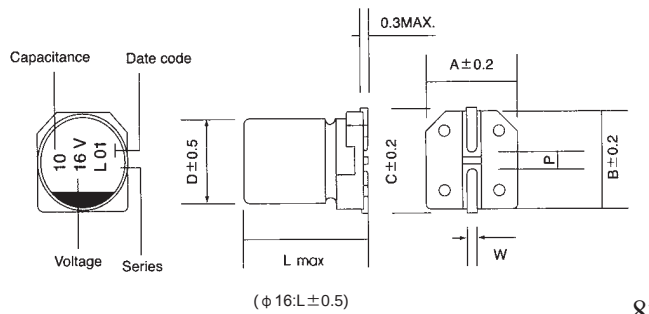
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	1 to 6800 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	0.01CV or 3(μA) After 2 minutes, whichever is greater measured with rated working voltage applied
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working voltage(VDC) 6.3 10 16 25 35 50 D.F. (%) max. 26 19 16 14 14 12 For capacitance value＞1000 μF, add 2 per another 1000 μF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC) 6.3 10 16 25 35 50 Z-25℃／Z+20℃ 2 3 2 2 2 2 Z-55℃／Z+20℃ 8 6 4 4 3 3
Endurance	Test conditions Duration time :2000 Hrs (φ12.5~16:5000H) Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +105℃ : Capacitance change :≦±25% of the initial measured value Dissipation factor :≦200% of the initial specified value Leakage current :≦The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under. Leakage current: Less than specified value Capacitance change: Within ±10% of initial value tan δ: Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1.0
10＜CAP	0.52	0.65	0.80	0.89	0.97	1.0

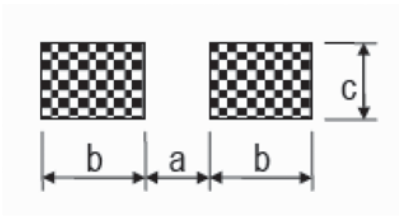
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1.0	2.6	1.6
5 x all	1.4	3.0	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6.0	6.5	3.5

Case Size

ϕ DxL(mm)

WV(V) / Cap(uF)	6.3			10			16			25			35			50		
	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.
2.2													4x5.5	53	5	4x5.5	53	5
3.3													4x5.5	53	5	4x5.5	53	5
4.7										4x5.5	53	5	4x5.5	53	5	4x5.5	53	5
6.8										4x5.5	58	4.5	4x5.5 5x5.5	65 85	4.0 2.8	5x5.5	65	4
10							4x5.5	65	5	4x5.5 5x5.5	74 80	3.7 2.6	4x5.5 5x5.5 6.3x5.5	90 98 110	3.5 2.5 2.4	5x5.5 6.3x5.5	90 100	3.5 2.5
15							4x5.5	70	4.6	5x5.5 6.3x5.5	100 115	2.2 1.8	5x5.5 6.3x5.5	120 140	1.8 1.5	6.3x5.5	130	1.8
22	4x5.5	53	3.5	4x5.5	80	2.6	4x5.5 5x5.5	83 110	3.0 2.6	5x5.5 6.3x5.5	128 140	1.7 1.5	5x5.5 6.3x5.5	140 150	1.4 1.3	6.3x5.5	140	1.5
27	4x5.5	65	3.2	5x5.5	85	2.4	5x5.5	135	1.9	6.3x5.5	145	1.4	6.3x5.5	165	1.2	6.3x7.7	160	1.35
33	4x5.5 5x5.5	80 82	2.8 2.6	4x5.5 5x5.5	85 110	2.3 2.1	5x5.5 6.3x5.5	160 170	2.2 1.5	5x5.5 6.3x5.5	145 175	1.4 1.3	6.3x5.5 6.3x7.7 8x6.5	185 210 230	1.2 0.9 0.8	6.3x7.7 8x6.5	170 180	0.8 0.75
47	4x5.5 5x5.5	82 85	2.4 2.2	5x5.5 6.3x5.5	130 160	2.0 1.5	5x5.5 6.3x5.5	170 185	2.0 1.5	6.3x5.5 6.3x7.7 8x6.5	180 195 220	1.2 0.8 0.75	6.3x5.5 6.3x7.7 8x6.5	200 220 240	1.0 0.75 0.7	6.3x7.7 8x6.5	200 220	0.79 0.72
56	5x5.5	94	1.70	6.3x5.5	180	1.45	6.3x5.5	195	1.3	6.3x5.5	195	1.15	6.3x7.7	230	0.73	8x10.5	260	0.68
68	5x5.5 6.3x5.5	100 120	1.6 1.3	6.3x5.5 6.3x7.7	195 210	1.4 1.3	6.3x5.5 6.3x7.7 8x6.5	205 210 220	1.2 1.1 1.0	6.3x5.5 6.3x7.7 8x6.5	200 210 230	1.1 0.75 0.7	6.3x7.7 8x6.5	240 250	0.7 0.68	8x10.5	300	0.6
100	5x5.5 6.3x5.5	110 160	1.5 1.1	6.3x5.5 6.3x7.7	210 230	1.3 1.2	6.3x5.5 6.3x7.7	210 220	1.1 0.9	6.3x7.7 8x6.5	220 250	0.75 0.7	6.3x7.7 8x10.5	270 350	0.67 0.5	8x10.5	310	0.55
150	6.3x5.5 6.3x7.7	170 195	0.95 0.85	6.3x5.5 8x6.5	220 240	1.0 0.8	6.3x7.7 8x6.5	225 240	0.8 0.7	8x10.5	420	0.5	8x10.5	430	0.45	10x10.5	540	0.28
220	6.3x5.5 6.3x7.7	195 210	0.6 0.57	6.3x7.7 8x6.5	245 255	0.60 0.55	6.3x7.7 8x6.5	250 260	0.75 0.66	8x10.5 10x10.5	480 500	0.3 0.28	8x10.5	450	0.25	10x10.5	570	0.26
330	6.3x7.7 8x6.5	230 250	0.51 0.49	8x10.5	400	0.36	8x10.5	470	0.34	8x10.5	510	0.26	10x10.5	570	0.23	12.5x14	620	0.25
470	8x10.5	380	0.45	8x10.5	470	0.32	8x10.5	520	0.3	10x10.5	570	0.18	12.5x14	900	0.15			
680	8x10.5	420	0.42	10x10.5	620	0.29	10x10.5	600	0.26				12.5x14	900	0.15			
1000	8x10.5 10x10.5	470 500	0.28 0.25	10x10.5	670	0.25				12.5x14	900	0.15				16x17	820	0.2
1200	10x10.5	530	0.20				12.5x14	900	0.15									
1500	10x10.5	570	0.17				12.5x14	900	0.15				16x17	1030	0.11			
2200				12.5x14	900	0.15				16x17	1030	0.11						
3300	12.5x14	900	0.15				16x17	1030	0.11									
4700				16x17	1030	0.11												
6800	16x17	1030	0.11															

Ripple current (mArms) at 105℃ 100KHz

Max Impedance at 20℃ 100KHz

CapXon

DV series

DV Series Chip type

Features

- Chip type ,Low impedance
- Chip type with Endurance of 2000~5000 hours at +105℃
- Designed for surface mounting on high density PC board
- Applicable to automatic mounting machine using carrier tape
- Complied to the RoHS directive

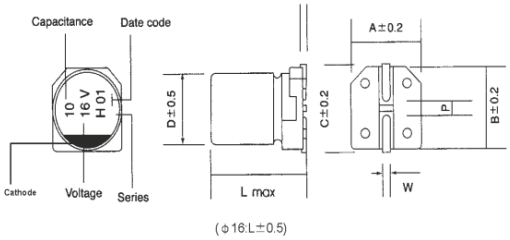
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105℃
Rated Voltage Range	6.3~100 VDC
Capacitance Range	1 to 6800μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA)After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 D.F.(%)max: 24 / 19 / 16 / 14 / 14 / 12 / 10 / 9 / 8
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Z-25℃ / Z+20℃: 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 4 / 3 / 3 / 3 / 3 / 3
Endurance	Test conditions Duration time : 2000hours (Φ12.5~16:5000H) Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±30% of the initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃ for Leakage: Less than specified value Capacitance: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF) \ Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP	0.52	0.65	0.80	0.89	0.97	1

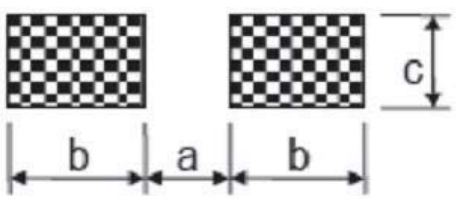
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

DV series

Case

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	22	4×5.5	75	2.20
6.3	27	4×5.5	79	1.98
6.3	33	4×5.5	82	1.90
6.3	33	5×5.5	130	1.30
6.3	47	4×5.5	86	1.88
6.3	47	5×5.5	150	1.10
6.3	56	5×5.5	150	1.10
6.3	68	5×5.5	160	0.90
6.3	68	6.3×5.5	220	0.55
6.3	100	5×5.5	170	0.80
6.3	100	6.3×5.5	230	0.53
6.3	150	6.3×5.5	235	0.51
6.3	150	8×6.5	250	0.48
6.3	220	6.3×7.7	260	0.45
6.3	220	6.3×5.5	240	0.48
6.3	330	6.3×7.7	275	0.36
6.3	330	8×6.5	290	0.34
6.3	470	8×10.5	450	0.28
6.3	680	8×10.5	500	0.25
6.3	1000	8×10.5	530	0.20
6.3	1000	10×10.5	570	0.17
6.3	1200	10×10.5	600	0.16
6.3	1500	10×10.5	650	0.13
6.3	1800	10×10.5	860	0.08
6.3	3300	12.5×14	1100	0.080
6.3	6800	16×17	1250	0.052
10	22	4×5.5	80	2.20
10	27	5×5.5	125	1.90
10	33	4×5.5	90	1.85
10	33	5×5.5	150	1.20
10	47	5×5.5	165	1.10
10	47	6.3×5.5	180	0.59
10	56	6.3×5.5	210	0.57
10	68	6.3×5.5	220	0.55
10	100	5×5.5	210	0.80
10	100	6.3×5.5	240	0.53
10	150	6.3×5.5	250	0.49
10	150	8×6.5	260	0.47
10	220	6.3×7.7	270	0.44
10	220	8×6.5	285	0.40
10	330	8×10.5	500	0.25
10	470	8×10.5	550	0.25
10	680	10×10.5	680	0.20
10	1000	10×10.5	740	0.15
10	2200	12.5×14	1100	0.080
10	4700	16×17	1250	0.052
16	10	4×5.5	80	2.20
16	15	4×5.5	85	2.00
16	22	4×5.5	90	1.98
16	22	5×5.5	140	1.60
16	27	5×5.5	170	0.74
16	33	6.3×5.5	185	0.60
16	47	5×5.5	195	1.05
16	47	6.3×5.5	210	0.58
16	56	6.3×5.5	220	0.56
16	68	6.3×5.5	230	0.54
16	68	8×6.5	240	0.50
16	100	6.3×5.5	255	0.52
16	150	6.3×7.7	265	0.45
16	150	8×6.5	270	0.44

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
16	220	6.3×7.7	275	0.43
16	220	8×6.5	285	0.41
16	330	8×10.5	550	0.25
16	470	8×10.5	590	0.22
16	680	10×10.5	720	0.16
16	1500	12.5×14	1100	0.080
16	3300	16×17	1250	0.052
25	6.8	4×5.5	70	2.80
25	10	4×5.5	85	2.10
25	15	5×5.5	125	1.90
25	22	5×5.5	145	1.20
25	22	6.3×5.5	160	1.15
25	27	6.3×5.5	200	0.62
25	33	5×5.5	160	1.05
25	33	6.3×5.5	220	0.58
25	47	6.3×7.7	230	0.54
25	47	6.3×5.5	220	0.56
25	56	6.3×5.5	230	0.54
25	68	6.3×5.5	240	0.48
25	68	8×6.5	260	0.45
25	100	6.3×7.7	290	0.38
25	100	8×6.5	300	0.36
25	150	8×10.5	480	0.25
25	220	8×10.5	530	0.22
25	330	8×10.5	570	0.20
25	470	10×10.5	650	0.15
25	1000	12.5×14	1100	0.080
25	2200	16×17	1250	0.052
35	3.3	4×5.5	80	2.80
35	4.7	4×5.5	85	2.50
35	6.8	4×5.5	88	2.20
35	10	4×5.5	90	2.00
35	10	5×5.5	125	1.40
35	15	5×5.5	140	1.20
35	22	5×5.5	155	1.10
35	22	6.3×5.5	170	1.05
35	27	6.3×5.5	210	0.60
35	33	6.3×5.5	230	0.54
35	33	8×6.5	260	0.51
35	47	6.3×5.5	240	0.53
35	47	8×6.5	250	0.49
35	56	6.3×7.7	250	0.49
35	68	6.3×7.7	265	0.40
35	100	6.3×7.7	300	0.38
35	100	8×10.5	420	0.28
35	150	8×10.5	510	0.24
35	220	8×10.5	570	0.21
35	330	10×10.5	650	0.15
35	470	12.5×14	1100	0.08
35	680	12.5×14	1100	0.080
35	1500	16×17	1250	0.052
50	1	4×5.5	55	4.50
50	2.2	4×5.5	55	4.50
50	3.3	4×5.5	55	4.50
50	4.7	4×5.5	55	4.50
50	6.8	5×5.5	75	3.80
50	10	5×5.5	95	2.80
50	10	6.3×5.5	130	2.20
50	15	6.3×5.5	140	1.60
50	22	6.3×5.5	150	1.30

CapXon

DV series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Max ESR(Ω) at 20℃ /100kHz
50	27	6.3×7.7	180	1.20
50	33	6.3×7.7	190	0.71
50	33	8×6.5	200	0.70
50	47	6.3×7.7	230	0.70
50	47	8×6.5	240	0.69
50	56	8×10.5	300	0.52
50	68	8×10.5	320	0.50
50	100	8×10.5	350	0.46
50	150	10×10.5	600	0.25
50	220	10×10.5	650	0.23
50	330	12.5×14	800	0.210
50	1000	16×17	1000	0.078
63	4.7	5×5.5	45	2.80
63	10	6.3×5.5	80	1.60
63	22	6.3×7.7	150	1.10
63	33	8×10.5	230	0.80
63	47	8×10.5	260	0.55
63	68	10×10.5	380	0.40
63	100	10×10.5	400	0.28
63	100	12.5×14	520	0.26
63	150	12.5×14	780	0.20
63	220	12.5×14	810	0.18
63	470	16×17	1390	0.085
80	4.7	6.3×5.5	50	3.80
80	10	6.3×7.7	70	3.0
80	22	6.3×7.7	110	1.70
80	33	8×10.5	200	1.10
80	47	10×10.5	320	0.90
80	68	10×10.5	490	0.65
80	100	12.5×14	580	0.42
80	220	16×17	930	0.26
100	10	6.3×7.7	65	4.00
100	22	8×10.5	110	2.00
100	33	10×10.5	180	1.30
100	47	10×10.5	370	1.00
100	47	12.5×14	480	0.95
100	68	12.5×14	580	0.60
100	100	12.5×14	620	0.50
100	220	16×17	1050	0.28

CapXon

RV series

RV Series Chip type

Features

- Chip type ,Low impedance
- Chip type with Endurance of 5000 hours at +105℃
- Designed for surface mounting on high density PC board
- Applicable to automatic mounting machine using carrier tape
- Complied to the RoHS directive

Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105℃(6.3 to 100Vdc) -40~ +105℃(160 to 450Vdc)
Rated Voltage Range	6.3~100 VDC / 160~450 VDC
Capacitance Range	1 to 6800μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) whichever is greater (2 minutes) / I≦0.04 CV+100μA (1 minute)

Dissipation Factor (tanδ，at 20℃，120Hz)

Working voltage(VDC)	6.3	10	16	25	35	50	63	80	100	160～250	＞250
D.F.(%)max	22	19	16	14	14	12	10	9	8	15	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Rated voltage(VDC)	6.3	10	16	25	35	50	63	80	100	160～250	＞250
Z-25℃ / Z+20℃	4	3	2	2	2	2	2	2	2	3	6
Z-40℃ / Z+20℃	8	6	4	4	3	3	3	3	3	6	10

Endurance

Test conditions

Duration time : 5000hours (2000 hours for ΦD≦ 6.3)

Ambient temperature :+105℃

Applied voltage :Rated DC working voltage

After test requirement at +20℃:

Capacitance change :Within ±30% of the initial value

Dissipation factor :Less than 300% of specified value

Leakage current :Less than specified value

Shelf Life

Test conditions

Duration time :1000 Hrs

Ambient temperature :+105℃

Applied voltage :None

After test requirement at +20℃ : Same limits as Endurance.

Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Resistance to soldering heat

The following specifications shall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃ for

Leakage	Less than specified value
Capacitance	Within ±10% of initial value
tanδ	Less than specified value

Multiplier for Ripple Current vs. Frequency

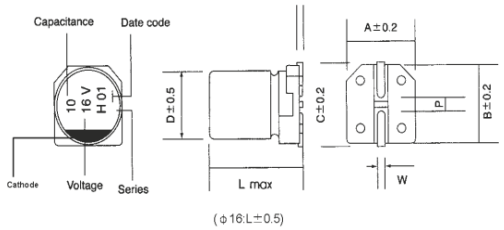
＜160V

CAP(μF)＼Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP	0.52	0.65	0.80	0.89	0.97	1

≥160V

Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
Multiplier	0.80	1.00	1.25	1.40	1.55	1.6

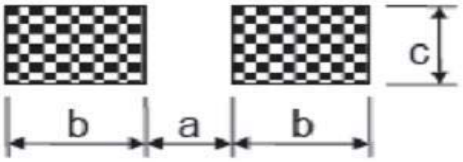
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

CapXon

RV series

Case

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	22	4×5.5	80	1.35
6.3	33	4×5.5	85	1.35
6.3	47	5×5.5	160	0.80
6.3	100	6.3×5.5	240	0.44
6.3	150	6.3×5.5	240	0.44
6.3	220	6.3×7.7	280	0.36
6.3	330	6.3×7.7	350	0.32
6.3	330	8×10.5	450	0.17
6.3	470	8×10.5	500	0.17
6.3	680	8×10.5	550	0.17
6.3	1000	8×10.5	550	0.17
6.3	1500	10×10.5	690	0.09
6.3	3300	12.5×14	1150	0.066
6.3	6800	16×17	1800	0.035
10	22	4×5.5	90	1.35
10	33	5×5.5	160	0.80
10	47	6.3×5.5	230	0.44
10	100	6.3×5.5	240	0.44
10	150	6.3×5.5	250	0.44
10	220	6.3×7.7	280	0.36
10	330	8×10.5	500	0.17
10	470	8×10.5	550	0.17
10	680	10×10.5	690	0.09
10	1000	10×10.5	690	0.09
10	2200	12.5×14	1150	0.066
10	4700	16×17	1800	0.035
16	10	4×5.5	90	1.35
16	22	5×5.5	150	0.80
16	33	6.3×5.5	230	0.44
16	47	6.3×5.5	230	0.44
16	100	6.3×5.5	255	0.44
16	150	6.3×7.7	280	0.36
16	220	6.3×7.7	280	0.36
16	330	8×10.5	550	0.17
16	470	8×10.5	600	0.17
16	470	10×10.5	670	0.09
16	680	10×10.5	750	0.09
16	1500	12.5×14	1150	0.066
16	3300	16×17	1800	0.035
25	10	4×5.5	90	1.35
25	22	5×5.5	150	0.80
25	33	6.3×5.5	230	0.44
25	100	6.3×7.7	300	0.36
25	150	8×10.5	500	0.17
25	220	8×10.5	550	0.17
25	330	8×10.5	600	0.17
25	470	10×10.5	670	0.09
25	1000	12.5×14	1150	0.066
35	4.7	4×5.5	90	1.90
35	22	6.3×5.5	230	0.44
35	33	6.3×5.5	230	0.44
35	47	6.3×5.5	240	0.44
35	100	8×10.5	450	0.17
35	**150**	**8×10.5**	**550**	**0.17**
35	220	8×10.5	600	0.16
35	220	10×10.5	670	0.09
35	330	10×10.5	850	0.08

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
35	470	12.5×14	1150	0.066
35	680	12.5×14	1150	0.066
35	1000	16×17	1800	0.035
35	1500	16×17	1800	0.035
50	1	4×5.5	60	4.40
50	2.2	4×5.5	60	3.90
50	3.3	4×5.5	60	3.90
50	4.7	4×5.5	75	3.90
50	4.7	5×5.5	85	1.52
50	10	6.3×5.5	165	1.40
50	22	6.3×5.5	165	1.20
50	33	6.3×7.7	185	0.68
50	47	6.3×7.7	185	0.68
50	68	8×10.5	300	0.34
50	100	8×10.5	350	0.34
50	100	10×10.5	555	0.25
50	150	10×10.5	555	0.25
50	220	10×10.5	600	0.23
50	470	16×17	1610	0.073
50	680	16×17	1610	0.073
50	1000	16×17	1610	0.073
63	4.7	5×5.5	50	2.60
63	10	6.3×5.5	80	1.50
63	22	6.3×7.7	120	1.00
63	33	8×10.5	250	0.70
63	47	8×10.5	280	0.65
63	68	10×10.5	400	0.38
63	100	10×10.5	420	0.24
63	100	12.5×14	540	0.22
63	150	12.5×14	800	0.18
63	220	12.5×14	830	0.16
63	470	16×17	1410	0.082
80	10	6.3×7.7	60	2.60
80	22	8×10.5	130	1.70
80	33	8×10.5	140	1.60
80	47	10×10.5	210	0.70
80	68	12.5×14	500	0.50
80	100	12.5×14	550	0.45
80	150	12.5×14	600	0.42
80	220	16×17	700	0.38
80	330	16×17	800	0.32
100	10	6.3×7.7	65	3.90
100	33	10×10.5	200	1.25
100	47	10×10.5	390	0.95
100	47	12.5×14	500	0.90
100	68	12.5×14	600	0.57
100	100	12.5×14	640	0.48
100	100	16×17	800	0.45

CapXon

RV series

Case

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Max ESR(Ω) at 20℃ /100kHz
160	10	8×10.5	55	
160	18	10×10.5	65	
160	22	10×10.5	70	
160	27	12.5×14	85	
160	33	12.5×14	95	
160	47	16×17	260	
160	68	16×17	300	
200	10	12.5×14	80	
200	22	12.5×14	105	
200	27	12.5×14	115	
200	33	16×17	220	
200	47	16×17	260	
250	4.7	8×10.5	50	
250	4.7	12.5×14	65	
250	6.8	10×10.5	60	
250	6.8	12.5×14	78	
250	10	10×10.5	75	
250	15	12.5×14	120	
250	22	16×17	180	
400	2.2	8×10.5	25	
400	3.3	8×10.5	30	
400	3.9	10×10.5	35	
400	4.7	10×10.5	40	
400	6.8	12..5×14	60	
400	8.2	12.5×14	65	
400	10	12.5×14	70	
400	12	16×17	95	
400	22	16×17	120	
450	3.3	10×10.5	40	
450	3.9	10×10.5	40	
450	4.7	12.5×14	50	
450	6.8	12.5×14	60	
450	8.2	12.5×14	65	
450	10	12.5×14	70	
450	12	16×17	90	
450	15	16×17	100	

CapXon

TV Series High Temperature 125℃

Features

- Chip type ,operating temperature range-40 to +125℃
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- RoHS Compliant

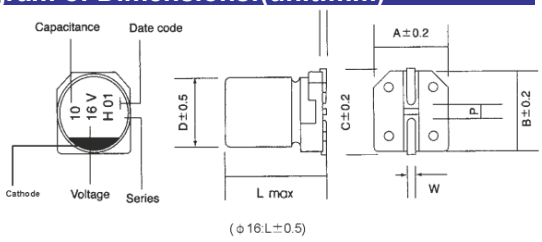
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +125℃
Rated Voltage Range	10~100 VDC / 160~450 VDC
Capacitance Range	1 to 330μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.03 CV or 3 (μA) whichever is greater (1 minutes) / I≦0.04 CV+100μA (1 minute)
Dissipation Factor (tanδ，at 20℃，120Hz)	Working voltage(VDC): 10 / 16 / 25 / 35 / 50 / 160～200 / ≥250 D.F.(%)max: 32 / 24 / 21 / 18 / 18 / 20 / 25
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 10 / 16 / 25 / 35 / 50 / 160 / 200 / 250 / 400 Z-40℃ / Z+20℃: 12 / 8 / 6 / 4 / 4 / 8 / 8 / 8 / 12
Endurance	Test conditions Duration time : 1000 Hrs (Φ8X6.5mm & 6.3X7.7mm) ; 2000Hrs (Φ8X10.5mm & 10X10.5mm) Ambient temperature :+125℃ Applied voltage :Rated DC working voltage After test requirement at +20℃: Capacitance change :Within ±30% of the initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+1205℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to20℃ after exposing them at 250℃ for 30 seconds. Leakage: Less than specified value Capacitance: Within ±10% of initial value tanδ: Less than specified value

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	60(50)	120	500	1K	≥10K
0.1~47μF	0.80	1.00	1.20	1.30	1.5
100~1000μF	0.80	1.00	1.10	1.15	1.2

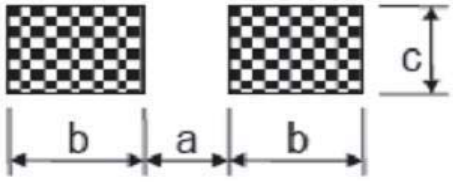
Diagram of Dimensions:(unit:mm)



(φ16:L±0.5)

φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)

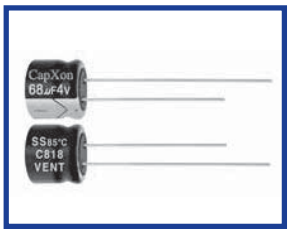


ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height>6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6	6.5	3.5

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
10	100	6.3×7.7	53
10	100	8×6.5	58
10	220	8×10.5	90
10	330	10×10.5	112
16	100	8×10.5	66
16	220	10×10.5	102
25	47	6.3×7.7	45
25	47	8×6.5	48
25	100	8×10.5	74
25	220	10×10.5	116
35	33	6.3×7.7	40
35	33	8×6.5	44
35	47	8×10.5	52
35	100	10×10.5	80
50	10	6.3×7.7	22
50	10	8×6.5	24
50	22	6.3×7.7	35
50	22	8×6.5	38
50	33	8×10.5	46
50	47	10×10.5	58
160	6.8	8×10.5	42
160	10	10×10.5	59
160	18	10×10.5	65
200	4.7	8×10	36
200	6.8	10×10.5	59
200	10	10×10.5	59
250	3.3	8×10.5	28
250	4.7	10×10.5	59
400	1	8×10.5	27
400	1.8	8×10.5	30
400	2.2	10×10.5	37
400	3.3	10×10.5	39

SS Series 5 mm 85℃



Features

- ◆ Design for space-saving and high density insertion.
- ◆ 4WV products are standardized for recent battery power source devices.
- ◆ Low price compared to Tantalum capacitors.
- ◆ Applications: VTR, car radio and commercial applications.
- ◆ RoHS Compliant

Specifications

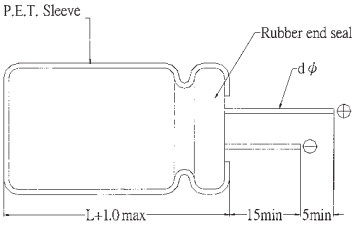
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	4 to 50 VDC
Capacitance Range	0.1 to 330 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 1 minute, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 35 / 24 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃／Z+20℃: 7 / 4 / 3 / 2 / 2 / 2 / 2 Z-40℃／Z+20℃: 15 / 8 / 8 / 4 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

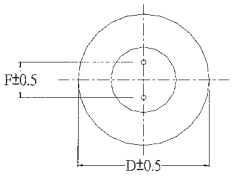
Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	1K	≧10K
0.1~68 μF	0.8	1	1.30	1.50
100~330 μF	0.8	1	1.15	1.20

Diagram of Dimensions:(unit:mm)





Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45			

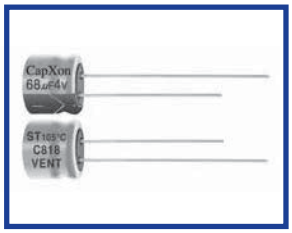
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4x5	1.5
0.15													4x5	2.0
0.22													4x5	2.6
0.33													4x5	3.2
0.47													4x5	3.8
0.68													4x5	5.0
1													4x5	6.2
1.5													4x5	7.0
2.2											4x5	8.4	4x5	9.0
3.3													4x5	14
									4x5	10	4x5	11		
4.7											4x5	18	5x5	20
							4x5	11	4x5	15				
6.8									4x5	17	5x5	20	6.3x5	25
					4x5	11	4x5	13						
10									4x5	27	5x5	29	6.3x5	30
	4x5	11	4x5	14	4x5	17	4x5	20	5x5	28				
15	4x5	17	4x5	17	4x5	21	5x5	26	5x5	30	6.3x5	33	6.3x5	37
									6.3x5	33				
22					4x5	30	4x5	33	6.3x5	44	6.3x5	46	6.3x5	48
	4x5	21	4x5	24	5x5	33	5x5	35					8x5	52
33			4x5	33	5x5	39	5x5	42	6.3x5	52	8x5	63	8x5	70
	4x5	28	5x5	37			6.3x5	46						
47	4x5	33	5x5	39	5x5	42	6.3x5	58	6.3x5	62	8x5	83		
					6.3x5	46								
68	5x5	43	6.3x5	53	6.3x5	56	6.3x5	65	8x5	90				
	6.3x5	48												
100	5x5	52	6.3x5	65	6.3x5	76	6.3x5	86	8x5	108				
							8x5	92						
220	6.3x5	78	6.3x5	90	8x5	138								
			8x5	115										
330	8x5	142	8x5	145										

Ripple Current (mA, rms) at 85℃ 120Hz

ST Series 5 mm 105℃



Features

- ◆ 5.0+1 mm max height
- ◆ Endurance 105℃, 1000 hrs assured
- ◆ RoHS Compliant

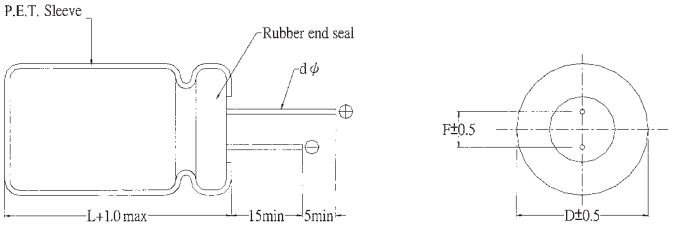
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	4 to 50 VDC
Capacitance Range	0.1 to 100 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	1≦0.01 CV or 3 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 35 / 24 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 6 / 3 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 12 / 8 / 5 / 4 / 3 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	1K	≧10K
0.1~47	0.8	1	1.30	1.50
100~220	0.8	1	1.15	1.20

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45			

Radial

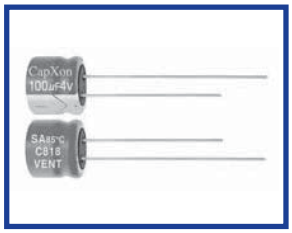
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4x5	1.5
0.15													4x5	2.0
0.22													4x5	2.6
0.33													4x5	3.2
0.47													4x5	3.8
0.68													4x5	5
1													4x5	6.2
1.5													4x5	7
2.2											4x5	7.5	4x5	11
3.3													4x5	14
									4x5	8.5	4x5	11		
4.7											4x5	15	5x5	19
							4x5	9	4x5	13				
6.8							4x5	13	4x5	15	5x5	19	5x5	22
					4x5	11							6.3x5	25
10					4x5	15	4x5	18	5x5	23	5x5	25	6.3x5	30
	4x5	10	4x5	12										
15	4x5	13	4x5	15	4x5	18	5x5	23	6.3x5	32	6.3x5	32	8x5	35
22	4x5	22	4x5	22	5x5	27	5x5	30	6.3x5	39	6.3x5	48	8x5	50
33	5x5	30	5x5	30	5x5	35	6.3x5	45	6.3x5	48	8x5	50		
47	5x5	36	5x5	36	6.3x5	48	6.3x5	50	6.3x5	50				
									8x5	55				
68	6.3x5	52	6.3x5	52	6.3x5	53	8x5	55						
100	6.3x5	60	6.3x5	60	8x5	65	8x5	68						
220	6.3x5	80	6.3x5	80	8x5	83								

Ripple Current (mA, rms) at 105℃ 120Hz

SA Series 5 mm, Low Leakage Current 85℃



Features

- ◆ Low leakage current, height 5 mm
- ◆ RoHS Compliant

Specifications

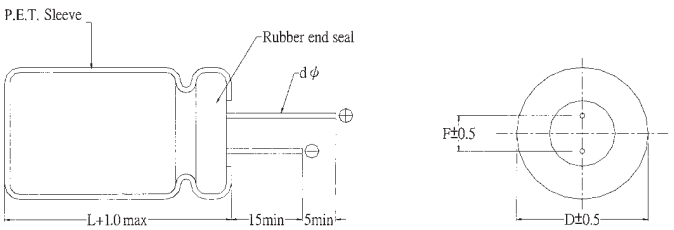
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	4 to 50 VDC
Capacitance Range	0.1 to 100 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current(+20℃, max)	I≦0.002 CV or 0.4 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 35 / 24 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 Z-40℃ / Z+20℃: 15 / 10 / 8 / 6 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	1K	≧10K
0.1~47	0.8	1	1.30	1.50
100	0.8	1	1.15	1.20

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45			

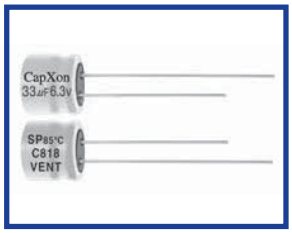
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4x5	1.0
0.22													4x5	2.0
0.33													4x5	2.8
0.47													4x5	4.0
1													4x5	8.4
2.2													4x5	13
3.3													5x5	17
4.7									4x5	16	4x5	18	5x5	20
10							4x5	25	5x5	27	5x5	29	6.3x5	33
22			4x5	28	4x5	32	5x5	37	6.3x5	42	6.3x5	46	8x5	60
33	5x5	28	5x5	37	5x5	41	6.3x5	49	6.3x5	52				
47	5x5	33	5x5	45	6.3x5	52	6.3x5	58						
100	6.3x5	56	6.3x5	70										

Ripple Current (mA, rms) at 85℃ 120Hz

SP Series 5 mm, Non-polar 85℃



Features

- Non-polarized with 5 mm for crossover networks of height-pitched, mean and low pitched sounds in high-fidelity sound systems.
- The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- RoHS Compliant

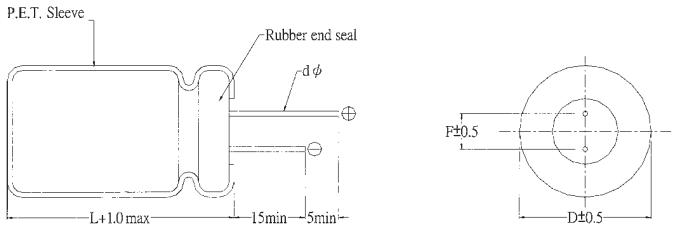
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.1 to 47 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.05 CV or 10 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 24 / 20 / 17 / 17 / 15 / 15
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage to each polarity for 500 Hrs After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3
F	1.5±0.5	2.0±0.5	2.5±0.5
dφ	0.45		

Radial

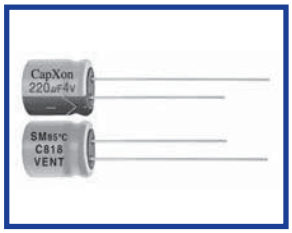
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x5	1
0.22											4x5	2
0.33											4x5	2.8
0.47											4x5	4
1											4x5	8
2.2									4x5	8.5	5x5	13
3.3					4x5	10	5x5	13	5x5	14	5x5	15
4.7					4x5	12	5x5	15	5x5	16	6.3x5	18
10	4x5	15	4x5	16	5x5	23	6.3x5	25	6.3x5	28		
			5x5	18								
22	5x5	27	6.3x5	32	6.3x5	36						
33	6.3x5	35	6.3x5	40	6.3x5	47						
47	6.3x5	44										

Ripple Current (mA, rms) at 85℃ 120Hz

SM Series 7 mm 85℃ Standard



Features

- ◆ Design for space-saving and high density insertion.
- ◆ Applications: VTR, car radio, car stereos, charger, etc.
- ◆ RoHS Compliant

Specifications

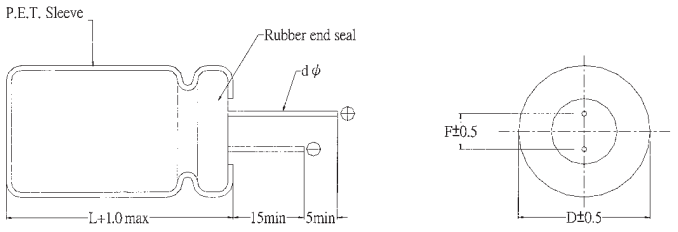
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	4 to 63 VDC
Capacitance Range	0.1 to 470 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 1 minute, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 25 / 22 / 20 / 16 / 14 / 12 / 10 / 9
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃ / Z+20℃: 7 / 4 / 3 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 15 / 8 / 6 / 4 / 4 / 3 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Case Size

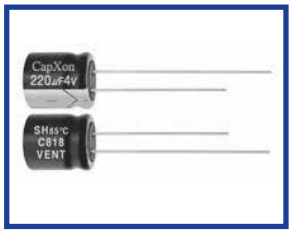
ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7							4x7	15	4x7	20
6.8							4x7	20	4x7	22
10							4x7	28	4x7	30
15			4x7	28	4x7	32	4x7	35	5x7	37
22			4x7	35	4x7	36	4x7	40	4x7	46
					5x7	38	5x7	42	5x7	50
33	4x7	33	4x7	40	4x7	43	4x7	45	5x7	52
			5x7	42	5x7	45	5x7	55	6.3x7	58
47	4x7	35	4x7	46	4x7	50	5x7	65	6.3x7	71
			5x7	48	5x7	58	6.3x7	68		
68	4x7	42	5x7	50	5x7	60	6.3x7	70	6.3x7	79
100	4x7	55	5x7	75	5x7	82	6.3x7	98	8x7	113
	5x7	61	6.3x7	80	6.3x7	90	8x7	105		
150	5x7	72	6.3x7	82	6.3x7	95	8x7	111		
			8x7	85						
220	6.3x7	110	6.3x7	120	6.3x7	136	8x7	152		
			8x7	133	8x7	140				
330	6.3x7	120	8x7	160	8x7	182				
	8x7	165								
470	8x7	235								

WV / Cap(μ F)	35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple
0.1			4x7	1.3	4x7	1.3
0.15			4x7	2	4x7	2.0
0.22			4x7	3	4x7	3.0
0.33			4x7	3.5	4x7	4.0
0.47			4x7	5	4x7	6.3
0.68			4x7	7.5	4x7	8
1			4x7	10	4x7	12
1.5			4x7	13	4x7	14
2.2			4x7	17	4x7	18
3.3	4x7	18	4x7	23	5x7	25
4.7	4x7	22	4x7	24	5x7	30
			5x7	26	6.3x7	33
6.8	5x7	25	5x7	28	6.3x7	31
10	4x7	31	5x7	35	6.3x7	48
	5x7	33	6.3x7	38		
15	5x7	37	6.3x7	42	8x7	45
22	5x7	47	6.3x7	59	8x7	65
	6.3x7	55	8x7	63		
33	6.3x7	65	8x7	75		
	8x7	68				
47	8x7	85	8x7	88		
68	8x7	88				
100	8x7	119				

Ripple Current (mA, rms) at 85℃ 120Hz

SH Series 7 mm 85℃ Long Life



Features

- ◆ Long life 2000 hrs.
- ◆ Design for space-saving and high density insertion.
- ◆ Applications: VTR, car radio, car stereos, charger, etc.
- ◆ RoHS Compliant

Specifications

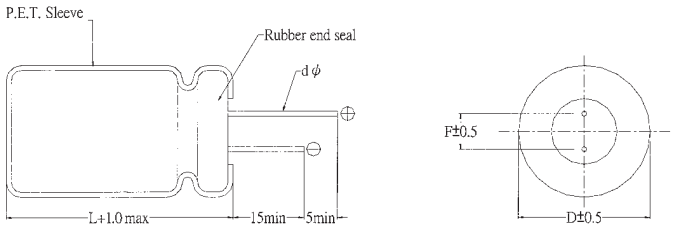
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	4 to 63 VDC
Capacitance Range	0.1 to 470 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 1 minute, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 25 / 22 / 20 / 16 / 14 / 12 / 10 / 9
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃ / Z+20℃: 7 / 4 / 3 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 15 / 8 / 6 / 4 / 4 / 3 / 3 / 3
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Case Size

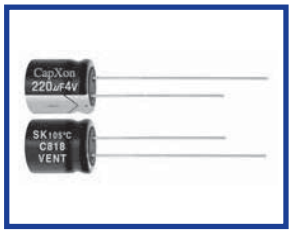
ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7									4x7	17
6.8							4x7	20	4x7	21
10							4x7	30	4x7	30
									5x7	33
15					4x7	28	4x7	32	5x7	38
22	4x7	23	4x7	31	4x7	35	4x7	37	5x7	45
							5x7	42	6.3x7	48
33	4x7	26	4x7	32	4x7	40	4x7	45	5x7	52
			5x7	35	5x7	45	5x7	50	6.3x7	60
47	4x7	35	4x7	40	4x7	47	5x7	61	6.3x7	68
			5x7	47	5x7	51	6.3x7	67	8x7	72
68	5x7	55	5x7	55	5x7	60	6.3x7	72	6.3x7	75
					6.3x7	68				
100	5x7	58	5x7	65	5x7	80	6.3x7	95	8x7	115
			6.3x7	75	6.3x7	90	8x7	105		
220	6.3x7	65	6.3x7	70	6.3x7	105				
			8x7	90	8x7	125				
330	6.3x7	90	8x7	120						
470	8x7	120								

WV / Cap(μ F)	35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple
0.1			4x7	1.5	4x7	1.5
0.15			4x7	1.8	4x7	1.8
0.22			4x7	2.5	4x7	2.5
0.33			4x7	3.5	4x7	3.5
0.47			4x7	5	4x7	6
0.68			4x7	7	4x7	7
1			4x7	10	4x7	12
1.5			4x7	13	4x7	14
2.2			4x7	19	4x7	19
3.3			4x7	24	5x7	25
4.7	4x7	22	4x7	27	5x7	29
			5x7	29	6.3x7	33
6.8	4x7	24	5x7	32	6.3x7	35
	5x7	28	6.3x7	33		
10	4x7	30	5x7	35	6.3x7	40
	5x7	35	6.3x7	38		
15	5x7	38	6.3x7	52	8x7	55
	6.3x7	45				
22	5x7	50	6.3x7	60	8x7	65
	6.3x7	58	8x7	63		
33	6.3x7	60	8x7	78		
	8x7	68				
47	8x7	80				
68	8x7	85				

Ripple Current (mA, rms) at 85℃ 120Hz

SK Series 7 mm Standard 105℃



Features

- ◆ Design for space-saving and high density insertion.
- ◆ Applications: VTR, car radio, car stereos. charger, etc.
- ◆ RoHS Compliant

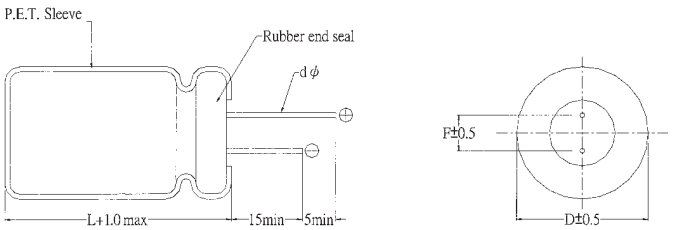
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	4 to 63 VDC
Capacitance Range	0.1 to 470 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 1 minute, whichever is greater measured with rate working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 25 / 22 / 20 / 16 / 14 / 12 / 10 / 9
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃ / Z+20℃: 7 / 4 / 3 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 15 / 8 / 6 / 4 / 4 / 3 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Radial

Case Size

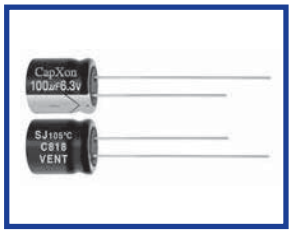
ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7									4x7	17
6.8							4x7	20	4x7	21
10							4x7	30	4x7	30
									5x7	33
15					4x7	28	4x7	32	5x7	38
22	4x7	23	4x7	31	4x7	35	4x7	37	5x7	45
							5x7	42	6.3x7	48
33	4x7	26	4x7	32	4x7	40	4x7	45	5x7	52
			5x7	35	5x7	45	5x7	50	6.3x7	60
47	4x7	35	4x7	40	4x7	47	5x7	61	6.3x7	68
			5x7	47	5x7	51	6.3x7	67	8x7	72
68	5x7	55	5x7	55	5x7	60	6.3x7	72	6.3x7	75
					6.3x7	68				
100	5x7	58	5x7	65	5x7	80	6.3x7	95	8x7	115
			6.3x7	75	6.3x7	90	8x7	105		
220	6.3x7	65	6.3x7	90	6.3x7	105				
			8x7	120	8x7	150				
330	6.3x7	90	8x7	120						
470	8x7	120								

WV / Cap(μ F)	35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple
0.1			4x7	1.5	4x7	1.5
0.15			4x7	1.8	4x7	1.8
0.22			4x7	2.5	4x7	2.5
0.33			4x7	3.5	4x7	3.5
0.47			4x7	5	4x7	6
0.68			4x7	7	4x7	7
1			4x7	10	4x7	12
1.5			4x7	13	4x7	14
2.2			4x7	19	4x7	19
3.3			4x7	24	5x7	25
4.7	4x7	22	4x7	27	5x7	29
			5x7	29	6.3x7	33
6.8	4x7	24	5x7	32	6.3x7	35
	5x7	28	6.3x7	33		
10	4x7	30	5x7	35	6.3x7	40
	5x7	35	6.3x7	38		
15	5x7	38	6.3x7	52	8x7	55
	6.3x7	45				
22	5x7	50	6.3x7	60	8x7	65
	6.3x7	58	8x7	63		
33	6.3x7	54	8x7	78		
	8x7	68				
47	8x7	80				
68	8x7	85				

Ripple Current (mA, rms) at 105℃ 120Hz

SJ Series 7 mm 105℃ Long Life



Features

- ◆ Design for space-saving and high density insertion.
- ◆ Applications: VTR, car radio, car stereos, charger, etc.
- ◆ RoHS Compliant

Specifications

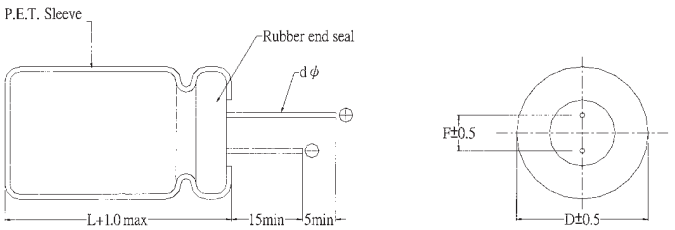
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 63 VDC
Capacitance Range	0.1 to 220 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 1 minute, whichever is greater measured with rate working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 24 / 20 / 16 / 14 / 12 / 10 / 9
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 4 / 3 / 3 / 3
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦220	0.8	1	1.23	1.36	1.48	1.53

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Case Size

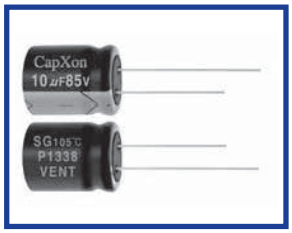
ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7							4x7	17
6.8					4x7	19	4x7	19
10					4x7	28	4x7	28
							5x7	33
15			4x7	26	4x7	30	5x7	35
22	4x7	28	4x7	32	4x7	35	5x7	43
					5x7	42	6.3x7	45
33	4x7	32	5x7	48	5x7	50	6.3x7	62
	5x7	35						
47	5x7	47	5x7	51	6.3x7	67	8x7	75
68	5x7	50	6.3x7	68	6.3x7	70	8x7	80
					8x7	78		
100	6.3x7	75	6.3x7	80	8x7	110	8x7	115
			8x7	95				
220	8x7	92	8x7	130				

WV / Cap(μ F)	35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple
0.1			4x7	1.5	4x7	1.5
0.15			4x7	1.8	4x7	1.8
0.22			4x7	2.5	4x7	2.5
0.33			4x7	3.5	4x7	3.5
0.47			4x7	5	4x7	6
0.68			4x7	7	4x7	7
1			4x7	10	4x7	12
1.5			4x7	13	4x7	14
2.2			4x7	20	4x7	20
3.3			4x7	26	5x7	28
4.7	4x7	22	4x7	27	5x7	29
			5x7	29	6.3x7	33
6.8	4x7	24	5x7	32	6.3x7	35
	5x7	28	6.3x7	33		
10	5x7	35	6.3x7	38	6.3x7	40
15	5x7	38	6.3x7	52	8x7	55
	6.3x7	45				
22	6.3x7	60	8x7	63	8x7	65
33	6.3x7	50	8x7	78		
	8x7	68				
47	8x7	80				
68	8x7	85				

Ripple Current (mA, rms) at 105℃ 120Hz

SG Series 7~9mm Long life



Features

- ◆ Operating temperature -40~105℃.
- ◆ 105℃ 4000Hours assured.
- ◆ 7~9mm Height

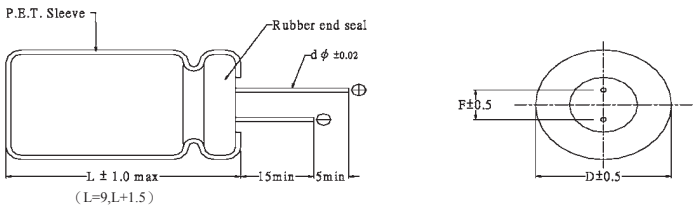
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.1 to 470μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minute with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max.: 24 / 20 / 17 / 15 / 13 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 3 / 3 / 3
Endurance	Test condition Duration time :4000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : within±30% of the initial measured value Dissipation factor : ≦300% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	1K	50-100K
Multiplier	0.65	1.00	1.35	1.5

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8	10
F	1.5	2.0	2.5	3.5	5.0
dφ	0.45		0.50	0.50	0.6

Radial

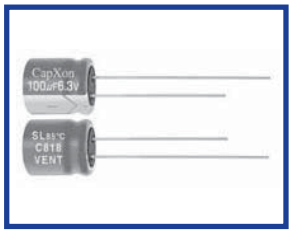
Case Size

ϕ DxL(mm)

100WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x7	1.5
0.22											4x7	2.5
0.33											4x7	3.5
0.47											4x7	5
1											4x7	12
2.2											4x7	21
3.3											4x7	26
4.7											5x7	31
10					4x7 5x7	29 29	5x7	36	4x7	26	6.3x7	46
22	4x7	35	5x7	42	5x7	46	6.3x7	52	6.3x7	60	8x7	67
33	5x7	43	5x7	50	6.3x7	58	6.3x7	65	8x7	75	8x9	89
47	5x7	50	6.3x7	60	6.3x7	70	6.3x7 8x7	70 80	8x9	89	8x9	89
100	6.3x7	76	8x7	96	6.3x7 8x7	95 110	8x7 8x9	100 145	10x9	165	10x9	165
150							8x9	145				
220	8x7	131	8x9	145	8x9	145	10x9	165				
330	8x9	145	8x9	145	8x9 10x9	145 165						
470	8x9	145	8x9 10x9	145 165	10x9	165						

Ripple Current(mA,rms) at 105℃ 120HZ

SL Series 7 mm, Low Leakage Current 85℃



Features

- ◆ Low leakage current, height 7 mm
- ◆ RoHS Compliant

Specifications

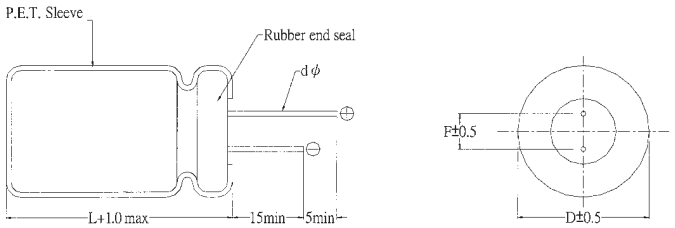
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.1 to 220 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.002 CV or 0.4 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 22 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-40℃ / Z+20℃: 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦220	0.8	1	1.23	1.36	1.48	1.53

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

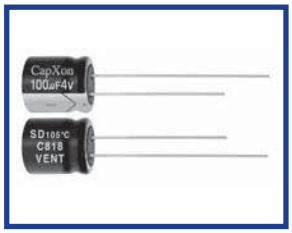
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x7	0.8
0.22											4x7	2.0
0.33											4x7	3.1
0.47											4x7	4.5
1											4x7	8.0
2.2											4x7	16
3.3											4x7	21
4.7									4x7	21	5x7	25
10					4x7	25	5x7	30	5x7	33	6.3x7	40
22	4x7	31	5x7	35	5x7	40	6.3x7	48	6.3x7	52	8x7	58
33	5x7	40	5x7	44	6.3x7	53	6.3x7	59	8x7	65		
47	5x7	48	6.3x7	55	6.3x7	60	8x7	73				
100	6.3x7	70	8x7	90	8x7	95						
220	8x7	110										

Ripple Current (mA, rms) at 85℃ 120Hz

SD Series 7 mm, Low Leakage Current 105℃



Features

- ◆ 105℃ Low leakage current, height 7 mm
- ◆ RoHS Compliant

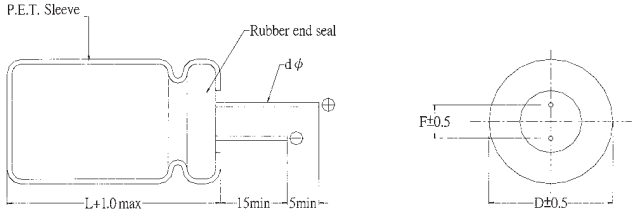
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	4 to 63 VDC
Capacitance Range	0.1 to 100 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.002 CV or 0.4 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 25 / 22 / 20 / 16 / 14 / 12 / 10 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃／Z+20℃: 6 / 4 / 3 / 3 / 2 / 2 / 2 / 2 Z-40℃／Z+20℃: 12 / 10 / 6 / 6 / 4 / 4 / 4 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value (4V : ≦ ±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF) ＼Frequency(Hz)	50(60)	120	400	1K	≧10K
0.1~10	0.65	1.0	1.20	1.30	1.50
10~100	0.8	1.0	1.10	1.15	1.20

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.50	

Radial

Case Size

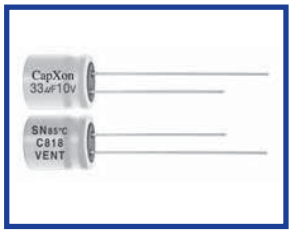
ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1								
0.22								
0.33								
0.47								
1.0								
2.2								
3.3								
4.7								
10							4x7	27
22					4x7	36	4x7	40
33	4x7	33	4x7	41	5x7	44	5x7	50
47	4x7	39	5x7	49	6.3x7	54	6.3x7	62
100	6.3x7	59	6.3x7	75	8x7	90		

WV / Cap(μ F)	25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1					4x7	3	4x7	3
0.22					4x7	5	4x7	5
0.33					4x7	6	4x7	6
0.47					4x7	7	4x7	7
1.0					4x7	10	4x7	10
2.2					4x7	16	5x7	19
3.3			4x7	18	4x7	20	6.3x7	29
4.7	4x7	19	5x7	21	6.3x7	24	6.3x7	36
10	5x7	29	5x7	32	8x7	40		
22	6.3x7	44	6.3x7	49				
33	6.3x7	55	8x7	67				
47	8x7	74						
100								

Ripple Current (mA, rms) at 105℃ 120Hz

SN Series 7 mm Non-polar 85℃



Features

- Non-polarized with 7 mm height for crossover networks of high-pitched, mean and low-pitched sounds in high-fiedelity sound systems.
- The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- RoHS Compliant

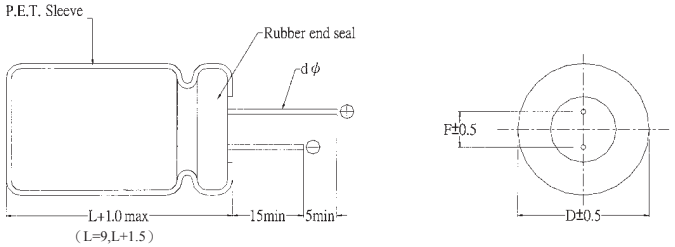
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.1 to 220 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.05 CV or 10 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 22 / 20 / 16 / 16 / 14 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃／Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃／Z+20℃: 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage to each polarity for 500 Hrs After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦220	0.8	1	1.23	1.36	1.48	1.53

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Radial

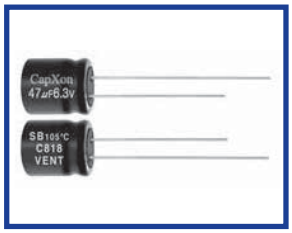
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x7	1.0
0.22											4x7	2.3
0.33											4x7	3.5
0.47											4x7	5.0
1											4x7	10
2.2									4x7	13	4x7	14
											5x7	16
3.3							4x7	14	4 x7	15	4x7	18
									5x7	16	5x7	20
4.7					4x7	18	4x7	18	5x7	22	6.3x7	27
							5x7	21				
10	4x7	23	4x7	24	4x7	25	6.3x7	35	6.3x7	37	8x7	44
					5x7	30						
22	5x7	30	5x7	38	6.3x7	51	6.3x7	53	8x7	58	8x7	60
33	5x7	40	6.3x7	55	6.3x7	60	8x7	70	8x7	73		
47	6.3x7	56	6.3x7	65	6.3x7	73	8x7	80				
100	8x7	92	8x7	105	8x7	120						
220	8x7	135										

Ripple Current (mA, rms) at 85℃ 120Hz

SB Series 7 mm Non-polar 105℃



Features

- Non-polarized with 7mm height for crossover network of high-pitched, mean and low-pitched sounds in high-frequency sound systems.
- The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- RoHS Compliant

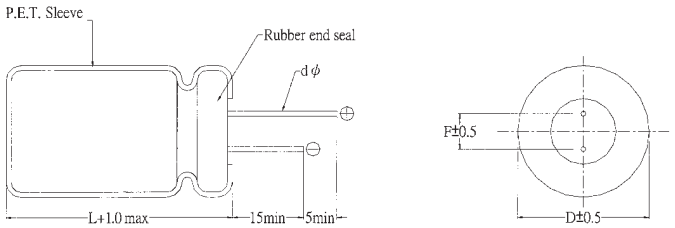
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.1 to 100 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.05 CV or 10 (μA) After 2 minutes, whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F. (%)max: 24 / 20 / 16 / 16 / 14 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃／Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃／Z+20℃: 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage to each polarity for 500 Hrs After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦220	0.8	1	1.23	1.36	1.48	1.53

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Radial

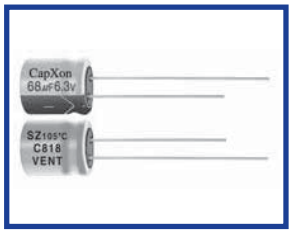
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x7	1.0
0.22											4x7	2.3
0.33											4x7	3.5
0.47											4x7	5.0
1											4x7	10
2.2									4x7	13	5x7	16
3.3							4x7	14	5x7	18	5x7	20
4.7					4x7	18	5x7	19	5x7	22	6.3x7	27
10	4x7	23	4x7	24	5x7	30	6.3x7	35	6.3x7	37	8x7	44
22	5x7	30	5x7	38	6.3x7	51	6.3x7	53	8x7	58		
33	5x7	40	6.3x7	52	6.3x7	58	8x7	70	8x7	70		
47	6.3x7	56	8x7	65	8x7	73	8x7	80				
100	8x7	92	8x7	105	8x7	120						

Ripple Current (mA, rms) at 105℃ 120Hz

SZ Series 7-9 mm Low Impedance



Features

- ◆ Operating temperature range -55 to +105℃
- ◆ 105℃, 1000 hours assured
- ◆ RoHS Compliant

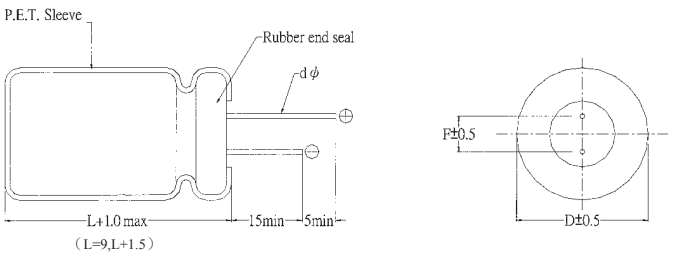
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55 to +105℃
Rated Voltage Range	6.3 to 35 VDC
Capacitance Range	6.8 to 330 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.01 CV or 3 (μA) After 2 minutes, whichever is greater measured with rate working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 D.F. (%)max: 18 / 16 / 14 / 12 / 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(VDC): 6.3 / 10 / 16 / 25 / 35 Z-25℃／Z+20℃: 2 / 2 / 2 / 2 / 2 Z-55℃／Z+20℃: 3 / 3 / 3 / 3 / 3
Endurance	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.91	1
10＜CAP≦220	0.52	0.65	0.80	0.89	0.97	1
100＜CAP	0.58	0.72	0.84	0.90	0.98	1

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Radial

Case Size

ϕ DxL(mm)

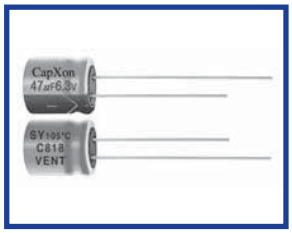
WV / Cap(μ F)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
22				4x7	70	3.30	5x7	115	1.7
33	5x7	110	1.70	5x7	110	1.70	6.3x7	160	0.8
47	5x7	110	1.70	5x7	160	0.80	6.3x7	160	0.8
68	6.3x7	160	0.80	6.3x7	160	0.80	8x7	200	0.5
100	6.3x7	160	0.80	6.3x7	200	0.50	8x7	200	0.45
120	6.3x7	165	0.70	6.3x7	205	0.48	8x7	350	0.35
150	6.3x7	178	0.60	8x7	230	0.45	8x7	370	0.32
180	8x7	190	0.58	8x7	250	0.45	8x7	400	0.30
220	8x7	200	0.50	8x7	280	0.35	8x7	430	0.26
330	8x7	350	0.35	8x9	320	0.30	8x9	500	0.22
470	8x9	400	0.30	10x9	430	0.22			

WV / Cap(μ F)	25			35		
	Size	Ripple	Impedance	Size	Ripple	Impedance
6.8				4x7	70	3.3
10	4x7	70	3.0	5x7	110	1.7
22	5x7	110	1.70	6.3x7	160	0.8
33	6.3x7	160	0.80	8x7	200	0.5
47	8x7	200	0.50	8x7	245	0.45
68	8x7	200	0.50	8x7	280	0.42
100	8x7	250	0.35			
150	8x7	340	0.40			
180	8x9	450	0.25			
220	8x9	600	0.22			
330	10x9	750	0.15			

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

SY Series 7mm Low Impedance Long Life



Features

- ◆ Operating temperature -55~105℃.
- ◆ 105℃ 2000Hours assured.
- ◆ RoHS Compliant

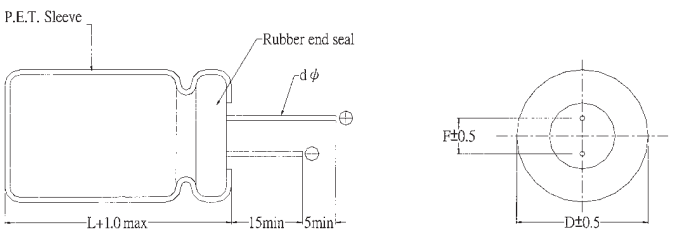
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55 to +105℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	1~330μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minute with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max.: 18 / 16 / 14 / 12 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 2 / 2 / 2 / 2 / 2 / 2 Z-55℃ / Z+20℃: 3 / 3 / 3 / 3 / 3 / 3
Endurance	Test condition Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : within±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50-100K
1≦CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP≦100	0.52	0.65	0.80	0.89	0.97	1
100＜CAP	0.58	0.72	0.84	0.90	0.98	1

Diagram of Dimensions:(unit:mm)



Dφ	4	5	6.3	8
F	1.5±0.5	2.0±0.5	2.5±0.5	3.5±0.5
dφ	0.45		0.5	

Radial

Case Size

ϕ DxL(mm)

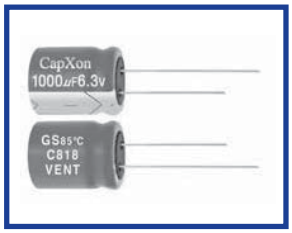
WV / Cap(μF)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
10							4x7	60	3.5
15							4x7	75	3.0
22				4x7	63	3.63	5x7	90	2
33	5x7	90	1.95	5x7	95	1.9	6.3x7	120	1.4
47	6.3x7	99	1.87	5x7	120	1.3	6.3x7	140	0.9
68	6.3x7	125	1	6.3x7	144	0.88	8x7	160	0.65
100	6.3x7	144	0.82	6.3x7	180	0.55	8x7	180	0.49
120	6.3x7	148	0.77	6.3x7	185	0.52	8x7	315	0.93
150	6.3x7	160	0.66	8x7	207	0.5	8x7	333	0.95
180	8x7	171	0.64	8x7	225	0.49	8x7	360	0.33
220	8x7	180	0.55	8x7	252	0.4	8x7	387	0.29
330	8x7	315	0.39						

WV / Cap(μF)	25			35			50		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
1							4x7	60	3.5
2.2							4x7	60	3.5
3.3							4x7	60	3.5
4.7							4x7	60	3.5
6.8				4x7	63	3.63	5x7	80	2.2
10	4x7	60	3.5	5x7	99	3.2	6.3x7	135	0.92
22	5x7	99	1.87	6.3x7	140	0.9			
33	6.3x7	144	0.88	8x7	180	0.55			
47	8x7	160	0.7	8x7	220	0.5			
68	8x7	180	0.55						
100	8x7	225	0.39						
150	8x7	306	0.35						

Ripple Current(mA,rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

GS(GR) Series General Purpose 85℃



Features

- ◆ Wide CV value range.
- ◆ Endurance 2000 hrs at 85℃.
- ◆ Safety vent construction design.
- ◆ RoHS Compliant

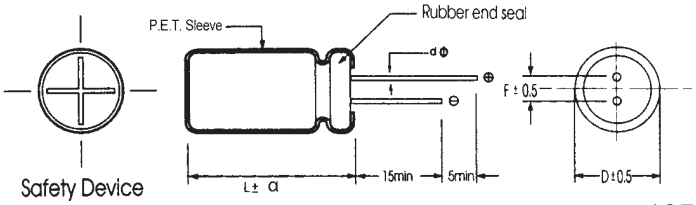
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated Voltage Range	6.3 to 100 VDC	160 to 450 VDC
Capacitance Range	0.1 to 33000 μF	0.47 to 470 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA)	I≦0.03 CV (μA)
	After 1 minute whichever is greater measures with rated working voltage applied.	
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 D.F. (%)max. 22 19 16 14 12 10 9 8 Working Voltage(VDC) 160 200 250 350 400 450 D.F. (%)max. 12 12 12 15 15 17 For capacitance ＞1000 μF, add 2% per another 1000 μF.	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 Z-25℃／Z+20℃ 4 3 2 2 2 2 2 2 Z-40℃／Z+20℃ 8 6 4 3 3 3 3 3 Working Voltage(VDC) 160 200 250 350 400 450 Z-25℃／Z+20℃ 2 2 3 5 15 15 For Capacitance ＞1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃	
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage Current :≦ The initial specified value	
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



DΦ	5	6.3	8		10	13	16	18	22
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5	10
dΦ	0.5		L＜20	L≧20	0.6		0.8		
			0.5	0.6					

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Radial

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7							5x11	34	5x11	44
10					5x11	44	5x11	50	5x11	66
22			5x11	66	5x11	83	5x11	94	5x11	108
33	5x11	72	5x11	88	5x11	84	5x11	105	5x11	121
47	5x11	88	5x11	105	5x11	132	5x11	132	5x11	143
									6.3x11	154
68	5x11	110	5x11	132	5x11	149	6.3x11	176	6.3x11	198
100	5x11	143	5x11	198	5x11	176	6.3x11	209	6.3x11	231
					6.3x11	204			8x11.5	253
120	5x11	165	5x11	209	6.3x11	231	6.3x11	253	8x11.5	275
150	5x11	198	5x11	231	6.3x11	253	6.3x11	275	8x11.5	308
180	5x11	220	6.3x11	253	6.3x11	275	6.3x11	280	8x11.5	352
							8x11.5	319		
220	5x11	242	6.3x11	294	6.3x11	308	6.3x11	310	8x11.5	385
	6.3x11	264			8x11.5	352	8x11.5	363	10x12.5	407
330	6.3x11	330	6.3x11	363	8x11.5	407	8x11.5	451	10x12.5	528
							10x12.5	484	10x16	539
470	6.3x11	385	6.3x11	418	8x11.5	517	8x11.5	561	10x16	693
	8x11.5	418	8x11.5	440			10x12.5	594	10x20	748
560	8x11.5	473	8x11.5	506	10x12.5	572	10x16	693	10x20	847
680	8x11.5	539	8x11.5	572	8x16	640	10x16	792	10x20	891
					10x12.5	682	10x20	825		
820	8x11.5	605	10x12.5	671	10x16	803	10x20	891	13x20	1045
1000	8x11.5	649	8x16	725	10x16	869	10x20	1050	13x20	1265
	10x12.5	715	8x20	803						
			10x12.5	726						
1200	10x12.5	814	10x16	902	10x16	979	13x20	1155	13x20	1375
1500	10x16	935	10x16	1001	10x20	1100	13x20	1353	13x25	1570
1800	10x16	1035	10x20	1089	13x20	1298	13x20	1496	16x25	1749
2200	10x20	1135	10x20	1210	13x20	1485	13x25	1705	16x25	1870
			13x20	1330					16x31.5	1980
2700	10x20	1353	13x20	1419	13x20	1716	16x25	1804	16x31.5	2178
3300	10x20	1430	13x20	1540	13x20	1750	16x25	1870	16x31.5	2365
	13x20	1485			13x25	1870	16x31.5	2145	16x35.5	2552
3900	13x20	1529	13x20	1760	16x25	2002	16x31.5	2343	18x31.5	2640
4700	13x20	1672	13x25	1980	16x25	2310	16x31.5	2640	18x35.5	2860
	13x25	1870								
5600	13x25	2002	16x25	2189	16x31.5	2453	18x31.5	2816	18x41	2915
6800	16x25	2310	16x25	2475	16x31.5	2805	18x35.5	2970	22x41	3630
8200	16x25	2332	16x31.5	2541	16x35.5	2893	18x35.5	2981		
10000	16x31.5	2530	16x35.5	2640	18x35.5	2970	22x41	3960		
			18x35.5	2915	18x41	3190				
12000	16x35.5	2783	18x35.5	3025	18x35.5	3058				
					18x41	3212				
15000	16x35.5	2948	18x35.5	3310	22x41	3905				
	18x35.5	3168								
18000	18x35.5	3300	18x41	3410						
22000	18x41	3575	22x41	4092						
33000	22x41	4290	22x51	4620						

Ripple Current (mA, rms) at 85℃ 120Hz

CapXon

GS(GR) Series

ϕ DxL(mm)

WV / Cap(μ F)	50		63		100		160		200	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1	5x11	3.3	5x11	4	5x11	4.5				
0.22	5x11	3.3	5x11	4	5x11	6				
0.33	5x11	5.5	5x11	6	5x11	10				
0.47	5x11	7.5	5x11	8	5x11	14	5x11	12	5x11	12
1	5x11	17	5x11	17	5x11	27	5x11	17	6.3x11	17
2.2	5x11	28	5x11	31	5x11	40	6.3x11	30	6.3x11	30
3.3	5x11	39	5x11	39	5x11	48	6.3x11	36	6.3x11	36
4.7	5x11	46	5x11	50	5x11	58	6.3x11	40	8x11.5	51
							8x11.5	48		
10	5x11	72	5x11	77	5x11	85	8x11.5	80	10x12.5	83
					6.3x11	92			10x16	88
22	5x11	110	6.3x11	127	6.3x11	157	10x12.5	135	10x20	135
					8x11.5	164				
33	5x11	132	6.3x11	149	8x11.5	206	10x16	180	13x20	205
	6.3x11	138	8x11.5	160	10x12.5	218				
47	6.3x11	165	6.3x11	198	10x12.5	278	10x20	230	13x20	250
			8x11.5	209	10x16	303			13x25	280
68	8x11.5	220	8x11.5	253	10x16	387	13x20	360	13x25	370
100	8x11.5	286	10x12.5	330	10x20	472	13x25	430	16x25	460
120	8x11.5	319	10x16	396	10x20	532	16x25	530	16x25	550
150	10x12.5	363	10x16	462	13x20	629	16x25	560	16x31.5	580
180	10x12.5	418	10x16	528	13x20	667	16x31.5	650	16x31.5	660
220	10x12.5	468	10x16	550	13x25	740	16x31.5	850	18x31.5	750
	10x16	484	10x20	583	16x25	872	16x35.5	890	18x35.5	800
330	10x16	649	10x20	759	13x25	920	18x31.5	890	18x35.5	940
	10x20	671	13x20	781	16x25	1040	18x35.5	920	18x41	1000
470	10x20	828	13x20	968	16x25	1210	18x35.5	1180	18x41	1330
	13x20	858	13x25	1023	16x31.5	1330	18x41	1250		
560	13x20	902	13x25	1056	16x35.5	1465	18x45	1320		
			16x25	1089						
680	13x20	1056	16x25	1265	16x35.5	1634				
820	13x25	1287	16x25	1430	18x35.5	1815				
1000	13x25	1485	16x25	1540	18x41	1940				
	16x25	1540	16x31.5	1705						
1200	16x25	1617	16x31.5	1837						
1500	16x31.5	1848	16x35.5	2090						
1800	16x31.5	2112	16x35.5	2255						
2200	16x35.5	2310	18x35.5	2475						
			18x41	2750						
2700	18x31.5	2420	22x41	2860						
3300	18x35.5	2750	22x41	3080						
3900	18x41	2871								
4700	22x41	3355								

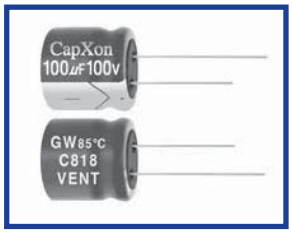
Ripple Current (mA, rms) at 85℃ 120Hz

ϕ DxL(mm)

WV / Cap(μ F)	250		350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5x11	12	6.3x11	15	6.3x11	12	6.3x11	12
					8x11.5	12		
1	6.3x11	17	6.3x11	22	6.3x11	20	8x11.5	22
					8x11.5	22		
2.2	6.3x11	20	8x11.5	30	8x11.5	32	8x11.5	32
	8x11.5	33	10x12.5	32	10x12.5	35	10x12.5	35
3.3	8x11.5	38	8x11.5	46	8x11.5	45	8x11.5	35
							10x12.5	37
	10x12.5	43	10x12.5	51	10x12.5	53	10x16	40
4.7	8x11.5	48	8x11.5	55	8x11.5	55	10x12.5	50
			10x12.5	63	10x12.5	66		
	10x12.5	51	10x16	66	10x16	70	10x16	56
10	10x12.5	90	10x16	115	10x16	100	10x20	90
					10x20	115	13x20	105
			10x20	125	13x20	120	13x25	110
22	10x20	135	13x20	180	13x20	190	13x20	140
							13x25	150
	13x20	165			13x25	200	16x25	165
33	13x20	210	13x20	225	13x25	230	16x25	190
	13x25	220	13x25	250	16x25	250	16x31.5	210
47	13x20	240	16x25	290	16x25	270	16x31.5	260
	13x25	260						
	13x25	260			16x31.5	290	16x35.5	280
68	13x25	340	16x31.5	400	16x35.5	410	18x31.5	370
	16x25	390			18x25	380	18x35.5	390
					18x31.5	420		
100	16x25	410	18x31.5	430	18x31.5	440	18x41	420
	16x31.5	450			18x35.5	450		
120	16x31.5	560	18x35.5	550	18x41	520	18x45	510
150	18x31.5	600	18x41	570				
180	18x31.5	680						

Ripple Current (mA, rms) at 85℃ 120Hz

GW Series 9-21 mm height Low Profile 85℃



Features

- ◆ Miniaturized low profile.
- ◆ Height 9mm-25mm max.
- ◆ Safety vent construction design.
- ◆ RoHS Compliant

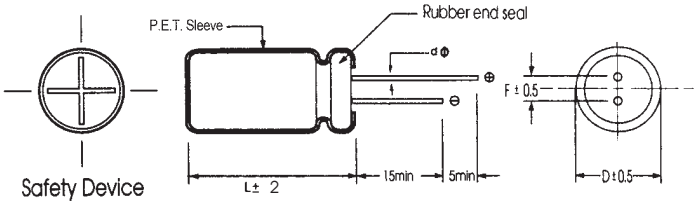
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated Voltage Range	6.3 to 100 VDC	160 to 450 VDC
Capacitance Range	2.2 to 10000 μF	2.2 to 220 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.	I≦0.04 CV+100 (μA) After 2 minutes with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 D.F. (%)max. 24 22 20 14 12 12 10 10 Working Voltage(VDC) 160 200 250 350 400 450 D.F. (%)max. 15 15 15 20 20 20 For capacitance ＞1000 μF, add 2% per another 1000 μF.	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 Z-25℃／Z+20℃ 6 4 4 3 2 2 2 2 Z-40℃／Z+20℃ 12 10 8 6 4 3 3 3 Working Voltage(VDC) 160 200 250 350 400 450 Z-25℃／Z+20℃ 2 2 3 5 5 7 For Capacitance ＞1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃	
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value	
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	≧10K
2.2~47 μF	0.8	1	1.20	1.30	1.50
100~1000 μF	0.8	1	1.10	1.15	1.20
2200~10000 μF	0.8	1	1.05	1.10	1.15

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5			0.6		0.8	

Radial

Case Size

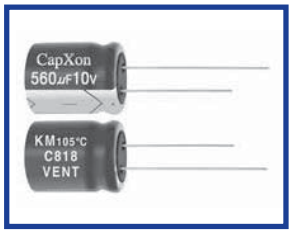
ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
2.2											5x9	23	5x9	26
3.3											5x9	30	5x9	31
4.7											5x9	35	5x9	36
6.8											5x9	50	5x9	54
10											5x9	64	6.3x9	68
22											5x9	86	6.3x9	102
33									5x9	95	6.3x9	115	8x9	135
47							5x9	105	6.3x9	120	6.3x9	135	10x9	170
68					5x9	120	6.3x9	130	6.3x9	140	8x9	155	10x9	200
100	5x9	128	5x9	134	6.3x9	160	6.3x9	175	8x9	220	10x9	230	10x16	340
150	5x9	150	6.3x9	180	6.3x9	260	8x9	280	8x9	300	10x9	320	13x13	384
220	6.3x9	180	6.3x9	210	8x9	290	8x9	310	10x9	335	10x16	380	13x13	490
											13x13	400		
330	6.3x9	247	8x9	300	8x9	340	10x9	400	10x12.5	475	13x13	530	16x16	610
					10x9	355					13x16	550		
470	8x9	360	8x9	360	10x9	410	10x12.5	525	13x13	590	13x16	720	16x16	840
									13x16	650	16x16	750		
680	10x9	420	10x9	540	10x12.5	560	10x16	700	13x16	750	16x16	805	16x21	950
							13x13	730						
1000	10x9	530	10x12.5	625	13x13	750	13x16	1050	16x16	1230	16x21	1450		
2200	13x16	1050	13x16	1080	16x16	1150	16x21	1350	18x21	1600				
							18x16	1300						
3300	16x16	1200	16x16	1350	16x16	1500	18x21	1600						
					18x16	1460								
4700	16x16	1500	16x21	1550	18x21	1650								
6800	16x21	1550	18x21	1850										
	18x16	1600												
10000	18x21	2000												

WV / Cap(μ F)	100		160		200		250		350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1.5													8x9	30
2.2	5x9	27									8x9	38	10x9	46
3.3	5x9	33							8x9	45	10x9	50	10x9	55
4.7	6.3x9	41	8x9	50	8x9	55	8x9	60	10x9	78	10x9	90	10x12.5	105
							10x9	69						
6.8	6.3x9	59	8x9	75	8x9	78	10x9	82	10x16	105	13x16	125	13x16	135
10	8x9	78	10x9	87	10x9	92	10x9	98	13x16	145	13x16	160	16x16	200
							10x16	120			16x16	190		
22	8x9	107	10x16	135	13x16	150	13x16	165	16x16	190	16x21	230	16x21	250
							16x16	210			18x16	225		
33	10x9	155	13x16	175	13x16	190	16x16	230	16x21	270	18x21	300	18x21	320
					16x16	200	18x16	260	18x16	335				
47	10x16	220	13x16	285	16x16	320	16x21	340	18x21	360	18x21	385		
			16x16	325			18x16	380						
68	10x16	261	16x16	340	16x16	360	16x21	420						
	13x13	270			18x16	390								
100	13x13	410	16x21	515	16x21	575	18x21	610						
150	16x16	579	18x21	620										
220	16x21	668												
330	16x25	864												
470														

Ripple Current (mA, rms) at 85℃ 120Hz

KM Series Standard 105℃



Features

- ◆ Used in communication equipments, switching power supply, etc.
- ◆ Safety vent construction design.
- ◆ RoHS Compliant

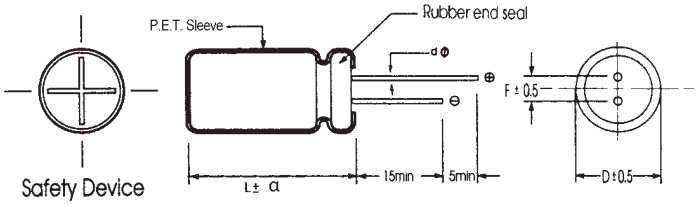
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	6.3 to 100 VDC	160 to 500 VDC
Capacitance Range	0.1 to 22000 μF	0.47 to 470 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 1 minute whichever is greater measured with rated working voltage applied.	I≦0.03 CV (μA) After 1 minute with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 D.F. (%)max. 22 17 16 14 12 10 9 8 Working Voltage(VDC) 160 200 250 350 400 420 450 500 D.F. (%)max. 12 12 12 15 15 17 17 22 For capacitance ＞1000 φF, add 2% per another 1000 μF.	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 Z-25℃／Z+20℃ 4 3 2 2 2 2 2 2 Z-40℃／Z+20℃ 8 6 4 3 3 3 3 3 Working Voltage(VDC) 160 200 250 350 400 420 450 500 Z-25℃／Z+20℃ 2 2 3 5 6 6 6 6 For Capacitance ＞1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃	
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value	
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18	20	22
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5	10	10
dφ	0.5		L＜20 0.5	L≧20 0.6	0.6		0.8			

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7							5x11	26	5x11	28
6.8							5x11	32	5x11	36
10					5x11	35	5x11	38	5x11	46
22			5x11	45	5x11	54	5x11	58	5x11	61
33	5x11	54	5x11	60	5x11	64	5x11	69	5x11	75
47	5x11	65	5x11	70	5x11	100	5x11	105	5x11	110
68	5x11	75	5x11	80	5x11	105	6.3x11	120	6.3x11	140
100	5x11	96	5x11	105	5x11	115	6.3x11	145	6.3x11	160
					6.3x11	130			8x11.5	175
120	5x11	110	5x11	110	6.3x11	155	6.3x11	175	8x11.5	185
			6.3x11	120						
150	5x11	120	5x11	120	6.3x11	170	6.3x11	180	8x11.5	215
	6.3x11	130	6.3x11	145			8x11.5	200		
180	6.3x11	140	6.3x11	160	6.3x11	190	8x11.5	210	8x11.5	225
									10x12.5	265
220	6.3x11	160	6.3x11	175	6.3x11	215	8x11.5	235	8x11.5	255
									10x12.5	300
330	6.3x11	195	6.3x11	205	6.3x11	225	8x11.5	310	10x12.5	400
			8x11.5	255	8x11.5	265	10x12.5	335		
470	6.3x11	220	6.3x11	235	8x11.5	370	8x11.5	410	10x16	520
	8x11.5	270	8x11.5	290	8x16	400	10x12.5	440		
560	8x11.5	310	8x11.5	330			10x16	460	10x20	540
			10x12.5	340	10x12.5	410				
680	8x11.5	360	8x11.5	365	8x16	470			10x20	560
			8x16	410	10x12.5	480	10x16	520	13x20	650
820	8x11.5	390	10x12.5	480	10x16	550	10x20	640	13x20	760
1000	10x12.5	430	10x12.5	520	10x12.5	540	10x20	710	13x20	830
					10x16	600				
1200	10x12.5	550	10x16	630	10x20	700	13x20	810	13x20	900
									13x25	930
1500	10x16	625	8x20	715	10x20	820	13x20	900	13x25	960
			10x16	770						
1800	10x16	710	10x20	820	13x20	920	13x25	1050	16x25	1150
2200	10x16	750	10x20	860	13x20	1000	13x25	1200	16x25	1290
	10x20	775							16x31.5	1350
2700	10x20	850	10x25	880	13x20	1080	16x25	1320	16x31.5	1480
			13x20	920						
3300	13x20	960	13x20	1100	13x25	1200	16x25	1460	16x35.5	1650
3900	13x20	1000	13x20	1280	16x25	1490	16x31.5	1670	18x31.5	1820
4700	13x20	1150	13x25	1350	16x25	1600	16x35.5	1780	18x35.5	1900
5600	13x25	1300	16x25	1490	16x31.5	1720	16x35.5	1890	18x35.5	2000
6800	13x25	1480	16x25	1670	16x31.5	1900	18x35.5	2050		
8200	16x25	1520	16x31.5	1840	16x35.5	2020	18x35.5	2090		
10000	16x25	1680	16x35.5	1900	18x35.5	2060				
12000	16x31.5	1750	16x35.5	2050	18x35.5	2150				
15000	16x35.5	2075	18x35.5	2180						
18000	18x31.5	2150	18x35.5	2205						
22000	18x41	2300								

Ripple Current (mA, rms) at 105℃ 120Hz

CapXon

KM Series

ϕ DxL(mm)

WV / Cap(μF)	50		63		100		160		200	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1	5x11	1.3	5x11	1.3	5x11	1.9				
0.22	5x11	2.9	5x11	2.9	5x11	3.4				
0.33	5x11	4	5x11	4.5	5x11	5				
0.47	5x11	7	5x11	7	5x11	10	5x11	11	5x11	12
1	5x11	13	5x11	13	5x11	15	5x11	17	6.3x11	17
							6.3x11	19		
2.2	5x11	20	5x11	20	5x11	21	6.3x11	25	6.3x11	25
3.3	5x11	26	5x11	28	5x11	30	6.3x11	32	6.3x11	33
									8x11.5	35
4.7	5x11	32	5x11	32	5x11	35	6.3x11	38	6.3x11	42
							8x11.5	42	8x11.5	50
6.8	5x11	40	5x11	40	6.3x11	47	8x11.5	56	8x11.5	60
									10x12.5	63
10	5x11	48	5x11	42	6.3x11	56	8x11.5	63	8x11.5	78
			6.3x11	48	8x11.5	60	10x12.5	75	10x12.5	85
22	5x11	60	6.3x11	82	6.3x11	75	10x12.5	95	10x16	125
							10x16	105		
	6.3x11	70			8x11.5	90	10x20	120	10x20	130
33	5x11	75	6.3x11	100	8x11.5	140	10x16	155	10x16	160
									10x20	180
	6.3x11	90			10x12.5	155	10x20	170	13x20	190
47	6.3x11	115	6.3x11	125	8x16	165	10x20	180	13x20	220
			8x11.5	140	10x12.5	170	13x20	210		
68	6.3x11	130	8x11.5	155	10x16	240	13x20	260	13x20	270
	8x11.5	155	10x12.5	185			13x25	280	13x25	300
100	8x11.5	200	10x12.5	230	10x20	280	13x25	310	13x25	320
							16x25	330	16x25	345
120	8x16	220	10x16	255	10x20	295	13x25	320	16x25	360
	10x12.5	225					16x25	350	16x31.5	390
150	10x12.5	245	10x16	270	13x20	340	16x25	470	16x25	440
					13x25	360			16x31.5	480
180	10x12.5	260	10x16	310	13x20	410	16x25	550	16x31.5	550
	10x16	280			13x25	480			16x35.5	560
220	10x12.5	345	10x16	375	13x25	520	16x31.5	560	16x35.5	670
	10x16	360	10x20	400			16x35.5	580	18x31.5	690
330	10x16	450	13x20	580	16x25	690	18x31.5	660	18x35.5	750
	10x20	470					18x35.5	700	18x41	810
470	10x20	600	13x20	690	16x25	820	18x35.5	810	18x41	840
	13x20	650			16x31.5	860	18x41	860	22x41	925
560	13x20	660	13x25	770	16x35.5	900			18x51	940
680	13x20	700	16x25	880	16x35.5	920				
	13x25	770			18x31.5	950				
820	13x25	850	16x25	920	18x35.5	1020				
1000	13x25	890	16x31.5	1185	18x41	1200				
	16x25	1000								
1200	16x25	1150	16x35.5	1200						
1500	16x31.5	1300	18x31.5	1350						
1800	16x35.5	1480								
2200	16x35.5	1530								
2700	18x35.5	1590								
3300	18x35.5	1750								

Ripple Current (mA, rms) at 105℃ 120Hz

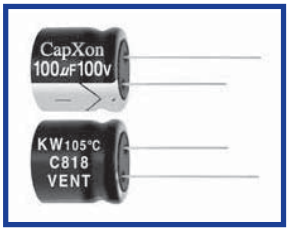
CapXon

KM Series

ϕ DxL(mm)

WV / Cap(μF)	250		350		400		420		450		500	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5x11	8	6.3x11	13	6.3x11	14	6.3x11	14	6.3x11	14		
1	6.3x11	16	6.3x11	16	6.3x11	17	8x11.5	20	8x11.5	20	8x11.5	20
2.2	6.3x11	20	8x11.5	31	6.3x15	34	8x11.5	35	8x11.5	30	8x16	23
	8x11.5	25			8x11.5	35			10x12.5	35	10x12.5	24
					10x12.5	40					8x16	32
3.3	8x11.5	33	8x11.5	34	6.3x15	35	10x12.5	42	8x11.5	32	10x12.5	33
			10x12.5	38	8x11.5	36			10x12.5	38	10x16	36
					8x16	40			10x16	42	10x12.5	38
					10x12.5	41					10x16	42
4.7	8x11.5	46	8x11.5	47	8x11.5	48	10x12.5	58	8x16	44	10x20	49
					8x16	54			10x16	50		
	10x12.5	50	10x12.5	52	10x12.5	55					10x16	50
					10x16	65	10x16	61	10x12.5	45	10x20	58
									10x16	50		
6.8	8x11.5	60	10x12.5	79	8x14	75	10x16	84	10x12.5	58		
	10x12.5	70			8x15	77			10x16	65		
					8x16	80			10x20	72	10x16	63
					10x12.5	82					10x20	70
					10x16	90					13x20	80
10	8x11.5	68	10x16	87	10x14	104			10x16	80		
	10x12.5	80	10x20	92	10x15	107	10x20	112	10x20	92		
					10x16	110			13x20	98	10x20	90
					10x20	125					13x20	98
22	10x16	110	13x20	160	10x25	162					13x25	115
	10x20	125			13x20	170						
	13x20	150	13x25	170	16x21	196			13x20	165	13x25	160
					13x25	190			16x25	200	16x25	180
							13x25	185	13x25	180		
33	13x20	190	13x20	180	13x20	235			13x25	185		
			13x25	200	13x25	260	16x25	230	16x25	210	16x31.5	230
					16x21	270			16x31.5	230	18x25	220
					16x25	290						
47					16x25	300	16x25	280	16x25	305		
					16x31.5	360	16x31.5	310	16x31.5	340	18x25	330
	13x20	230	16x25	245	18x25	320			16x35.5	380	18x31.5	360
	13x25	240	16x31.5	260					18x25	350	16x35.5	360
									18x31.5	360		
56	13x20	255	16x25	330	16x25	360	16x35.5	390	16x31.5	370		
	13x25	280			16x31.5	400			16x35.5	400	16x35.5	390
									18x25	370	16x41	420
68	13x25	310			16x25	410	18x31.5	470	16x31.5	425	18x31.5	400
	16x25	355	16x31.5	370	16x31.5	450			16x35.5	450	16x45	480
					16x35.5	480			18x25	410	18x35.5	460
					18x25	440			18x31.5	460	18x41	490
					18x31.5	500			18x35.5	470		
82	16x25	370	16x35.5	385	16x31.5	480	18x31.5	475	18x31.5	465	16x45	490
					18x25	470	18x35.5	500	18x35.5	480	18x35.5	470
					18x31.5	520					18x41	500
100	16x25	375	18x31.5	390	16x35.5	520	16x35.5	525	18x31.5	500	18x41	550
	16x31.5	395			18x31.5	530	18x31.5	535	18x35.5	525	18x45	570
					18x35.5	550	18x35.5	555	18x41	560	20x41	580
120	16x31.5	420	16x41	400	18x31.5	550	18x31.5	560	18x41	580	20x46	600
	16x35.5	430	18x35.5	400	18x35.5	580	18x35.5	590	20x36	580		
							18x41	630	22x41	650		
150	16x35.5	460	18x41	420	18x35.5	610	18x35.5	615	18x45	690	22x46	750
	18x31.5	460			18x41	650	18x41	660	20x41	695		
					22x31	640			22x36	695		
									22x41	720		
180	18x31.5	465	18x41	430	18x45	700	18x45	680				
	18x35.5	470					20x41	685				
220	18x35.5	650	22x41	500								
	18x41	700										
330	18x45	720										
	22x41	780										

KW Series 9-21mm Low Profile 105℃



Features

- ◆ Used space-savinq eguipment, low profile.
- ◆ Endurance 2000 hrs at 105℃.
- ◆ Safety vent construction design.
- ◆ RoHS Compliant

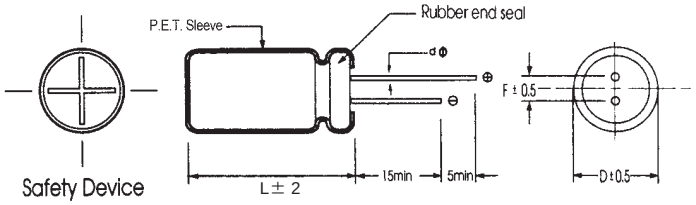
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	6.3 to 100 VDC	160 to 450 VDC
Capacitance Range	2.2 to 10000 μF	1.5 to 220 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measures with rated working voltage applied.	I≦0.04 CV +100 (μA) After 2 minutes with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 D.F. (%)max. 24 22 20 16 14 12 10 10 Working Voltage(VDC) 160 200 250 350 400 450 D.F. (%)max. 15 15 15 15 20 20 For capacitance ＞1000, add 2% per another 1000 μF.	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 Z-25℃／Z+20℃ 4 3 2 2 2 2 2 2 Z-40℃／Z+20℃ 8 6 4 4 3 3 3 3 Working Voltage(VDC) 160 200 250 350 400 450 Z-25℃／Z+20℃ 3 3 3 6 6 6 For Capacitance ＞1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃	
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value	
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	≧10K
0.47＜CAP≦68	0.8	1	1.20	1.30	1.50
100＜CAP≦1000	0.8	1	1.10	1.15	1.20
2200＜CAP≦10000	0.8	1	1.05	1.10	1.15

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5			0.6		0.8	

Case Size

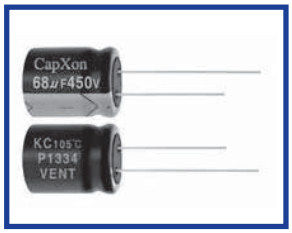
ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
2.2											5x9	19	5x9	20
3.3											5x9	25	5x9	26
4.7											5x9	40	5x9	41
6.8											5x9	48	5x9	49
10											5x9	54	5x9	55
22											5x9	75	6.3x9	107
33									5x9	90	6.3x9	115	6.3x9	114
47					5x9	105	5x9	110	6.3x9	120	6.3x9	130	8x9	136
68			5x9	115	6.3x9	125	6.3x9	130	8x9	145	8x9	169	10x9	170
100	5x9	120	5x9	135	6.3x9	150	6.3x9	160	8x9	180	10x9	200	10x9	173
150	5x9	135	6.3x9	150	6.3x9	160	8x9	185	8x9	210	10x9	250	10x16	245
220	6.3x9	165	6.3x9	165	8x9	200	8x9	230	10x9	255	10x12.5	290	13x13	317
330	6.3x9	185	8x9	205	8x9	250	10x9	310	10x12.5	360	13x13	375	13x16	382
											13x16	400		
470	8x9	260	8x9	275	10x9	310	10x12.5	370	13x13	410	16x16	550	16x16	490
			10x9	280					13x16	430				
680	10x9	310	10x9	360	13x13	390	13x16	520	13x16	580	16x16	700	16x21	730
1000	10x9	370	10x9	450	13x13	520	13x16	600	16x16	750	16x21	850	16x25	1050
2200	13x16	620	13x16	690	16x16	850	16x21	950	18x21	1200	18x25	1300		
							18x16	940						
3300	16x16	860	16x16	950	16x21	1180	18x21	1250	18x25	1450				
4700	16x16	1010	16x21	1150	18x21	1480	18x25	1470						
6800	16x16	1210	18x21	1350	18x25	1600								
10000	18x21	1450	18x25	1700										

WV / Cap(μ F)	100		160		200		250		350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1.5													8x9	18
2.2	5x9	20									8x9	35	10x9	25
3.3	5x9	27							8x9	35	10x9	40	10x9	30
4.7	5x9	42	8x9	50	8x9	50	8x9	50	10x9	50	13x16	50	13x16	48
6.8	6.3x9	56	8x9	55	8x9	58	10x9	65	13x16	80	13x16	80	13x16	68
10	8x9	72	10x9	80	10x9	78	13x16	82	13x16	95	13x16	100	16x16	100
											16x16	105		
22	8x9	114	13x16	120	13x16	145	13x16	165	16x16	180	16x21	185	16x21	170
							16x16	180						
33	10x9	141	13x16	175	16x16	200	16x16	225	16x21	225	16x21	230		
47	10x16	197	16x16	225	16x16	240	18x16	350	18x21	300	18x21	309		
68	10x16	200	16x21	305	16x21	360	18x21	390						
100	13x13	247	16x21	380	18x21	410								
150	13x16	295	18x21	530										
	16x16	346												
220	16x16	373												
330	16x21	500												
470														

Ripple Current (mA, rms) at 105℃ 120Hz

KC 105℃ 3000 hours,Ultra Miniaturize



Features

- ◆ Endurance 3000 hours 105℃
- ◆ ROHS compliant

KM → **Ultra miniaturized** → **KC**

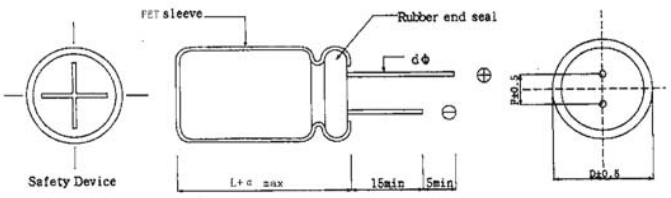
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Rated Voltage Range	400 to 450 VDC
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦3$\sqrt{CV}$ (μA) After 5 minute with rated working voltage applied. C:rated Capacitance (μF)，V:working voltage(V)
Dissipation Factor (tan δ ，at 20℃，120Hz)	Less than the value under table Cap(μF)) / W.V.(V) | 400~450V tan δ | 20%
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(V) | 400~450 Z-25℃／Z+20℃ | 8
Endurance	Test conditions Duration time :3000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :Within±20% of the initial measured value Dissipation factor :Not more than 200% of the initial specified value Leakage current :Not more than The initial specified value
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)		50(60)	120	400	1K	10K	50K-100K
Coefficient	400~450V	0.8	1	1.30	1.45	1.5	1.65

Diagram of Dimensions:(unit:mm)



ϕD	10～13	16～18
F	5.0	7.5
ϕd	0.6	0.8
α	2.0	

Radial

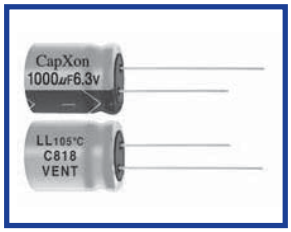
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	400		420		450	
	Size	Ripple	Size	Ripple	Size	Ripple
82	16x25	600			16x31.5	640
100	16x31.5	710	16x31.5	690	16x35.5	730
120	16x35.5	800	16x35.5	780	16x41	820
			18x31.5	800	18x31.5	800
150	16x41	920	16x45	940	16x51	980
	18x31.5	890	18x35.5	920	18x41	970
180	16x51	1080	16x51	1050	18x45	1090
	18x41	1060	18x41	1040	18x45	1090
220	18x45	1200	18x51	1220	18x51	1220

Ripple Current (mA, rms) at 105℃ 120Hz

LL Series Low Leakage Current



Features

- ◆ Extremely low and stable leakage current characteristics.
- ◆ Close capacitance tolerance ±20% (±10% on requested)
- ◆ RoHS Compliant

Specifications

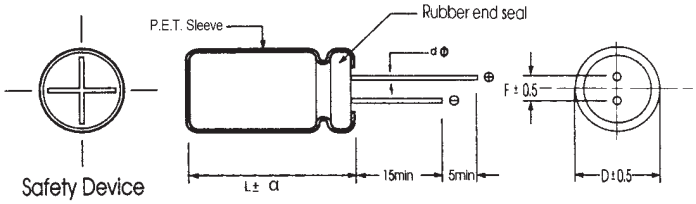
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 63 VDC
Capacitance Range	0.1 to 2200 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.002 CV or 0.4 (μA) After 3 minutes(90sec. ≦10μF) whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 20 / 17 / 13 / 10 / 9 / 8 / 8
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-40℃ / Z+20℃: 4 / 3 / 3 / 2 / 2 / 2 / 2
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Radial

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦2200	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2	2

Dφ	5	6.3	8	10	13
F	2.0	2.5	3.5	5.0	5.0
dφ	0.5			0.6	

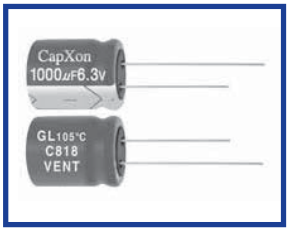
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											5x11	8.8	5x11	8.8
0.22											5x11	8.8	5x11	8.8
0.33											5x11	8.8	5x11	8.8
0.47											5x11	12	5x11	12
1											5x11	17	5x11	17
2.2											5x11	24	5x11	24
3.3											5x11	29	5x11	32
4.7							5x11	32	5x11	33	5x11	36	5x11	39
10					5x11	39	5x11	43	5x11	48	5x11	52	6.3x11	58
22	5x11	36	5x11	50	5x11	62	5x11	65	6.3x11	71	6.3x11	77	6.3x11	94
33	5x11	44	5x11	66	5x11	68	5x11	76	6.3x11	83	6.3x11	99	8x11.5	110
47	5x11	53	5x11	75	5x11	105	6.3x11	116	6.3x11	125	8x11.5	138	8x11.5	152
100	5x11	74	5x11	104	6.3x11	138	8x11.5	149	8x11.5	187	10x12.5	217	10x16	260
220	6.3x11	131	8x11.5	193	8x11.5	220	10x12.5	246	10x12.5	330	10x20	380	13x20	440
330	6.3x11	161	8x11.5	256	8x11.5	268	10x12.5	352	10x16	440	13x20	506	13x25	594
470	8x11.5	242	8x11.5	319	10x12.5	407	10x16	484	13x20	590	13x25	705		
1000	10x12.5	390	10x16	605	10x20	704	13x20	847	13x25	1012				
2200	13x20	665	13x20	860	13x25	890								

Ripple Current (mA, rms) at 105℃ 120Hz

GL Series Low Impedance, Long Life



Features

- ◆ Low impedance for high frequency, Anti-Solvent Design.
- ◆ Long Life 2000 ~ 6000 hrs at 105℃ depending on case size.
- ◆ Radial type for switching power supply.
- ◆ RoHS Compliant

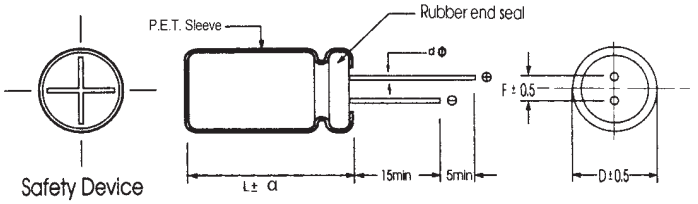
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55 to +105℃
Rated Voltage Range	6.3 to 63 VDC
Capacitance Range	0.47 to 10000 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage (VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 D.F. (%)max: 20 / 18 / 16 / 14 / 12 / 10 / 9 For Capacitance ＞1000 μF, add 2% per another 1000 μF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 Z-25℃／Z+20℃: 4 / 3 / 2 / 2 / 1.5 / 1.5 / 1.5 Z-40℃／Z+20℃: 6 / 4 / 3 / 3 / 2 / 2 / 2 Z-55℃／Z+20℃: 8 / 6 / 5 / 5 / 4 / 4 / 4 For Capacitance ＞1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃ add 1.5 per another 1000 μF for -55℃／+20℃
Endurance	Test conditions Duration time :as right Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value D φ / Life hours: 5 - 6.3 φ / 2000; 8 φ / 3000; ≧ 10 φ / 6000
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP≦100	0.52	0.65	0.80	0.89	0.97	1
100＜CAP≦1000	0.58	0.72	0.84	0.90	0.98	1
1000＜CAP	0.63	0.78	0.87	0.91	0.98	1

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18	22
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5	10
dφ	0.5		L＜20	L≧20	0.6		0.8		
			0.5	0.6					

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Radial

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
10							5x11	37	4.00
15							5x11	60	3.52
22				5x11	56	2.60	5x11	70	2.00
27				5x11	57	2.40	5x11	110	1.60
33				5x11	58	2.20	5x11	130	1.26
39				5x11	95	1.85	5x11	150	0.87
47				5x11	120	1.20	5x11	190	0.52
56				5x11	130	1.05	5x11	205	0.49
68				5x11	145	0.89	5x11	210	0.45
82				5x11	170	0.75	6.3x11	250	0.37
100	5x11	185	0.95	5x11	205	0.48	6.3x11	260	0.31
120	5x11	190	0.90	5x11	230	0.44	6.3x11	290	0.29
150	6.3x11	210	0.75	6.3x11	270	0.37	6.3x11	300	0.26
180	6.3x11	240	0.70	6.3x11	290	0.35	6.3x15	370	0.23
							8x11.5	368	0.24
220	6.3x11	300	0.55	6.3x11	330	0.28	6.3x15	470	0.20
							8x11.5	455	0.21
270	6.3x11	310	0.49	6.3x15	370	0.25	8x11.5	490	0.17
				8x11.5	390	0.21			
330	6.3x15	320	0.34	6.3x15	445	0.15	8x11.5	550	0.12
	8x11.5	390	0.30	8x11.5	430	0.16			
470	6.3x15	435	0.25	8x11.5	555	0.115	8x16	745	0.092
	8x11.5	430	0.22				10x12.5	722	0.095
560	8x11.5	480	0.20	8x11.5	620	0.095	10x12.5	780	0.082
680	8x11.5	510	0.18	8x16	630	0.090	10x16	920	0.074
820	8x16	620	0.14	8x20	870	0.084	10x16	1020	0.067
1000	8x16	710	0.10	8x20	1040	0.070	10x20	1180	0.050
	10x12.5	625	0.12	10x16	1010	0.072			
1200	10x16	810	0.095	10x16	1130	0.062	10x25	1370	0.047
1500	10x16	1050	0.074	10x20	1270	0.056	10x25	1470	0.041
1800	10x20	1200	0.065	10x25	1430	0.045	13x20	1630	0.038
				13x20	1450	0.048			
2200	10x20	1300	0.060	13x20	1690	0.040	13x20	1800	0.035
	10x25	1400	0.057				13x25	1950	0.033
2700	10x25	1400	0.055	13x20	1800	0.033	13x25	2050	0.031
	13x20	1410	0.052						
3300	13x20	1500	0.048	13x25	1980	0.029	13x30	2410	0.025
							16x25	2340	0.028
4700	13x25	1800	0.032	13x30	2300	0.025	16x31.5	2650	0.022
	13x30	1950	0.025	16x25	2100	0.029	18x25	2570	0.024
6800	13x30	2020	0.024	16x31.5	2340	0.023	18x31.5	2700	0.020
	16x25	2230	0.021						
8200	16x31.5	2530	0.020	16x35.5	2580	0.019	18x35.5	2830	0.018
10000	16x35.5	2740	0.019	18x31.5	2770	0.017	18x41	3300	0.015

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

CapXon

GL Series

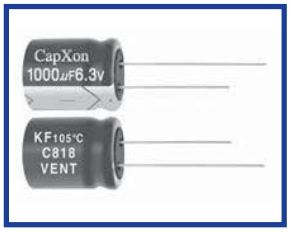
ϕ DxL(mm)

WV / Cap(μ F)	25			35			50			63		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47							5x11	15	5.00	5x11	16	5.00
1							5x11	25	3.95	5x11	27	3.95
2.2							5x11	33	2.60	5x11	38	2.60
3.3							5x11	45	2.00	5x11	48	2.00
4.7							5x11	58	1.89	5x11	62	1.89
5.6							5x11	80	1.85	5x11	85	1.82
6.8							5x11	85	1.77	5x11	90	1.75
8.2							5x11	90	1.72	5x11	100	1.69
10	5x11	56	2.10	5x11	70	1.90	5x11	100	1.70	5x11	105	1.65
15	5x11	97	1.95	5x11	115	1.72	5x11	110	1.53	5x11	110	1.47
22	5x11	120	1.80	5x11	130	1.36	6.3x11	135	1.00	6.3x11	170	0.80
27	5x11	130	1.56	5x11	140	1.20	6.3x11	160	0.93	6.3x11	190	0.75
33	5x11	150	1.20	5x11	175	0.95	6.3x11	230	0.74	8x11.5	245	0.61
39	5x11	170	0.82	6.3x11	200	0.74	6.3x11	240	0.65	8x11.5	270	0.58
47	5x11	220	0.50	6.3x11	250	0.44	8x11.5	285	0.50	8x11.5	290	0.56
56	5x11	245	0.44	6.3x11	270	0.40	8x11.5	300	0.39	8x11.5	320	0.38
68	6.3x11	270	0.39	6.3x11	300	0.35	8x11.5	340	0.30	8x16	480	0.30
82	6.3x11	285	0.33	6.3x15	350	0.29	8x11.5	400	0.25	8x16	510	0.28
100	6.3x11	300	0.28	6.3x15	390	0.18	8x16	475	0.18	10x16	590	0.24
				8x11.5	380	0.19						
120	6.3x11	350	0.22	8x11.5	460	0.17	8x16	520	0.17	10x16	660	0.16
150	6.3x15	420	0.20	8x16	580	0.15	10x16	675	0.13	10x20	790	0.11
180	6.3x15	440	0.18	8x16	630	0.13	10x16	760	0.095	10x20	850	0.095
	8x11.5	435	0.19									
220	8x11.5	550	0.125	8x16	740	0.095	10x20	900	0.085	10x25	1020	0.082
				10x12.5	720	0.098				13x20	1054	0.080
270	8x11.5	620	0.095	8x20	830	0.086	10x20	950	0.075	13x20	1100	0.072
				10x16	840	0.088						
330	8x16	740	0.085	10x16	995	0.065	10x25	1050	0.068	10x30	1200	0.064
	10x12.5	720	0.082							13x25	1160	0.067
470	10x16	1040	0.065	10x20	1150	0.050	13x20	1490	0.048	16x25	1750	0.048
560	10x16	1070	0.061	10x25	1310	0.048	13x20	1550	0.045	16x25	1830	0.044
680	10x20	1280	0.052	13x20	1440	0.044	13x25	1840	0.041	16x31.5	2070	0.040
820	10x25	1460	0.043	13x20	1600	0.038	13x30	2060	0.036	16x31.5	2100	0.035
1000	10x25	1530	0.039	13x30	1950	0.036	13x40	2200	0.033	16x35.5	2450	0.031
	13x25	1580	0.038				16x31.5	2130	0.030			
1200	13x25	1800	0.036	16x25	2200	0.029	16x31.5	2520	0.027	18x31.5	2500	0.026
1500	13x25	2020	0.032	16x31.5	2520	0.027	16x35.5	2700	0.026	18x35.5	2700	0.025
1800	13x30	2300	0.027	16x31.5	2560	0.026	18x31.5	2800	0.025	18x41	2900	0.024
2200	13x30	2480	0.025	16x31.5	2650	0.025	18x35.5	2900	0.024	18x41	2990	0.023
	16x25	2405	0.027	18x25	2570	0.026						
2700	16x31.5	2670	0.024	18x31.5	2660	0.023	18x41	2970	0.021			
3300	16x31.5	2960	0.020	18x35.5	3000	0.020						
	18x25	3050	0.022									
4700	16x41	3490	0.022	18x41	3300	0.019						
	18x35.5	3520	0.021									
6800	18x41	3600	0.017									

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

KF Series Low Impedance



Features

- Used in communication equipments, switching power supply, industrial measuring instruments, etc.
- Endurance 2000~5000 Hrs at 105℃
- Safety vent construction design.
- RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	6.3 to 100 VDC	160 to 450 VDC
Capacitance Range	0.47 to 15000 μF	0.47 to 470 μF
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.	I≦0.03 CV (μA) After 2 minutes withrate working voltage applied.

Dissipation Factor (tan δ ，at 20℃，120Hz)

Working Voltage(VDC)	6.3	10	16	25	35	50	63	100
D.F. (%)max.	18	16	14	12	10	9	8	8

Working Voltage(VDC)	160	200	250	350	400	420	450
D.F. (%)max.	12	12	12	15	15	17	17

For capacitance ＞1000 μF, add 2% per another 1000uF.

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	6.3	10	16	25	35	50	63	100
Z-25℃／Z+20℃	4	3	3	3	3	3	2	2
Z-40℃／Z+20℃	8	6	4	3	3	3	3	3

Working Voltage(VDC)	160	200	250	350	400	450
Z-25℃／Z+20℃	2	2	3	5	5	6
Z-40℃／Z+20℃	3	6	6	6	6	-

For capacitance ＞1000 μF, add 0.5 per another 1000uF for -25℃／+20℃
add 1 per another 1000uF for -40℃／+20℃

Endurance

Test conditions
Duration time : as right
Ambient temperature : +105℃
Applied voltage : Rated DC working voltage
After test requirement at +20℃
Capacitance change : ≦ ±20% of the initial measured value
Dissipation factor : ≦ 200% of the initial specified value
Leakage current : ≦ The initial specified value

D φ	Life hours
5 - 6.3 φ	2000
8 φ	3000
≧ 10 φ	5000

(160-450V : 2000hrs)

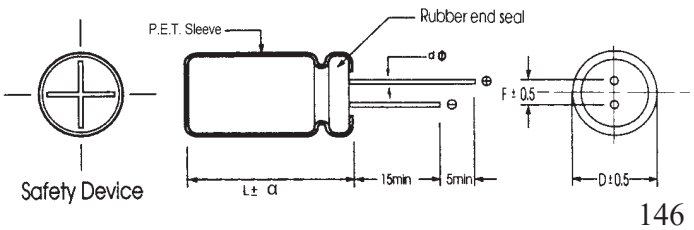
Shelf Life

Test conditions
Duration time : 1000Hrs
Ambient temperature : +105℃
Applied voltage : None
After test requirement at +20℃: Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP≦100	0.52	0.62	0.80	0.89	0.97	1
100＜CAP≦1000	0.58	0.72	0.84	0.90	0.98	1
1000＜CAP	0.63	0.78	0.87	0.91	0.98	1

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18	22
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5	10
dφ	0.5		L＜20	L≧20	0.6		0.8		
			0.5	0.6					

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
10							5x11	74	4.7
22				5x11	98	2.7	5x11	100	2.6
33				5x11	100	2.6	5x11	114	2
47				5x11	150	1.34	5x11	155	1.1
56				5x11	160	1.23	5x11	180	0.82
68				5x11	170	1.05	5x11	195	0.69
100	5x11	170	1.00	5x11	210	0.8	6.3x11	265	0.5
120	5x11	175	0.92	6.3x11	250	0.75	6.3x11	270	0.47
150	6.3x11	220	0.81	6.3x11	290	0.61	6.3x11	290	0.41
	5x11	185	0.90						
180	6.3x11	240	0.76	6.3x11	320	0.46	8x11.5	370	0.34
							6.3x11	315	0.38
220	6.3x11	310	0.65	6.3x11	340	0.35	8x11.5	480	0.25
270	6.3x11	340	0.54	8x11.5	400	0.3	8x11.5	520	0.21
330	8x11.5	390	0.42	8x11.5	460	0.27	8x11.5	590	0.156
470	8x11.5	450	0.25	8x11.5	580	0.25	10x12.5	750	0.124
560	8x11.5	490	0.23	10x12.5	635	0.16	10x12.5	785	0.105
				8x11.5	550	0.17			
680	8x11.5	550	0.21	10x12.5	765	0.11	10x16	1100	0.092
820	8x16	620	0.20	10x16	890	0.1	10x16	1180	0.078
1000	10x12.5	770	0.17	10x16	1040	0.076	10x20	1350	0.065
	8x16	750	0.18						
1200	10x16	860	0.16	10x16	1200	0.067	10x25	1500	0.061
1500	10x16	1100	0.14	10x20	1400	0.062	10x30	1600	0.056
							13x20	1380	0.06
1800	10x20	1250	0.11	10x25	1550	0.058	13x20	1800	0.047
							10x25	1730	0.05
2200	10x20	1380	0.090	13x20	1750	0.041	13x25	2000	0.038
	10x25	1470	0.095	10x25	1650	0.052	13x20	1880	0.04
2700	10x25	1490	0.075	13x20	1900	0.035	13x25	2450	0.033
	13x20	1550	0.075						
3300	13x20	1650	0.036	13x25	2000	0.031	16x25	2790	0.030
							13x30	2640	0.030
4700	13x30	2100	0.036	16x25	2100	0.030	16x31.5	2880	0.026
	13x25	1900	0.040						
5600	13x30	2160	0.034	16x25	2290	0.028	16x35.5	2990	0.025
6800	16x25	2350	0.032	16x31.5	2650	0.026	18x35.5	3200	0.024
8200	16x31.5	2550	0.027	16x35.5	2770	0.026	18x35.5	3320	0.024
10000	16x35.5	2700	0.024	18x35.5	2850	0.024	18x41	3550	0.024
15000	18x35.5	2950	0.023						

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

ϕ DxL(mm)

WV / Cap(μ F)	25			35			50		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47							5x11	25	5.4
1							5x11	40	4
2.2							5x11	55	2.8
3.3							5x11	60	2.2
4.7	5x11	68	3.95	5x11	85	3.65	5x11	90	2
5.6	5x11	75	3.25	5x11	92	3.09	5x11	105	1.93
6.8	5x11	80	2.98	5x11	97	2.82	5x11	110	1.89
10	5x11	85	2.56	5x11	105	2.37	5x11	120	1.82
22	5x11	125	1.95	5x11	150	1.5	6.3x11	150	1.25
33	5x11	155	1.42	5x11	180	1.21	6.3x11	250	0.8
47	5x11	190	1.10	6.3x11	280	0.8	6.3x11	290	0.65
	6.3x11	220	1.00						
56	6.3x11	250	0.79	6.3x11	310	0.64	8x11.5	310	0.49
68	6.3x11	280	0.65	8x11.5	350	0.52	8x11.5	375	0.33
100	6.3x11	370	0.35	8x11.5	450	0.25	10x12.5	480	0.17
120	6.3x11	380	0.33	8x11.5	510	0.22	10x12.5	530	0.156
150	8x11.5	410	0.31	8x11.5	540	0.191	10x12.5	590	0.132
180	8x11.5	455	0.25	10x12.5	650	0.172	10x16	860	0.114
220	8x11.5	550	0.15	10x12.5	750	0.114	10x16	930	0.096
270	10x12.5	720	0.125	10x16	910	0.095	10x20	1060	0.078
330	10x12.5	820	0.114	10x16	1050	0.079	10x25	1150	0.065
470	10x16	1200	0.076	10x20	1200	0.065	13x20	1590	0.055
560	10x16	1250	0.072	10x25	1500	0.061	13x20	1740	0.05
680	10x20	1320	0.065	13x20	1570	0.056	13x25	1930	0.044
820	10x20	1400	0.052	13x20	1700	0.048	13x30	2100	0.039
	10x25	1530	0.052						
1000	13x20	1650	0.045	13x25	1900	0.042	16x25	2300	0.036
1200	13x25	1980	0.041	13x30	2130	0.039	16x31.5	2650	0.036
1500	13x25	2210	0.038	16x25	2270	0.036	16x35.5	2750	0.034
1800	16x25	2510	0.036	16x31.5	2700	0.035	16x35.5	2850	0.034
2200	16x25	2650	0.035	16x31.5	2780	0.034	18x35.5	3040	0.032
2700	16x25	2820	0.031	16x35.5	2850	0.029	18x41	3070	0.027
3300	16x31.5	3240	0.026	18x35.5	3100	0.026	18x41	3100	0.025
4700	16x35.5	3650	0.024	18x41	3500	0.024			
5600	18x35.5	3720	0.024						
6800	18x41	3850	0.024						

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

CapXon

KF Series

ϕ DxL(mm)

WV / Cap(μ F)	63			100			160		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	5x11	25	5.4	5x11	20	5.9	5x11	36	18.5
1	5x11	33	4	5x11	30	4.4	6.3x11	45	12.0
2.2	5x11	45	2.8	5x11	42	3.3	6.3x11	55	9.9
3.3	5x11	58	2.2	5x11	55	2.8	8x11.5	70	4.31
4.7	5x11	65	2	5x11	72	2.6	8x11.5	80	4.16
5.6	5x11	95	1.9	5x11	100	2.33	10x12.5	91	3.61
6.8	5x11	100	1.82	6.3x11	115	1.95	10x16	100	3.12
10							10x12.5	126	3
	5x11	110	1.75	6.3x11	130	1.77	10x16	140	2.69
22	6.3x11	180	0.80	8x11.5	220	0.85	10x16	205	1.3
33	8x11.5	270	0.61	10x12.5	320	0.69	10x20	260	1.1
47							10x20	276	1.65
	8x11.5	300	0.56	10x12.5	370	0.58	13x20	320	0.91
56	8x11.5	330	0.38	10x12.5	400	0.43	13x20	340	0.67
				10x16	440	0.42	13x25	370	0.66
68	10x12.5	480	0.21	10x16	470	0.35	13x25	450	0.56
100	10x16	610	0.14	10x25	560	0.3	16x25	540	0.47
120	10x16	620	0.13	10x25	660	0.22	16x25	560	0.35
150	10x16	700	0.11	13x20	780	0.174	16x31.5	710	0.26
180	10x20	800	0.10	13x20	820	0.142	16x35.5	760	0.22
220	10x20	920	0.080	13x25	950	0.13	16x35.5	820	0.19
270	13x20	1150	0.065	13x30	1120	0.11	18x35.5	990	0.18
330	13x20	1250	0.055	16x25	1440	0.1	18x41	1180	0.16
470	13x25	1620	0.053	16x31.5	1650	0.09			
560	13x25	1680	0.049	16x35.5	1720	0.085			
680	13x30	1950	0.043	18x35.5	1790	0.08			
820	16x25	2150	0.038	18x35.5	1840	0.071			
1000	16x31.5	2350	0.034	18x41	1930	0.066			
1200	16x35.5	2550	0.032						
1500	18x35.5	2710	0.031						
1800	18x41	3000	0.027						

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

ϕ DxL(mm)

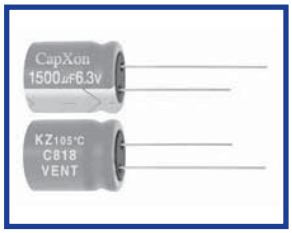
WV / Cap(μF)	200			250			350		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	5x11	36	16.50	5x11	40	8.85	6.3x11	40	8.82
	6.3x11	41	16.50						
1	6.3x11	45	7.76	6.3x11	50	6.54	6.3x11	50	7.90
							8x11.5	58	6.35
2.2	6.3x11	55	5.18	8x11.5	72	4.12	8x11.5	75	5.30
							10x12.5	86	4.02
3.3	8x11.5	71	4.25	8x11.5	75	3.85	10x12.5	90	3.80
							10x16	100	3.52
4.7	8x11.5	78	5.00	8x11.5	85	3.50	10x16	118	3.13
	10x12.5	85	4.12	10x12.5	100	2.95	10x20	130	2.77
5.6	8x11.5	90	4.50	8x11.5	95	2.93	10x16	120	2.76
	10x12.5	95	3.55	10x12.5	105	2.9	10x20	132	2.58
6.8	8x16	115	3.25	8x16	124	2.8	10x16	148	2.43
	10x16	140	2.71	10x12.5	126	2.8	10x25	180	1.65
				10x16	140	1.86			
10	8x11.5	115	3.75	8x16	141	1.80	10x16	165	1.64
	10x16	150	2.02	10x12.5	144	1.75	10x25	200	1.35
				10x16	160	1.40			
22	10x16	186	1.80	10x16	190	1.60	13x20	220	1.22
	10x20	205	1.40	10x20	210	1.30			
33	10x20	280	1.00	10x20	224	1.40	13x20	263	1.02
	13x20	330	0.80	10x25	248	1.25	13x25	290	0.86
				13x20	310	0.90			
47	10x20	311	0.72	13x20	375	0.60	16x25	389	0.76
	13x20	360	0.65	13x25	405	0.45	16x31.5	430	0.62
	13x25	400	0.62						
56	13x20	430	0.45	13x25	420	0.42	16x35.5	460	0.60
68	13x25	480	0.42	16x25	490	0.38	16x31.5	475	0.57
	16x25	540	0.35						
	16x25	780	0.30	16x31.5	675	0.27	16x35.5	481	0.56
100	16x31.5	820	0.28				18x31.5	487	0.56
							18x35.5	513	0.55
120	16x25	740	0.28	16x31.5	692	0.26	18x35.5	525	0.54
	16x31.5	830	0.26	16x35.5	730	0.25	18x41	560	0.52
150	16x31.5	840	0.25	16x35.5	750	0.24	18x41	590	0.50
	16x35.5	860	0.23	18x31.5	750	0.23			
180	18x31.5	920	0.20	18x35.5	830	0.21			
220	18x35.5	1050	0.19	18x31.5	850	0.20			
	18x41	1090	0.16	18x41	910	0.19			

WV / Cap(μF)	400			420			450		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	6.3x11	26	33	6.3x11	28	34	8x11.5	30	34
1	8x11.5	36	16.5	8x11.5	38	17	8x11.5	45	17.35
2.2	10x12.5	76	13	10x12.5	58	12.1	10x16	65	10.25
	8x11.5	65	13						
3.3	8x9	78	14						
	8x11.5	86	12	10x12.5	87	11	10x16	89	10
4.7	8x11.5	89	11						
	10x12.5	105	10	10x16	102	8.5	10x20	105	5
5.6	8x16	105	8	10x16	109	6.8	10x20	110	4.75
	10x12.5	120	9						
6.8	10x12.5	144	7.7						
	10x16	160	7.5	10x16	160	6	10x20	135	4.05
10	10x14	201	5				10x20	163	7
	10x16	213	3.8				10x25	180	3.75
	10x20	235	3.6	10x20	180	3.7	13x20	189	6.8
15	10x20	240	3						
22	13x16	268	2.8						
	13x20	295	2.65	13x25	330	2.7	13x25	320	2.8
33	13x20	399	1.8						
	13x25	440	1.6	16x25	480	1.8	16x25	460	2.2
	16x21	459	1.9				18x21	458	2.7
47	16x21	539	1.6				16x35.5	650	1.05
	16x25	580	1.4	16x31.5	620	1.1	18x25	596	1.65
56	16x25	587	1.03						
	16x31.5	650	0.85	16x35.5	670	0.9	18x31.5	730	0.95
68	16x31.5	800	0.8	18x31.5	750	0.8	18x31.5	721	0.8
	18x25	774	0.76				18x35.5	760	0.75
100	18x31.5	854	0.7				18x35.5	825	1.1
	18x35.5	900	1.3	18x35.5	820	0.7	18x41	880	0.74
120	18x35.5	930	1.3				18x41	980	1

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

KZ Series Low Impedance



Features

- Used in communication equipments, switching power supply, industrial measuring instruments, etc.
- Endurance 1000~2000hrs.
- Safety vent construction design.
- RoHS Compliant

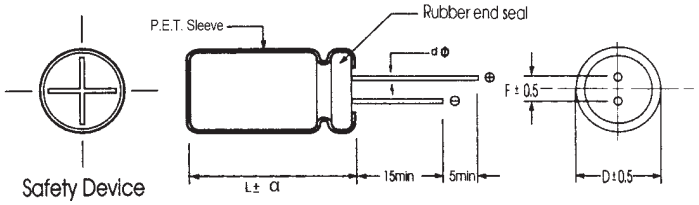
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 50 VDC
Capacitance Range	0.47 to 6800 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 D.F. (%)max. 18 16 14 12 10 9 For capacitance ＞1000 μF, add 2% per another 1000uF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 50 Z-25℃／Z+20℃ 4 3 3 3 3 3 Z-40℃／Z+20℃ 8 6 4 3 3 3 For capacitance ＞1000 μF, add 0.5 per another 1000uF for -25℃ / +20℃ add 1 per another 1000uF for -40℃ / +20℃
Endurance	Test conditions Duration time : as right Ambient temperature : +105℃ Applied voltage : Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦ ±20% of the initial measured value Dissipation factor : ≦ 200% of the initial specified value Leakage current : ≦ The initial specified value D φ / Life hours: 5 - 6.3 φ: 1000; ≧ 8 φ: 2000
Shelf Life	Test conditions Duration time : 1000Hrs Ambient temperature : +105℃ Applied voltage : None After test requirement at +20℃: Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1
10＜CAP≦100	0.52	0.62	0.80	0.89	0.97	1
100＜CAP≦1000	0.58	0.72	0.84	0.90	0.98	1
1000＜CAP	0.63	0.78	0.87	0.91	0.98	1

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5
dφ	0.5		L＜20: 0.5	L≧20: 0.6	0.6		0.8	

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Radial

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
10							5x11	80	4
22	5x11	80	3	5x11	90	2.5	5x11	110	2.0
33	5x11	90	2.0	5x11	105	2.0	5x11	114	1.8
47	5x11	140	1.5	5x11	155	1.3	5x11	160	1.0
56	5x11	150	1.5	5x11	165	1.2	5x11	180	0.8
68	5x11	160	1.1	5x11	175	1.0	5x11	200	0.65
100	5x11	170	1.0	5x11	215	0.75	5x11	255	0.55
120	5x11	173	0.9	6.3x11	240	0.73	6.3x11	270	0.45
150	5x11	178	0.85	6.3x11	225	0.60	6.3x11	292	0.40
180	6.3x11	215	0.72	6.3x11	280	0.58	6.3x11	380	0.32
220	6.3x11	295	0.62	6.3x11	300	0.43	6.3x11	430	0.25
270	6.3x11	320	0.50	8x11.5	405	0.28	8x11.5	480	0.20
330	6.3x11	380	0.45	8x11.5	465	0.25	8x11.5	595	0.15
470	8x11.5	460	0.22	8x11.5	500	0.22	8x11.5	650	0.15
560	8x11.5	490	0.22	8x11.5	620	0.17	8x11.5	730	0.12
680	8x11.5	520	0.19	8x11.5	750	0.15	10x12.5	890	0.09
820	8x11.5	605	0.19	10x12.5	805	0.10	10x12.5	980	0.085
1000	8x11.5	680	0.18	10x12.5	1050	0.08	10x16	1180	0.07
1200	10x12.5	750	0.15	10x16	1150	0.065	10x20	1320	0.06
1500	10x12.5	820	0.14	10x16	1210	0.062	10x20	1450	0.056
1800	10x16	920	0.12	10x20	1280	0.06	10x20	1510	0.053
2200	10x20	1150	0.10	10x20	1520	0.05	13x20	1820	0.04
2700	10x20	1500	0.075	13x20	1580	0.048	13x20	2050	0.035
3300	10x20	1620	0.06	13x20	1700	0.043	13x25	2300	0.033
3900	13x25	1820	0.058	13x25	1860	0.040	16x25	2550	0.033
4700	13x25	1920	0.04	13x25	1950	0.038	16x25	2580	0.032
5600	13x30	2210	0.038	16x25	2290	0.033	16x31.5	2650	0.030
6800	16x25	2380	0.032	16x25	2480	0.028	16x31.5	2900	0.024

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

WV / Cap(μF)	25			35			50		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47							5x11	28	5.0
1							5x11	42	3.8
2.2							5x11	55	2.8
3.3							5x11	62	2.0
4.7	5x11	72	3.5	5x11	87	3.5	5x11	90	2.0
5.6	5x11	75	3.5	5x11	95	3.0	5x11	108	1.8
6.8	5x11	83	2.8	5x11	98	2.7	5x11	112	1.8
10	5x11	87	2.5	5x11	107	2.2	5x11	120	1.75
22	5x11	118	1.8	5x11	150	1.5	5x11	150	1.5
33	5x11	155	1.4	5x11	180	1.2	6.3x11	233	0.78
47	5x11	183	0.9	5x11	257	0.75	6.3x11	270	0.65
56	5x11	207	0.83	6.3x11	283	0.6	6.3x11	290	0.6
68	5x11	210	0.69	6.3x11	290	0.55	6.3x11	310	0.5
100	6.3x11	378	0.34	6.3x11	430	0.26	8x11.5	480	0.17
120	6.3x11	380	0.33	8x11.5	470	0.20	10x12.5	500	0.1638
150	8x11.5	390	0.325	8x11.5	510	0.2	10x12.5	560	0.16
180	8x11.5	430	0.25	8x11.5	570	0.18	10x12.5	580	0.14
220	8x11.5	550	0.15	8x11.5	620	0.13	10x16	640	0.09
270	8x11.5	620	0.15	10x12.5	850	0.12	10x16	905	0.08
330	8x11.5	710	0.13	8x16	1050	0.08	10x16	1050	0.07
470	8x11.5	980	0.078	10x16	1100	0.065	13x20	1450	0.05
	8x16	1050	0.07						
560	10x16	1080	0.065	13x20	1300	0.06	13x20	1510	0.05
680	10x16	1100	0.065	13x20	1570	0.056	13x20	1750	0.05
820	10x20	1350	0.05	13x20	1700	0.048	13x25	1980	0.04
1000	10x20	1580	0.045	13x20	1820	0.042	13x25	2000	0.04
1200	13x20	1720	0.04	13x25	2130	0.038	16x25	2200	0.038
1500	13x20	1780	0.04	13x25	2150	0.038	16x25	2300	0.038
1800	13x20	1980	0.035	13x25	2450	0.035	16x31.5	2610	0.036
2200	13x25	2000	0.033	16x25	2650	0.034	16x31.5	2900	0.033
2700	13x25	2250	0.032	16x31.5	2690	0.030	18x35.5	3000	0.028
3300	16x25	2580	0.027	16x35.5	2750	0.027	18x35.5	3050	0.026
4700	16x31.5	2850	0.025	18x35.5	2940	0.025			
5600	16x35.5	3000	0.025	18x35.5	3050	0.024			
6800	18x35.5	3550	0.025						

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

CapXon

GF series

GF series Low Impedance

Feature

◆Used in mother board,computer peripheral,etc.

◆Endurance 2000~5000 Hrs at 105℃

◆Safety vent construction design.

◆ RoHS Compliant

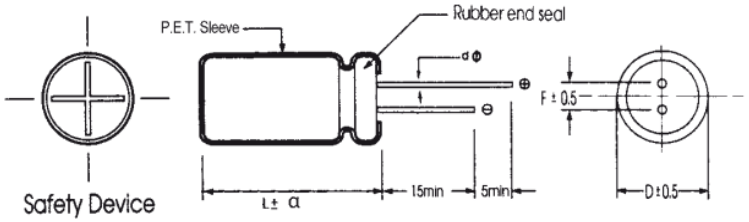
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55to +105℃
Rated Voltage Range	6.3 to 100 VDC
Capacitance Range	4.7 to 6800 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦0.01CV or 3(uA) After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 D.F. (%)max.: 16 / 14 / 12 / 10 / 9 / 8 / 8 / 8 For capacitance>1000uF,add 2% per another 1000uF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 Z(-25℃) / Z(+20℃): 4 / 3 / 3 / 3 / 3 / 3 / 2 / 2 Z(-40℃) / Z(+20℃): 8 / 6 / 4 / 3 / 3 / 3 / 3 / 3
Endurance	Test conditions Duration time :as right Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value Dφ / Life hours: 5-6.3φ: 2000; 8φ: 3000; ≧10φ: 5000
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(uF) / Frequency(Hz)	50(60)	120	400	1K	10K	50K~100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1.0
10＜CAP≦100	0.52	0.62	0.80	0.89	0.97	1.0
100＜CAP≦1000	0.58	0.72	0.84	0.90	0.98	1.0
1000＜CAP	0.63	0.78	0.87	0.91	0.98	1.0

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5
dφ	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

GF series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	100	5×11	200	0.400
6.3	120	5×11	210	0.380
6.3	150	5×11	225	0.350
6.3	180	6.3×11	300	0.320
6.3	220	6.3×11	360	0.250
6.3	270	6.3×11	377	0.240
6.3	330	6.3×11	395	0.200
6.3	390	8×11.5	576	0.140
6.3	470	8×11.5	600	0.095
6.3	560	8×16	720	0.087
6.3	680	8×16	800	0.080
6.3	680	10×16	814	0.084
6.3	820	8×20	970	0.070
6.3	1000	10×12.5	1000	0.055
6.3	1200	8×20	1150	0.048
6.3	1200	10×16	1180	0.050
6.3	1500	10×20	1400	0.045
6.3	1500	10×25	1560	0.043
6.3	1800	10×20	1500	0.041
6.3	2200	10×25	1720	0.037
6.3	2200	13×20	1890	0.039
6.3	2700	13×20	2080	0.034
6.3	3300	13×20	2290	0.026
6.3	3900	10×30	2450	0.024
6.3	3900	13×25	2670	0.022
6.3	4700	13×30	3200	0.021
6.3	5600	13×35	3270	0.020
6.3	6800	16×31.5	3490	0.018
10	68	5×11	190	0.700
10	82	5×11	210	0.500
10	100	5×11	242	0.310
10	120	5×11	261	0.280
10	150	6.3×11	300	0.260
10	180	6.3×11	350	0.220
10	220	6.3×11	390	0.180
10	270	6.3×15	460	0.160
10	330	8×11.5	540	0.110
10	390	8×11.5	620	0.095
10	470	8×11.5	750	0.075
10	560	8×16	870	0.072
10	680	8×20	1010	0.068
10	820	8×20	1030	0.065
10	1000	8×20	1220	0.050
10	1000	10×16	1400	0.042
10	1200	10×20	1560	0.035
10	1500	10×20	1670	0.032
10	1800	10×25	2000	0.028
10	2200	13×20	2370	0.025
10	2700	13×20	2400	0.023
10	3300	13×25	2720	0.021
10	3900	13×30	3000	0.020
10	4700	13×35	3450	0.019
10	5600	16×31.5	3460	0.018
10	6800	16×31.5	3630	0.016
16	47	5×11	200	0.400
16	56	5×11	220	0.380
16	68	5×11	230	0.350
16	82	5×11	260	0.310
16	100	6.3×11	360	0.250
16	120	6.3×11	365	0.230

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
16	150	6.3×11	385	0.210
16	180	8×11.5	520	0.190
16	220	8×11.5	575	0.140
16	270	8×11.5	600	0.120
16	330	8×11.5	740	0.080
16	390	8×16	790	0.075
16	470	8×16	990	0.062
16	470	10×12.5	1000	0.058
16	560	8×20	1070	0.057
16	680	8×20	1120	0.055
16	680	10×16	1280	0.052
16	820	10×20	1400	0.048
16	1000	10×20	1840	0.035
16	1200	10×25	1920	0.032
16	1500	10×25	2050	0.030
16	1500	13×20	2200	0.029
16	1800	13×20	2380	0.026
16	2200	13×25	2750	0.022
16	2700	13×25	3000	0.022
16	3300	13×35	3490	0.018
16	3900	16×25	3520	0.018
16	4700	16×31.5	3770	0.017
25	39	5×11	210	0.420
25	47	5×11	240	0.350
25	56	5×11	256	0.310
25	68	6.3×11	300	0.280
25	82	6.3×11	350	0.240
25	100	6.3×11	410	0.150
25	120	6.3×15	490	0.130
25	150	8×11.5	540	0.110
25	180	8×11.5	620	0.098
25	220	8×11.5	750	0.075
25	270	8×16	850	0.063
25	330	8×16	990	0.056
25	330	10×12.5	1010	0.054
25	390	10×12.5	1050	0.051
25	470	8×20	1260	0.045
25	470	10×16	1415	0.042
25	560	10×20	1450	0.040
25	680	10×20	1570	0.035
25	820	10×25	1910	0.032
25	1000	13×20	2340	0.025
25	1200	13×20	2390	0.025
25	1500	13×25	2710	0.023
25	1800	13×30	3150	0.021
25	2200	13×35	3420	0.018
25	2700	16×31.5	3480	0.018
25	3300	16×31.5	3600	0.018
35	33	5×11	230	0.320
35	39	6.3×11	277	0.310
35	47	6.3×11	340	0.200
35	56	6.3×11	375	0.200
35	68	6.3×11	400	0.190
35	82	8×11.5	480	0.170
35	100	8×11.5	560	0.150
35	120	8×11.5	585	0.130
35	150	8×11.5	680	0.110
35	180	8×16	810	0.098
35	220	8×16	1000	0.056
35	220	10×12.5	1060	0.052

CapXon

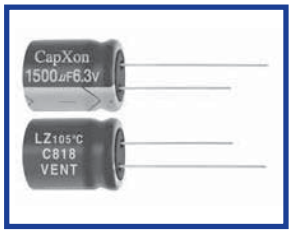
GF series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
35	270	10×16	1190	0.050
35	330	8×20	1210	0.041
35	330	10×16	1400	0.038
35	390	10×20	1550	0.035
35	470	10×20	1850	0.034
35	560	10×25	2040	0.031
35	680	13×20	2260	0.029
35	820	13×25	2630	0.021
35	1000	13×25	2780	0.019
35	1200	13×30	2950	0.019
35	1200	16×25	3150	0.018
35	1500	13×35	3350	0.018
35	1500	16×31.5	3600	0.017
35	1800	16×31.5	3670	0.016
35	2200	16×31.5	3750	0.015
35	2700	18×31.5	3850	0.014
50	22	5×11	220	0.350
50	27	6.3×11	265	0.340
50	33	6.3×11	280	0.320
50	39	6.3×11	300	0.280
50	47	8×11.5	360	0.200
50	56	8×11.5	385	0.190
50	68	8×11.5	400	0.170
50	82	8×11.5	550	0.120
50	100	8×11.5	730	0.075
50	120	8×16	770	0.073
50	120	10×12.5	790	0.072
50	150	10×12.5	870	0.068
50	180	8×20	1060	0.055
50	180	10×16	1090	0.055
50	220	10×16	1385	0.045
50	270	10×20	1500	0.043
50	330	10×25	1850	0.032
50	390	13×20	1910	0.031
50	470	13×20	2000	0.030
50	560	13×20	2150	0.028
50	680	13×25	2490	0.026
50	820	13×30	2770	0.025
50	820	16×25	2960	0.024
50	1000	16×25	3000	0.020
63	10	5×11	135	0.950
63	15	6.3×11	168	0.850
63	18	6.3×11	170	0.820
63	22	6.3×11	250	0.750
63	27	6.3×11	260	0.550
63	33	6.3×11	270	0.380
63	39	8×11.5	320	0.350
63	47	8×11.5	400	0.220
63	56	8×11.5	420	0.220
63	68	10×12.5	500	0.200
63	82	8×16	540	0.170
63	82	10×12.5	570	0.160
63	100	10×12.5	720	0.140
63	120	8×20	790	0.140
63	120	10×16	835	0.130
63	150	10×16	900	0.110
63	180	10×20	1200	0.095
63	220	10×25	1315	0.075
63	270	13×20	1400	0.071
63	330	10×30	1750	0.047

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
63	330	13×25	1870	0.045
63	390	13×25	1920	0.044
63	470	13×30	2225	0.041
63	470	16×21	1970	0.043
63	560	16×25	2350	0.039
63	680	16×31.5	2600	0.035
63	820	16×31.5	2650	0.031
63	1000	16×35.5	2780	0.026
63	1000	18×31.5	3230	0.028
100	4.7	5×11	105	1.600
100	5.6	5×11	116	1.490
100	6.8	5×11	120	1.450
100	10	6.3×11	170	0.700
100	15	8×11.5	255	0.610
100	18	8×11.5	270	0.560
100	22	8×11.5	320	0.480
100	27	8×11.5	340	0.390
100	33	8×16	400	0.310
100	39	8×16	425	0.290
100	39	10×12.5	440	0.270
100	47	10×12.5	450	0.250
100	56	10×16	540	0.210
100	68	10×20	630	0.180
100	82	10×20	720	0.150
100	100	10×25	890	0.120
100	120	10×25	900	0.120
100	120	13×20	980	0.110
100	150	13×20	1100	0.095
100	180	13×25	1250	0.078
100	220	13×30	1420	0.065
100	220	16×21	1270	0.075
100	270	13×35	1630	0.057
100	270	16×25	1570	0.058
100	330	13×40	1650	0.045
100	390	16×31.5	1850	0.043
100	470	16×35.5	1900	0.032
100	470	18×31.5	1700	0.038
100	560	16×41	2170	0.032
100	560	18×31.5	2100	0.031
100	680	18×35.5	2400	0.029

LZ Series Ultra Low Impedance



Features

- ◆ Ultra low impedance in 100KHz.
- ◆ Allow higher ripple current applied due to ultra low impedance.
- ◆ Endurance 2000hrs at 105℃
- ◆ Suitable for application of mother board, computer peripheral etc.
- ◆ RoHS Compliant

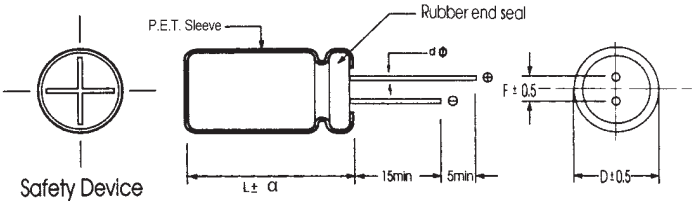
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 ~ +105℃
Rated Voltage Range	6.3 ~ 25V with rate working voltage applied
Capacitance Range	220 to 3300 μF
Capacitance Tolerance	±20% (20℃, 120Hz)
Leakage Current (+20℃,max.)	I ≦0.01CV or 3 μA After 2 minutes whichever is greater measured
Dissipation Factor (tan δ ，at 20℃，120Hz)	Rated Voltage(V) 6.3 10 16 25 D.F. (%) max 14 12 10 9 For capacitance > 1000 μF, add 2% per another 1000 μF
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated Voltage(V) 6.3 10 16 25 Z-25℃／Z+20℃ 4 3 2 2 Z-40℃／Z+20℃ 6 4 3 3 For Capacitance Value > 1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃
Endurance	Test Conditions Duration : 2000 hrs Ambient temperature : +105℃ Applied voltage : Rated DC working voltage After test requirement at +20℃ Capacitance change : Within ±25% of the initial measured value Dissipation factor : Not exceed 200% of the initial specified value Leakage current : Not exceed the specified value
Shelf Life	Test Conditions Duration : 1000 hrs Ambient temperature : +105℃ After test requirement at +20℃ Capacitance change : Within ±25% of the initial measured value Dissipation factor : Not exceed 200% of the initial specified value Leakage current : Not exceed the specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	120Hz	1KHz	10KHz	100KHz
100 ~ 330 μF	0.40	0.75	0.93	1.00
390 ~1000 μF	0.50	0.85	0.95	1.00
1200 ~ 3300 μF	0.55	0.90	0.98	1.00

Diagram of Dimensions:(unit:mm)



Dφ	8		10
F	3.5		5.0
dφ	L<20	L≧20	0.6
	0.5	0.6	

α	D<18	D=18		D>18
		L<35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
330							8x11.5	1080	0.038
470				8x11.5	1080	0.038	8x11.5	1080	0.038
							10x12.5	1500	0.027
560	8x11.5	1080	0.038	8x11.5	1080	0.038	8x16	1450	0.029
680	8x11.5	1080	0.038	8x11.5	1080	0.038	8x16	1450	0.029
				10x12.5	1500	0.037	10x12.5	1500	0.027
820	8x11.5	1080	0.038	10x12.5	1450	0.029	8x20	1850	0.020
1000	8x16	1100	0.036	8x16	1450	0.029	8x20	1850	0.020
	10x12.5	1500	0.027	10x12.5	1500	0.027	10x16	1910	0.018
1200	8x16	1450	0.029	8x20	1850	0.020	10x20	2540	0.017
1500	8x20	1850	0.020	8x20	1850	0.020	10x20	2540	0.015
	10x12.5	1500	0.027	10x16	1910	0.018			
1800	10x16	1910	0.018	10x20	2540	0.016	10x25	2800	0.013
2200	8x20	1850	0.020	10x20	2540	0.015			
	10x16	1910	0.018	10x25	2800	0.014			
2700	10x20	2540	0.013						
3300	10x30	2800	0.012						

WV / Cap(μ F)	25		
	Size	Ripple	Impedance
220	8x11.5	1080	0.032
270	8x11.5	1150	0.031
330	8x11.5	1450	0.029
	10x12.5	1850	0.027
470	8x20	1720	0.020
	10x12.5	1440	0.025
	10x16	1830	0.022
560	10x16	1850	0.021
680	8x20	1820	0.018
	10x16	1920	0.020
	10x20	2060	0.018
1000	10x20	2180	0.016

Ripple Current (mA, rms) at 105℃ 100KHz

Max ESR (Ω) at 20℃ 100KHz

CapXon

GH series

GH series

Features

◆Low impedance
◆High temperature,long life 5000 to 10000 hours at 105℃
◆AEC-Q200 qualified

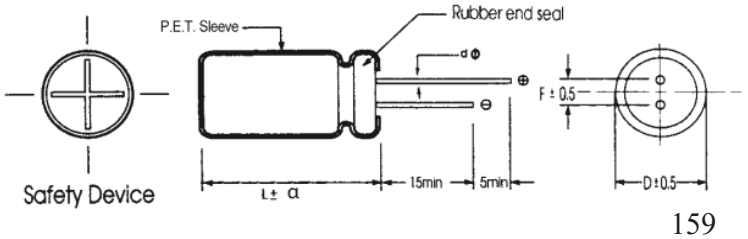
Specifications

Item	Performance Characteristics
Operating Temperature Range	-55to +105℃
Rated Voltage Range	6.3 to 100 VDC
Capacitance Range	0.47 to 12000 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦0.01CV or 3(uA)(After 2 minute with rated working voltage applied.)
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 D.F. (%)max.: 22 / 19 / 16 / 14 / 12 / 10 / 9 / 9 / 8 For capacitance>1000uF,add 2% per another 1000uF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 1.5 / 1.5 / 1.5 / 1.5 / 1.5 Z-40℃ / Z+20℃: 6 / 4 / 3 / 3 / 2 / 2 / 2 / 2 / 2 Z-55℃ / Z+20℃: 8 / 6 / 5 / 5 / 4 / 4 / 4 / 4 / 4 For capacitance>1000uF,add 0.5 per another 1000uF for -25℃/+20℃ add 1 per another 1000uF for -40℃/+20℃ add 1.5 per another 1000uF for -55℃/+20℃
Endurance	Test condition Duration time: Dφ: 5-6.3φ / 8-12φ / ≧13φ +105℃Life hours: 5000 hours / 7000 hours / 10000 hours Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦±25% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

CAP(uF) / Frequency(Hz)	120	400	1K	10K	100K
CAP≦10	0.40	0.52	0.60	0.92	1.00
10＜CAP≦100	0.67	0.80	0.83	0.94	1.00
100＜CAP≦1000	0.75	0.84	0.88	0.95	1.00
1000＜CAP	0.82	0.87	0.92	0.95	1.00

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5
dφ	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

GH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	82	5×11	198	1.63
6.3	100	5×11	210	1.45
6.3	120	5×11	222	1.28
6.3	150	6.3×11	240	1.16
6.3	180	6.3×11	282	1.04
6.3	220	6.3×11	378	0.89
6.3	270	6.3×11	396	0.77
6.3	330	6.3×11	396	0.77
6.3	330	6.3×15	426	0.68
6.3	330	8×11.5	444	0.68
6.3	390	6.3×15	462	0.58
6.3	390	8×11.5	480	0.52
6.3	470	6.3×15	504	0.41
6.3	470	8×11.5	534	0.38
6.3	470	10×12.5	564	0.38
6.3	560	8×11.5	570	0.36
6.3	560	8×16	600	0.36
6.3	560	10×12.5	612	0.36
6.3	680	8×11.5	582	0.33
6.3	680	8×16	618	0.33
6.3	680	10×12.5	642	0.33
6.3	820	8×11.5	666	0.25
6.3	820	10×12.5	720	0.25
6.3	1000	8×16	690	0.22
6.3	1000	8×20	756	0.22
6.3	1000	10×12.5	708	0.22
6.3	1200	8×20	840	0.18
6.3	1200	10×16	888	0.18
6.3	1500	8×20	1056	0.15
6.3	1500	10×16	1128	0.12
6.3	1500	10×20	1176	0.12
6.3	1800	8×25	1230	0.11
6.3	1800	10×20	1308	0.11
6.3	2200	10×20	1350	0.10
6.3	2200	10×25	1362	0.10
6.3	2700	10×25	1488	0.09
6.3	2700	10×30	1560	0.09
6.3	2700	13×20	1512	0.09
6.3	3300	10×30	1620	0.085
6.3	3300	13×20	1584	0.085
6.3	3900	13×25	1860	0.080
6.3	4700	13×25	1938	0.075
6.3	4700	13×30	1992	0.070
6.3	5600	13×30	1992	0.068
6.3	5600	16×25	2196	0.068
6.3	6800	13×30	2520	0.063
6.3	6800	16×25	2718	0.063
10	22	5×11	66	3.08
10	27	5×11	72	2.67
10	33	5×11	72	2.33
10	39	5×11	120	2.02
10	47	5×11	132	1.71
10	56	5×11	144	1.47
10	68	5×11	162	1.30
10	82	5×11	192	1.15
10	100	5×11	222	1.02
10	100	6.3×11	240	1.02
10	120	5×11	246	1.02
10	120	6.3×11	258	1.02
10	150	6.3×11	282	0.95

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
10	180	6.3×11	318	0.68
10	220	6.3×11	366	0.60
10	220	6.3×15	390	0.58
10	270	6.3×15	414	0.56
10	270	8×11.5	420	0.53
10	330	6.3×11	402	0.50
10	330	6.3×15	462	0.47
10	330	8×11.5	492	0.45
10	390	6.3×15	456	0.42
10	390	8×11.5	516	0.42
10	470	6.3×15	480	0.37
10	470	8×11.5	552	0.30
10	560	8×11.5	588	0.28
10	560	8×16	636	0.25
10	560	10×12.5	636	0.25
10	680	8×16	660	0.21
10	680	8×20	684	0.20
10	680	10×12.5	684	0.20
10	820	8×16	732	0.20
10	820	8×20	828	0.18
10	820	10×12.5	876	0.16
10	820	10×16	936	0.16
10	1000	8×16	1020	0.16
10	1000	8×20	1122	0.14
10	1000	10×12.5	1032	0.14
10	1000	10×16	1140	0.13
10	1200	8×20	1248	0.13
10	1200	10×16	1272	0.13
10	1200	10×20	1368	0.12
10	1500	10×20	1536	0.106
10	1500	13×16	1620	0.110
10	1800	10×25	1650	0.102
10	1800	13×20	1704	0.098
10	2200	10×25	1776	0.095
10	2200	10×30	1860	0.093
10	2200	13×20	1872	0.093
10	2200	16×16	1926	0.093
10	2700	10×30	2076	0.084
10	2700	13×20	2028	0.084
10	2700	13×25	2124	0.084
10	2700	18×16	2241	0.084
10	3300	10×30	2232	0.070
10	3300	13×25	2268	0.070
10	3300	16×25	2316	0.070
10	3900	13×25	2304	0.065
10	3900	13×30	2376	0.065
10	3900	16×21	2362	0.070
10	3900	16×25	2544	0.065
10	4700	13×30	2484	0.065
10	4700	13×35	2568	0.060
10	4700	16×25	2634	0.057
10	5600	13×35	2640	0.054
10	5600	16×25	2473	0.054
10	5600	16×31.5	2736	0.050
10	5600	18×21	2460	0.057
10	6800	16×31.5	2964	0.046
10	6800	18×25	2866	0.052
10	8200	16×35.5	3350	0.043
10	8200	18×31.5	3392	0.044
10	10000	16×41	3850	0.040

CapXon

GH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
10	10000	18×35.5	3850	0.041
10	12000	18×41	4150	0.037
16	10	5×11	36	3.90
16	15	5×11	72	3.32
16	22	5×11	72	2.64
16	27	5×11	132	2.37
16	33	5×11	144	2.00
16	39	5×11	168	1.61
16	47	5×11	186	1.35
16	56	5×11	210	1.24
16	68	5×11	228	1.18
16	82	6.3×11	264	1.03
16	100	5×11	228	1.10
16	100	6.3×11	264	0.86
16	120	6.3×11	312	0.66
16	150	6.3×11	336	0.58
16	150	6.3×15	396	0.58
16	180	6.3×15	420	0.56
16	180	8×11.5	426	0.54
16	220	6.3×15	504	0.52
16	220	8×11.5	540	0.46
16	270	6.3×15	540	0.42
16	270	8×11.5	582	0.38
16	330	6.3×15	588	0.34
16	330	8×11.5	588	0.37
16	330	8×16	618	0.35
16	390	8×11.5	612	0.33
16	390	8×16	654	0.33
16	390	10×12.5	648	0.33
16	470	8×16	846	0.29
16	470	8×20	900	0.28
16	470	10×12.5	882	0.28
16	560	8×16	864	0.26
16	560	8×20	936	0.24
16	560	10×12.5	882	0.24
16	560	10×16	960	0.20
16	680	8×20	960	0.20
16	680	10×16	1044	0.18
16	820	8×20	1104	0.17
16	820	10×16	1254	0.15
16	820	10×20	1320	0.15
16	1000	10×16	1404	0.14
16	1000	10×20	1476	0.12
16	1200	10×20	1500	0.13
16	1200	10×25	1578	0.11
16	1500	10×25	1620	0.096
16	1500	13×20	1728	0.095
16	1500	16×16	1778	0.095
16	1800	10×30	1776	0.097
16	1800	13×20	1854	0.094
16	1800	13×25	1956	0.090
16	2200	13×20	2082	0.090
16	2200	13×25	2340	0.085
16	2200	18×16	2300	0.090
16	2700	13×25	2436	0.076
16	2700	13×30	2496	0.072
16	2700	16×21	2362	0.074
16	2700	16×25	2544	0.072
16	3300	13×30	2562	0.068
16	3300	13×35	2628	0.066

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
16	3300	16×25	2700	0.064
16	3900	13×35	2664	0.050
16	3900	16×25	2736	0.060
16	3900	16×31.5	2856	0.058
16	3900	18×21	2721	0.060
16	4700	16×31.5	2886	0.050
16	4700	18×25	2844	0.055
16	5600	16×35.5	2968	0.046
16	5600	18×31.5	3084	0.048
16	5600	18×35.5	3168	0.045
16	6800	16×41	3252	0.040
16	6800	18×35.5	3252	0.040
16	8200	18×35.5	3750	0.038
16	10000	18×41	4150	0.036
25	10	5×11	66	3.01
25	15	5×11	120	2.64
25	22	5×11	144	2.30
25	27	5×11	156	2.03
25	33	5×11	174	1.72
25	39	5×11	174	1.50
25	47	5×11	222	1.37
25	47	6.3×11	240	1.28
25	56	5×11	264	1.25
25	68	6.3×11	300	0.97
25	82	6.3×11	312	0.79
25	100	6.3×11	360	0.68
25	100	8×11.5	516	0.54
25	120	6.3×11	402	0.58
25	120	6.3×15	462	0.56
25	150	6.3×15	510	0.54
25	150	8×11.5	528	0.52
25	180	6.3×15	546	0.51
25	180	8×11.5	552	0.46
25	220	8×11.5	618	0.42
25	220	8×16	642	0.40
25	270	8×11.5	750	0.34
25	270	8×16	756	0.32
25	270	10×12.5	816	0.32
25	330	8×16	960	0.25
25	330	10×12.5	924	0.24
25	470	8×20	1056	0.23
25	470	10×12.5	1020	0.21
25	470	10×16	1080	0.21
25	560	8×20	1224	0.17
25	560	10×16	1260	0.15
25	680	10×20	1470	0.11
25	680	13×16	1550	0.10
25	820	10×20	1668	0.11
25	820	10×25	1704	0.10
25	1000	10×25	1812	0.093
25	1000	13×20	1872	0.090
25	1000	16×16	1926	0.088
25	1200	13×20	2028	0.082
25	1200	18×16	2241	0.080
25	1500	13×20	2124	0.067
25	1500	13×25	2190	0.065
25	1800	13×30	2310	0.058
25	1800	16×21	2173	0.056
25	1800	16×25	2340	0.058
25	2200	13×30	2592	0.052

CapXon

GH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
25	2200	16×25	2712	0.050
25	2200	18×21	2697	0.052
25	2700	13×35	2850	0.050
25	2700	16×25	2674	0.048
25	2700	16×31.5	2958	0.046
25	3300	16×31.5	3204	0.038
25	3300	16×35.5	3288	0.036
25	3300	18×25	3156	0.041
25	3900	16×35.5	3500	0.036
25	3900	18×31.5	3544	0.036
25	4700	16×41	3800	0.034
25	4700	18×35.5	3800	0.034
25	5600	18×41	4100	0.030
35	10	5×11	84	2.65
35	15	5×11	144	2.29
35	22	5×11	162	1.90
35	27	5×11	174	1.58
35	27	6.3×11	198	1.42
35	33	5×11	222	1.25
35	33	6.3×11	240	1.25
35	39	6.3×11	252	1.10
35	47	5×11	232	0.10
35	47	6.3×11	264	0.92
35	56	6.3×11	282	0.75
35	56	6.3×15	306	0.68
35	68	6.3×11	312	0.62
35	68	6.3×15	348	0.55
35	82	6.3×15	354	0.51
35	82	8×11.5	384	0.47
35	100	6.3×11	329	0.49
35	100	6.3×15	378	0.47
35	100	8×11.5	414	0.45
35	120	8×11.5	546	0.42
35	120	8×16	612	0.38
35	150	8×11.5	618	0.38
35	150	8×16	714	0.35
35	150	10×12.5	720	0.35
35	180	8×16	792	0.32
35	180	10×12.5	804	0.32
35	220	8×16	864	0.26
35	220	8×20	936	0.24
35	220	10×12.5	888	0.24
35	270	8×20	1056	0.22
35	270	10×12.5	984	0.24
35	270	10×16	1068	0.21
35	330	8×20	1140	0.16
35	330	10×16	1176	0.15
35	470	10×20	1302	0.11
35	470	10×25	1398	0.10
35	470	13×16	1272	0.11
35	470	13×20	1398	0.10
35	560	10×25	1572	0.096
35	560	13×20	1584	0.096
35	680	10×25	1680	0.084
35	680	13×20	1692	0.082
35	680	16×16	1741	0.080
35	820	13×20	1818	0.068
35	820	13×25	1944	0.062
35	1000	10×30	2136	0.060
35	1000	13×25	2184	0.060

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
35	1000	13×30	2280	0.058
35	1000	18×16	2189	0.056
35	1200	13×25	2292	0.052
35	1200	16×21	2384	0.052
35	1200	16×25	2568	0.050
35	1500	13×35	2820	0.048
35	1500	16×31.5	2928	0.048
35	1800	13×35	2976	0.045
35	1800	16×25	2722	0.048
35	1800	16×31.5	3012	0.045
35	1800	18×21	2708	0.048
35	2200	16×31.5	3228	0.036
35	2200	18×25	3132	0.036
35	2700	16×35.5	3295	0.032
35	2700	18×31.5	3336	0.032
35	3300	16×41	3800	0.029
35	3300	18×35.5	3800	0.029
35	3900	18×41	4100	0.026
50	0.47	5×11	12	7.23
50	1	5×11	24	4.31
50	2.2	5×11	36	3.60
50	3.3	5×11	48	3.50
50	4.7	5×11	66	3.30
50	5.6	5×11	96	3.20
50	6.8	5×11	96	3.00
50	8.2	5×11	108	2.80
50	10	5×11	120	2.60
50	15	5×11	150	1.87
50	22	5×11	162	1.60
50	22	6.3×11	168	1.27
50	27	6.3×11	192	1.02
50	33	6.3×11	282	0.87
50	33	6.3×15	296	0.85
50	39	6.3×11	306	0.72
50	39	6.3×15	330	0.70
50	47	6.3×11	303	0.06
50	47	6.3×15	348	0.55
50	47	8×11.5	366	0.55
50	56	6.3×11	324	0.05
50	56	8×11.5	378	0.47
50	68	8×11.5	420	0.36
50	82	6.3×15	462	0.35
50	82	8×11.5	492	0.32
50	82	8×16	528	0.28
50	100	8×11.5	540	0.28
50	100	8×16	576	0.25
50	120	8×16	630	0.25
50	150	8×16	696	0.24
50	150	8×20	756	0.24
50	150	10×12.5	702	0.25
50	150	10×16	780	0.24
50	180	8×20	864	0.24
50	180	10×16	912	0.24
50	220	10×16	1056	0.24
50	220	10×20	1122	0.20
50	270	10×20	1212	0.10
50	270	10×25	1284	0.10
50	270	13×16	1278	0.10
50	330	10×25	1404	0.095
50	330	13×20	1500	0.082

CapXon

GH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
50	470	10×30	1750	0.078
50	470	13×20	1776	0.078
50	470	13×25	1860	0.078
50	470	16×16	1827	0.078
50	560	13×20	2094	0.075
50	560	13×25	2172	0.070
50	560	18×16	2314	0.073
50	680	13×25	2304	0.057
50	680	16×25	2376	0.057
50	820	13×30	2412	0.052
50	820	16×21	2085	0.054
50	820	16×31.5	2484	0.052
50	1000	13×40	2750	0.048
50	1000	16×25	2676	0.050
50	1000	16×31.5	2736	0.048
50	1000	18×21	2662	0.050
50	1200	16×31.5	2952	0.045
50	1200	16×35.5	3048	0.042
50	1200	18×25	2854	0.047
50	1500	16×35.5	3216	0.038
50	1800	16×41	3550	0.035
50	1800	18×31.5	3368	0.035
50	2200	18×35.5	3550	0.032
50	2700	18×41	3790	0.030
50	3300	18×41	3810	0.028
63	10	5×11	116	3.02
63	15	5×11	131	2.37
63	22	5×11	151	1.77
63	22	6.3×11	194	1.39
63	27	6.3×11	202	1.29
63	33	6.3×11	228	1.01
63	39	6.3×11	243	0.89
63	47	6.3×11	264	0.75
63	47	8×11.5	313	0.73
63	56	8×11.5	320	0.70
63	68	8×11.5	378	0.50
63	68	8×16	477	0.42
63	82	8×11.5	390	0.47
63	82	8×16	477	0.42
63	82	10×12.5	481	0.43
63	100	8×16	515	0.36
63	100	10×12.5	515	0.38
63	120	8×16	512	0.36
63	120	8×20	604	0.32
63	120	10×12.5	528	0.36
63	120	10×16	639	0.30
63	150	8×20	604	0.32
63	150	10×16	666	0.28
63	180	8×25	742	0.26
63	180	10×16	662	0.28
63	180	10×20	757	0.26
63	220	8×25	789	0.23
63	220	10×16	730	0.23
63	220	10×20	892	0.20
63	220	13×16	911	0.20
63	270	10×20	986	0.16
63	270	13×20	1241	0.13
63	330	10×25	1242	0.13
63	330	13×16	1086	0.15
63	330	13×20	1282	0.13

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
63	330	13×25	1611	0.100
63	390	13×25	1618	0.093
63	470	13×20	1516	0.093
63	470	13×25	1698	0.090
63	470	13×30	1863	0.088
63	470	16×21	1857	0.082
63	560	13×25	1727	0.087
63	560	13×30	1942	0.081
63	560	16×21	1857	0.082
63	680	13×30	2082	0.071
63	680	13×35	2273	0.068
63	680	16×21	1835	0.084
63	820	13×40	2454	0.066
63	820	16×25	2229	0.066
63	820	18×21	2108	0.073
63	1000	13×45	2653	0.063
63	1000	16×31.5	2690	0.056
63	1000	18×25	2307	0.071
63	1200	16×31.5	2727	0.054
63	1200	18×25	2470	0.062
63	1500	18×31.5	2997	0.051
63	1500	18×35.5	3256	0.048
63	1800	16×41	3760	0.036
63	1800	18×35.5	3481	0.042
63	2200	18×41	3938	0.035
80	10	5×11	100	4.07
80	15	5×11	113	3.20
80	22	6.3×11	167	1.88
80	27	6.3×11	174	1.74
80	33	6.3×11	196	1.37
80	39	8×11.5	244	1.20
80	47	8×11.5	265	1.02
80	56	8×11.5	275	0.95
80	56	8×16	326	0.90
80	68	8×16	380	0.66
80	68	10×12.5	388	0.66
80	82	8×16	389	0.63
80	82	10×12.5	388	0.66
80	100	8×20	509	0.45
80	100	10×16	522	0.45
80	100	13×16	634	0.44
80	120	10×16	534	0.43
80	150	10×20	657	0.35
80	150	13×16	665	0.40
80	180	10×20	677	0.33
80	180	10×25	755	0.32
80	180	13×16	721	0.34
80	220	10×25	767	0.31
80	220	13×20	830	0.31
80	270	13×20	890	0.27
80	270	13×25	1019	0.25
80	330	13×20	1060	0.19
80	330	16×21	1253	0.18
80	390	13×30	1427	0.15
80	470	13×30	1533	0.13
80	470	13×35	1711	0.12
80	470	16×25	1432	0.16
80	470	18×21	1471	0.15
80	560	13×40	1685	0.14
80	560	16×25	1479	0.15

CapXon

GH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
80	560	18×21	1471	0.15
80	680	16×31.5	1757	0.13
80	680	18×25	1582	0.15
80	820	16×35.5	1929	0.12
80	820	18×25	1699	0.13
80	1000	16×35.5	1929	0.12
80	1000	16×41	2151	0.11
80	1000	18×31.5	2041	0.11
80	1200	16×41	2378	0.09
80	1200	18×35.5	2315	0.095
80	1500	16×41	2461	0.084
80	1500	18×41	2641	0.083
80	1800	18×41	2657	0.082
100	4.7	5×11	84	5.75
100	5.6	5×11	90	5.00
100	6.8	5×11	96	4.36
100	8.2	5×11	105	3.68
100	10	6.3×11	141	2.63
100	10	8×11.5	180	2.20
100	15	6.3×11	151	2.31
100	22	6.3×11	168	1.85
100	22	8×11.5	228	1.38
100	27	8×11.5	234	1.31
100	33	8×11.5	240	1.24
100	39	8×16	282	1.20
100	47	8×16	335	0.85
100	47	10×12.5	350	0.81
100	47	10×16	357	0.78
100	56	8×16	354	0.76
100	56	8×20	414	0.68
100	56	10×12.5	364	0.75
100	68	8×20	424	0.65
100	68	10×16	425	0.68
100	82	8×20	474	0.52
100	82	10×16	486	0.52
100	100	8×30	636	0.42
100	100	10×16	522	0.45
100	100	10×20	596	0.42
100	100	13×16	641	0.43
100	100	13×20	750	0.38
100	120	8×35	738	0.36
100	120	10×20	611	0.40
100	120	10×25	702	0.37
100	120	13×16	665	0.40
100	150	10×25	743	0.33
100	150	10×30	834	0.31
100	150	13×20	805	0.33
100	180	13×20	858	0.29
100	180	13×25	963	0.28
100	220	13×20	890	0.27
100	220	13×25	1019	0.25
100	220	16×16	915	0.27
100	220	16×21	1063	0.25
100	270	10×40	1107	0.23
100	270	13×30	1236	0.20
100	270	16×25	1281	0.20
100	330	13×30	1382	0.16
100	330	13×35	1584	0.14
100	330	16×25	1531	0.14
100	390	13×40	1748	0.13

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
100	390	18×25	1582	0.15
100	470	16×25	1479	0.15
100	470	16×31.5	1910	0.11
100	470	18×25	1637	0.14
100	560	16×35.5	1854	0.13
100	560	18×31.5	1877	0.13
100	680	16×35.5	1929	0.12
100	680	18×35.5	2151	0.11
100	820	18×35.5	2202	0.105
100	820	18×41	2406	0.100
100	1000	18×41	2469	0.095

CapXon

GT series

GT series 105℃ Miniaturized,Long life

Features

◆long life:105℃ 10000hours
◆ RoHS Compliance.

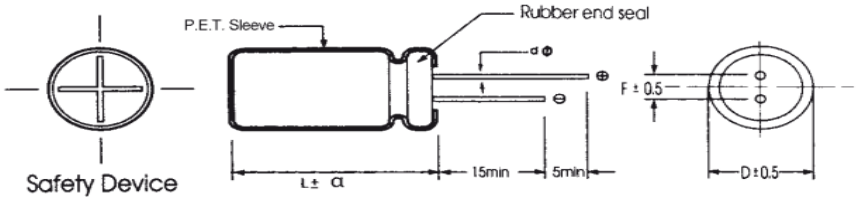
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	10~100 V.DC
Capacitance Tolerance	±20%（120Hz,+20℃）
Leakage Current(+20℃,max.)	I≦0.01CV or 3uA whichever is greater.(After 2 minutes) I=Leakage Current(uA) C=Rated Capacitance V=Rated voltage（V）
Dissipation Factor (tanδ, at 20℃，120Hz)	Working Voltage(VDC): 10 / 16 / 25 / 35 / 50 / 63 / 100 D.F. (%)max.: 45 / 35 / 30 / 22 / 19 / 17 / 15
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 10 / 16 / 25 / 35 / 50 / 63 / 100 Z-25℃ / Z+20℃: 10 / 8 / 6 / 6 / 5 / 5 / 5 For capacitance>1000uF,add 1 per another 1000uF for -40℃/+20℃
Endurance	Duration time :10000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : with±25% of the initial measured value Dissipation factor :≦ 300% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test condition Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

CAP(uF) / Frequency(Hz)	120	1K	10K	100K≦
1~10uF	0.42	0.60	0.80	1.00
22~33uF	0.55	0.75	0.90	1.00
47~330uF	0.70	0.85	0.95	1.00

Diagram of Dimensions:(unit:mm)



Dφ	5.0	6.3	8
F	2.0	2.5	3.5
dφ	0.5	L<20	L≧20
		0.5	0.6
α	L≦16:α=1.5		

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)
10	100	5×11	140
10	220	6.3×11	220
10	330	8×11.5	340
16	47	5×11	140
16	100	6.3×11	220
16	220	8×11.5	340
25	33	5×11	140
25	47	5×11	140
25	100	6.3×11	220
35	33	5×11	90
35	47	6.3×11	220
35	100	8×11.5	340
50	1	5×11	26
50	2.2	5×11	36
50	3.3	5×11	75
50	4.7	5×11	85
50	10	5×11	95
50	22	5×11	140
50	33	6.3×11	200
50	47	6.3×11	200
50	100	8×11.5	280
63	10	5×11	85
63	22	6.3×11	180
63	33	6.3×11	180
63	47	8×11.5	250
100	1	5×11	40
100	2.2	5×11	50
100	3.3	5×11	60
100	4.7	5×11	70
100	10	6.3×11	150
100	22	8×11.5	230

CapXon

FH series

FH Series 105℃ high ripple current at frequency range

Feature

◆New innovative electrolyte is employed to minimize ESR
◆Long life 4000 to 10000 hours at 105℃
◆Non solvent proof type
◆6.3 to 100VDC newly type
◆RoHS compliance.

Specificatio

Item	Performance Characteristics
Operating Temperature	-40 to +105℃
Rated Voltage Range	6.3~100V.DC
capacitance range	6.8~18000uF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦0.01CV or 3μA whichever is greater, with rated working voltage applied(After 2 minutes). I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)

Dissipation Factor (tanδ，at 20℃，120Hz)

working voltage(VDC)	6.3	10	16	25	35	50	63	100
D.F.(%)max	22	19	16	14	12	10	9	8

For capacitance ＞1000μF,add 2% per another 1000μF

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	6.3	10	16	25	35	50	63	100
Z-25℃ / Z+20℃	4	3	2	2	2	2	2	2
Z-40℃ / Z+20℃	8	6	4	3	3	3	3	3

Endurance

Test conditions
Duration time:

size		φD≦6.3	ΦD=8,10	φD≧13
voltage	6.3~10WV	4000hrs	6000hrs	8000hrs
	16~100WV	5000hrs	7000hrs	10000hrs

Ambient temperature :+105℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃
Capacitance change : within±25% of the initial measured value
Dissipation factor :≦ 200% of the initial specified value
Leakage current :≦ The initial specified value

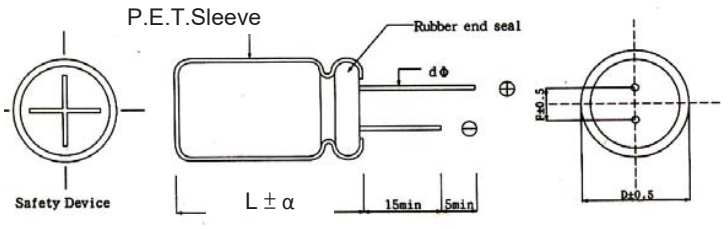
Shelf Life

Test conditions
Duration time :1000Hrs
Ambient temperature :+105℃
Applied voltage :None
After test requirement at +20℃:Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

CAP(μ	50(60)	120	400	1K	10K	100K
CAP≦10	0.47	0.59	0.76	0.85	0.97	1.00
10＜CAP≦100	0.52	0.62	0.80	0.89	0.97	1.00
100＜CAP≦1000	0.58	0.72	0.84	0.90	0.98	1.00
1000＜CAP	0.63	0.78	0.87	0.91	0.98	1.00

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18
F	2	2.5	3.5		5.0		7.5	
dφ	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				

α	D < 18	D=18		D > 18
		L < 35.5	L≧35.5	
	1.5	1.5	2.0	2.0

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FH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	150	5×11	220	0.550
6.3	220	6.3×11	300	0.260
6.3	330	6.3×11	350	0.210
6.3	470	8×11.5	440	0.140
6.3	680	8×11.5	650	0.130
6.3	820	10×12.5	870	0.090
6.3	1000	8×16	850	0.080
6.3	1200	8×20	1060	0.075
6.3	1200	10×16	1220	0.064
6.3	1500	10×20	1410	0.050
6.3	1800	13×16	1460	0.049
6.3	2200	10×25	1660	0.046
6.3	2700	16×16	1950	0.042
6.3	3300	13×20	1910	0.038
6.3	3900	13×25	2240	0.029
6.3	3900	18×16	2220	0.040
6.3	4700	13×30	2660	0.027
6.3	5600	13×35	2890	0.024
6.3	5600	16×21	2540	0.027
6.3	6800	13×40	3360	0.017
6.3	6800	16×25	2940	0.021
6.3	6800	18×21	2870	0.026
6.3	8200	16×31.5	3460	0.017
6.3	10000	16×35.5	3620	0.015
6.3	10000	18×25	3150	0.019
6.3	12000	16×41	4090	0.013
6.3	12000	18×31.5	4180	0.015
6.3	15000	18×35.5	4230	0.014
6.3	18000	18×41	4290	0.012
10	100	5×11	220	0.580
10	220	6.3×11	350	0.230
10	330	6.3×11	450	0.220
10	470	8×11.5	650	0.130
10	680	8×16	850	0.096
10	680	10×12.5	870	0.085
10	820	10×16	950	0.075
10	1000	8×20	1060	0.072
10	1000	10×16	1220	0.064
10	1200	10×20	1410	0.045
10	1500	10×25	1560	0.043
10	1500	13×16	1460	0.049
10	2200	10×30	1920	0.030
10	2200	13×20	1910	0.035
10	2200	16×16	1950	0.042
10	2700	18×16	2220	0.043
10	3300	13×25	2240	0.029
10	3900	13×30	2660	0.025
10	3900	16×21	2540	0.027
10	4700	13×35	2890	0.020
10	5600	13×40	3360	0.017
10	5600	16×25	2940	0.021
10	5600	18×21	2870	0.026
10	6800	16×31.5	3460	0.017
10	6800	18×25	3150	0.019
10	8200	16×35.5	3620	0.015
10	8200	18×31.5	4180	0.015
10	10000	16×41	4090	0.013
10	10000	18×35.5	4230	0.014
10	12000	18×41	4290	0.012
16	56	5×11	220	0.560

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
16	100	6.3×11	300	0.220
16	120	6.3×11	350	0.215
16	220	8×11.5	500	0.180
16	330	8×11.5	650	0.140
16	470	8×11.5	740	0.100
16	470	8×16	850	0.095
16	470	10×12.5	870	0.085
16	680	8×20	1060	0.080
16	680	10×16	1220	0.060
16	820	10×20	1300	0.052
16	1000	10×20	1410	0.046
16	1000	13×16	1460	0.050
16	1200	10×25	1660	0.044
16	1500	10×25	1770	0.036
16	1500	10×30	1920	0.031
16	1500	13×20	1910	0.037
16	1500	16×16	1950	0.042
16	1800	10×25	1800	0.036
16	1800	13×25	2080	0.030
16	2200	13×25	2240	0.026
16	2200	18×16	2220	0.043
16	2700	13×30	2660	0.023
16	2700	16×21	2540	0.027
16	3300	13×35	2890	0.022
16	3900	13×40	3360	0.017
16	3900	16×25	2940	0.021
16	3900	18×21	2870	0.026
16	4700	16×31.5	3460	0.017
16	4700	18×25	3150	0.020
16	5600	16×35.5	3620	0.015
16	5600	18×31.5	4180	0.015
16	6800	16×41	4090	0.013
16	8200	18×35.5	4230	0.014
16	10000	18×41	4290	0.012
25	47	5×11	220	0.560
25	56	5×11	260	0.560
25	100	6.3×11	350	0.250
25	220	8×11.5	650	0.150
25	330	8×16	850	0.092
25	330	10×12.5	870	0.082
25	470	8×20	1060	0.074
25	470	10×12.5	1100	0.074
25	470	10×16	1220	0.068
25	680	10×20	1410	0.050
25	680	13×16	1460	0.049
25	820	10×25	1660	0.041
25	1000	10×30	1920	0.032
25	1000	13×20	1910	0.036
25	1000	16×16	1950	0.042
25	1200	18×16	2220	0.043
25	1500	13×25	2240	0.028
25	1800	13×30	2660	0.024
25	1800	16×21	2540	0.027
25	2200	13×30	2695	0.025
25	2200	13×35	2890	0.023
25	2200	18×21	2870	0.026
25	2700	13×40	3360	0.017
25	2700	16×25	2940	0.022
25	3300	16×31.5	3460	0.017
25	3300	18×25	3150	0.019

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FH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
25	3900	16×35.5	3620	0.015
25	3900	18×31.5	4180	0.015
25	4700	16×41	4090	0.013
25	4700	18×35.5	4230	0.014
25	5600	18×41	4290	0.012
35	33	5×11	230	0.550
35	47	5×11	300	0.450
35	56	6.3×11	360	0.210
35	100	6.3×11	480	0.180
35	150	8×11.5	680	0.140
35	220	8×11.5	870	0.095
35	220	8×16	1000	0.090
35	220	10×12.5	1060	0.080
35	270	8×20	1180	0.070
35	330	10×16	1380	0.062
35	470	10×20	1800	0.048
35	470	13×16	1560	0.049
35	560	10×25	1900	0.042
35	680	10×30	2000	0.035
35	680	13×20	2100	0.034
35	680	16×16	2050	0.042
35	1000	13×20	2180	0.038
35	1000	13×25	2400	0.028
35	1000	18×16	2220	0.043
35	1200	13×30	2800	0.024
35	1200	16×21	2800	0.028
35	1500	13×35	3000	0.022
35	1800	13×40	3360	0.017
35	1800	16×25	2940	0.020
35	1800	18×21	2870	0.026
35	2200	16×31.5	3460	0.017
35	2200	18×21	2930	0.025
35	2200	18×25	3150	0.019
35	2700	16×35.5	3620	0.018
35	2700	18×31.5	4180	0.016
35	3300	16×41	4090	0.013
35	3300	18×35.5	4230	0.014
35	3900	18×41	4300	0.012
50	22	5×11	220	0.650
50	47	6.3×11	270	0.370
50	56	6.3×11	300	0.290
50	100	8×11.5	680	0.160
50	120	8×16	760	0.120
50	150	10×12.5	800	0.120
50	180	8×20	1000	0.090
50	220	10×16	1300	0.082
50	270	10×20	1350	0.060
50	270	13×16	1270	0.061
50	330	10×25	1600	0.057
50	470	10×30	1800	0.048
50	470	13×20	1740	0.045
50	470	16×16	1710	0.055
50	560	13×25	1960	0.042
50	560	18×16	1940	0.054
50	680	13×30	2320	0.030
50	820	13×35	2520	0.025
50	820	16×21	2220	0.034
50	1000	13×35	2650	0.024
50	1000	13×40	2930	0.021
50	1000	16×25	2565	0.025

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
50	1000	18×21	2500	0.036
50	1200	16×31.5	3020	0.030
50	1200	18×25	2750	0.026
50	1500	16×35.5	3160	0.019
50	1800	16×41	3720	0.016
50	1800	18×31.5	3645	0.021
50	2200	18×35.5	3690	0.017
50	2700	18×41	3810	0.014
50	3300	18×41	3810	0.014
63	15	5×11	65	1.800
63	33	6.3×11	260	1.200
63	47	8×11.5	360	0.660
63	56	8×11.5	380	0.600
63	82	8×16	460	0.440
63	82	10×12.5	500	0.430
63	100	10×12.5	640	0.340
63	120	8×20	700	0.320
63	120	10×16	760	0.300
63	180	10×20	880	0.190
63	180	13×16	800	0.180
63	220	10×20	995	0.188
63	220	10×25	1100	0.185
63	270	10×30	1200	0.120
63	270	13×20	1200	0.160
63	270	16×16	1200	0.110
63	330	13×25	1600	0.120
63	390	18×16	1610	0.096
63	470	13×30	1800	0.100
63	470	16×21	1500	0.077
63	560	13×35	2000	0.070
63	560	16×25	2000	0.073
63	680	13×40	2200	0.070
63	680	18×21	1600	0.072
63	820	16×31.5	2400	0.054
63	820	18×25	1800	0.052
63	1000	16×35.5	2500	0.048
63	1000	18*25	2290	0.052
63	1000	18×31.5	2800	0.047
63	1200	16×41	2920	0.040
63	1200	18×31.5	2850	0.045
63	1200	18×35.5	3000	0.039
63	1500	18×41	3200	0.036
100	6.8	5×11	65	1.800
100	15	6.3×11	130	1.000
100	27	8×11.5	300	0.610
100	39	8×16	340	0.360
100	47	10×12.5	400	0.420
100	56	8×20	410	0.260
100	68	10×16	460	0.300
100	82	10×20	600	0.210
100	82	13×16	540	0.180
100	100	10×25	800	0.200
100	120	10×30	830	0.120
100	120	13×20	900	0.160
100	150	13×20	1000	0.110
100	150	16×16	1000	0.110
100	180	13×25	1010	0.096
100	180	18×16	1180	0.096
100	220	13×30	1210	0.080
100	220	16×21	1140	0.077

CapXon

FH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
100	270	13×35	1450	0.070
100	270	16×25	1480	0.073
100	330	13×40	1600	0.071
100	330	18×21	1400	0.072
100	390	16×31.5	1700	0.055
100	390	18×25	1740	0.054
100	470	16×35.5	1910	0.047
100	470	18×31.5	1730	0.047
100	560	16×41	2140	0.036
100	680	18×35.5	2000	0.042
100	820	18×41	2480	0.040
100	1000	18×41	2580	0.038

CapXon

ZH series

ZH Series 105℃ Miniaturized,Long Life,Low impedance

Features

◆Long Life:105℃ 6000~10000hours.
◆RoHS compliance.

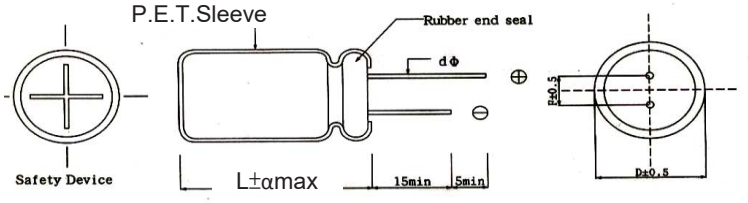
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3~100V.DC
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦0.01CV or 3μA whichever is greater. (After 2 minutes) I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)
Dissipation Factor (tanδ，at 20℃，120Hz)	working voltage(VDC) 6.3 10 16 25 35 63 80 100 D.F.(%)max 22 19 16 14 12 9 8 8 For capacitance ＞1000μF,add 2% per another 1000μF
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC) 6.3 10 16 25 35 63 80 100 Z-25℃ / Z+20℃ 2 2 2 2 2 2 2 2 Z-40℃ / Z+20℃ 3 3 3 3 3 3 3 3 For capacitance ＞1000μF,add 0.5 per another 1000μF for -25℃/+20℃ add 1 per another 1000μF for -40℃/+20℃
Endurance	Test conditions Duration time :As right Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦±25% of the initial measured value(6.3V,10V:±30%) Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value Dφ / life hours: ≦6.3 / 6000; 8 / 8000; ≧10 / 10000
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)\Frequency(Hz)	120	1K	10K	100KHz≦
8.2~33	0.42	0.70	0.90	1.00
47~270	0.50	0.73	0.92	1.00
330~680	0.55	0.77	0.94	1.00
820~1800	0.60	0.80	0.96	1.00
2200~8200	0.70	0.85	0.98	1.00

Diagram of Dimensions:(unit:mm)



φD	5	6	8		10	13	16	18
F	2	3	3.5		5		7.5	
φd	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				
α	L≦16:α=1.5 L≧20:α=2.0							

CapXon

ZH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
6.3	220	5×11	355	0.230
6.3	470	6.3×11	550	0.100
6.3	820	8×11.5	955	0.060
6.3	1200	8×16	1260	0.050
6.3	1200	10×12.5	1340	0.044
6.3	1500	8×20	1510	0.034
6.3	1800	10×16	1770	0.033
6.3	2200	10×20	1970	0.025
6.3	2700	10×25	2260	0.023
6.3	3900	13×20	2490	0.022
6.3	4700	13×25	2910	0.020
6.3	5600	13×30	3460	0.018
6.3	6800	13×35	3580	0.017
6.3	6800	16×21	3260	0.020
6.3	8200	16×25	3640	0.018
10	150	5×11	355	0.230
10	330	6.3×11	550	0.100
10	680	8×11.5	955	0.060
10	1000	8×16	1260	0.050
10	1000	10×12.5	1340	0.049
10	1500	8×20	1510	0.034
10	1500	10×16	1770	0.033
10	1800	10×20	1970	0.025
10	2200	10×25	2260	0.023
10	2700	13×20	2440	0.022
10	3300	13×20	2490	0.021
10	3900	13×25	2910	0.020
10	4700	13×30	3460	0.018
10	4700	16×21	3260	0.020
10	5600	13×35	3580	0.017
10	6800	16×25	3640	0.018
16	100	5×11	355	0.230
16	220	6.3×11	550	0.100
16	470	8×11.5	955	0.060
16	680	8×16	1260	0.050
16	680	10×12.5	1340	0.044
16	1000	8×20	1510	0.034
16	1000	10×16	1770	0.033
16	1500	10×20	1970	0.025
16	1800	10×25	2260	0.023
16	2200	13×20	2490	0.022
16	2700	13×25	2910	0.020
16	3300	13×30	3460	0.018
16	3300	16×21	3260	0.023
16	3900	13×35	3580	0.017
16	4700	16×25	3640	0.018
25	68	5×11	355	0.240
25	150	6.3×11	550	0.100
25	330	8×11.5	955	0.060
25	390	8×16	1260	0.050
25	470	10×12.5	1340	0.044
25	560	8×20	1510	0.034
25	680	10×16	1770	0.033
25	820	10×20	1970	0.025
25	1000	10×20	2045	0.024
25	1000	10×25	2260	0.023
25	1500	13×20	2490	0.022
25	1800	13×25	2910	0.020
25	2200	13×30	3460	0.018
25	2200	16×21	3260	0.020

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
25	2700	13×35	3580	0.017
25	3300	16×25	3640	0.018
35	47	5×11	355	0.500
35	100	6.3×11	550	0.110
35	220	8×11.5	955	0.062
35	270	8×16	1260	0.060
35	330	10×12.5	1340	0.043
35	390	8×20	1510	0.032
35	470	10×16	1770	0.033
35	560	10×20	1970	0.030
35	680	10×25	2260	0.028
35	820	10×25	2360	0.027
35	1000	10×30	2580	0.025
35	1000	13×20	2490	0.022
35	1200	13×25	2910	0.018
35	1500	13×30	3460	0.018
35	1500	16×21	3260	0.023
35	1800	13×35	3580	0.017
35	2200	16×25	3640	0.018
50	27	5×11	248	0.400
50	56	6.3×11	395	0.150
50	100	8×11.5	755	0.110
50	120	8×16	960	0.065
50	150	10×12.5	989	0.067
50	180	8×20	1200	0.051
50	220	10×16	1380	0.046
50	270	10×20	1590	0.033
50	330	10×20	1600	0.033
50	330	10×25	1880	0.032
50	470	13×20	2060	0.032
50	560	13×25	2420	0.028
50	680	13×30	2870	0.026
50	820	13×35	2970	0.024
50	820	16×21	2740	0.028
50	1000	16×25	3020	0.026
63	18	5×11	183	0.980
63	47	6.3×11	288	0.600
63	82	8×11.5	535	0.300
63	100	8×16	698	0.200
63	120	10×12.5	735	0.165
63	150	8×20	871	0.140
63	180	10×16	1008	0.130
63	220	10×20	1110	0.120
63	270	10×20	1210	0.086
63	270	13×16	1210	0.090
63	270	13×20	1330	0.088
63	330	10×25	1420	0.076
63	330	13×25	1610	0.073
63	390	13×20	1580	0.066
63	470	13×25	2000	0.048
63	470	13×30	2170	0.046
63	470	16×21	2090	0.047
63	560	13×30	2420	0.040
63	560	16×21	2110	0.048
63	680	13×35	2630	0.038
63	820	13×40	2950	0.032
63	820	16×25	2740	0.037
63	820	18×21	2510	0.043
63	1200	16×31.5	3000	0.029
63	1200	18×25	2810	0.036

CapXon

ZH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	Max ESR(Ω) at 20℃ /100kHz
63	1500	16×35.5	3050	0.026
63	1500	18×31.5	3310	0.030
63	1800	16×41	3580	0.024
63	1800	18×35.5	3580	0.025
63	2200	18×41	3680	0.023
80	12	5×11	173	1.540
80	33	6.3×11	277	0.630
80	56	8×11.5	472	0.400
80	68	8×16	595	0.280
80	82	10×12.5	634	0.250
80	100	8×20	745	0.210
80	120	10×16	790	0.187
80	180	10×20	1050	0.130
80	180	13×16	985	0.140
80	220	10×25	1180	0.120
80	270	13×20	1440	0.094
80	330	13×25	1630	0.066
80	390	13×30	1960	0.056
80	390	16×21	1760	0.064
80	470	13×35	2150	0.047
80	560	13×40	2350	0.045
80	560	16×25	2220	0.049
80	560	18×21	1960	0.059
80	680	16×31.5	2410	0.038
80	820	16×35.5	2610	0.032
80	820	18×25	2280	0.042
80	1000	16×41	2870	0.033
80	1000	18×31.5	2480	0.036
80	1200	18×35.5	2870	0.033
80	1500	18×41	3520	0.032
100	8.2	5×11	173	1.540
100	18	6.3×11	277	0.627
100	33	8×11.5	472	0.420
100	47	8×16	595	0.400
100	56	10×12.5	634	0.350
100	68	8×20	745	0.300
100	82	10×16	790	0.220
100	100	10×20	1050	0.150
100	100	13×16	985	0.160
100	120	10×25	1180	0.140
100	150	13×20	1440	0.094
100	220	13×25	1660	0.066
100	270	13×30	1960	0.056
100	270	16×21	1760	0.064
100	330	13×35	2150	0.047
100	390	13×40	2350	0.040
100	390	16×25	2220	0.049
100	390	18×21	1960	0.059
100	470	16×31.5	2410	0.036
100	470	18×25	2280	0.042
100	560	16×35.5	2610	0.032
100	560	18×31.5	2480	0.034
100	680	16×41	2870	0.030
100	680	18×35.5	2870	0.030
100	820	18×41	3520	0.029

CapXon

KL series

KL series long life 5000hrs

Features

- ◆ used in electronic ballast,switching power supply,industrial measuring instruments.
- ◆ endurance 5000Hrs at 105℃
- ◆Safety vent construction design.
- ◆ RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	160 to 400 VDC	450 to 500 VDC
Capacitance Range	3.3 to 330 μF	2.2 to 120 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	(CV≦1000) I≦0.1CV+40(μA) / (CV＞1000) I≦0.04CV+100(μA)	After 1minutewith ratedworking voltage applied. C: ratedCapacitance (μF)，V: working voltage(V)

Dissipation Factor (tanδ，at 20℃，120Hz)

Working	160	200	250	350	400	450	500
D.F. (%)max.	12	12	12	15	15	17	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working	160	200	250	350	400	450	500
Z-25℃ / Z+20℃	3	3	3	5	5	6	6
Z-40℃ / Z+20℃	4	5	6	6	6	-	-

Endurance

Test conditions
Duration time :5000Hrs
Ambient temperature :+105℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃
Capacitance change :≦±20% of the initial measured value
Dissipation factor :≦ 200% of the initial specified value
Leakage current :≦ The initial specified value

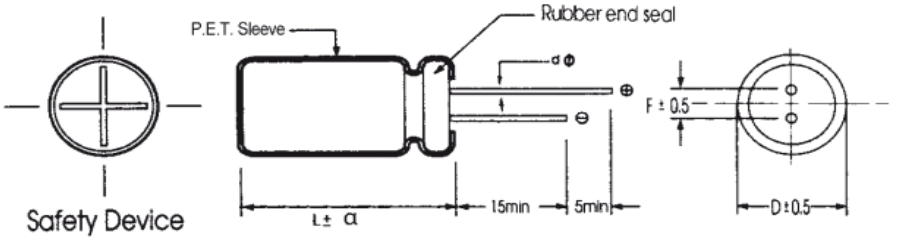
Shelf Life

Test conditions
Duration time :1000Hrs
Ambient temperature :+105℃
Applied voltage :None
After test requirement at +20℃:Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltagefor 30 minutes.

Multiplier for Ripple Current vs.

Frequency(Hz)	120	1K	10K	≧50K
Multiplier	1	1.5	1.7	1.9

Diagram of Dimensions:(unit:mm)



Dφ	10	13	16	18	22
F	5.0	5.0	7.5	7.5	10
dφ	0.6		0.8		

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

KL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
160	3.3	10×12.5	52
160	4.7	10×12.5	60
160	10	10×12.5	104
160	10	10×16	115
160	15	10×16	150
160	22	10×16	190
160	22	10×20	210
160	33	10×16	235
160	33	10×20	258
160	33	13×20	300
160	47	10×20	270
160	47	13×20	310
160	68	13×20	430
160	68	13×25	470
160	100	13×25	540
160	100	16×21	540
160	100	16×25	590
160	120	16×21	560
160	150	16×25	650
160	180	16×31.5	750
160	220	16×31.5	820
160	220	18×25	710
160	270	18×31.5	880
160	330	18×31.5	930
160	330	18×41	1000
200	3.3	10×12.5	52
200	4.7	10×12.5	60
200	6.8	10×12.5	70
200	10	10×12.5	104
200	10	10×16	115
200	10	10×20	125
200	15	10×16	150
200	22	10×16	210
200	22	10×20	230
200	33	10×20	290
200	33	13×20	350
200	47	13×20	380
200	68	13×25	530
200	68	16×21	530
200	100	16×21	570
200	100	16×25	610
200	120	16×25	700
200	150	16×25	700
200	150	16×31.5	750
200	180	18×31.5	830
200	220	18×31.5	970
200	270	18×41	1100
200	330	18×45	1250
250	4.7	10×12.5	60
250	6.8	10×12.5	75
250	10	10×16	160
250	10	10×20	170
250	15	10×16	180
250	22	10×20	250
250	22	13×20	290
250	33	13×20	360
250	33	13×25	380
250	47	13×25	430
250	68	16×21	530
250	68	16×25	550

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
250	68	18×21	550
250	100	16×25	630
250	100	16×31.5	700
250	100	18×25	680
250	100	18×31.5	750
250	120	18×31.5	790
250	150	18×31.5	840
250	150	18×35.5	880
250	180	18×41	980
250	220	18×35.5	960
250	220	18×41	1020
350	4.7	10×12.5	65
350	6.8	10×16	100
350	10	10×20	170
350	10	13×20	180
350	15	13×20	200
350	22	13×20	290
350	33	13×25	320
350	33	16×21	320
350	47	16×25	430
350	47	16×31.5	440
350	68	16×35.5	550
350	100	18×31.5	750
350	100	18×35.5	780
400	3.3	10×12.5	55
400	4.7	10×16	100
400	6.8	10×16	120
400	6.8	10×20	125
400	10	10×16	156
400	10	10×20	170
400	10	13×20	200
400	15	10×16	156
400	15	13×20	200
400	22	13×25	320
400	22	16×21	320
400	33	16×21	400
400	33	16×25	430
400	47	16×21	420
400	47	16×25	450
400	47	16×31.5	530
400	68	16×25	480
400	68	16×31.5	530
400	82	16×31.5	580
400	100	16×31.5	710
400	100	18×35.5	750
400	120	16×35.5	800
400	120	18×31.5	800
400	150	16×41	920
400	150	18×31.5	890
400	180	18×41	1060
400	220	18×45	1200
450	2.2	10×12.5	45
450	3.3	10×16	65
450	4.7	10×12.5	95
450	4.7	10×16	105
450	6.8	10×16	125
450	6.8	10×20	140
450	10	10×20	170
450	10	13×20	190
450	10	13×25	220

CapXon

KL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)
450	15	16×21	270
450	22	13×20	280
450	22	16×21	320
450	22	16×25	360
450	33	16×25	440
450	33	18×25	460
450	47	16×31.5	480
450	47	18×25	450
450	56	16×31.5	530
450	68	16×35.5	600
450	68	18×25	580
450	68	18×31.5	620
450	82	16×35.5	680
450	100	16×35.5	750
450	120	18×35.5	840
450	150	18×41	970
450	180	18×45	1090
500	4.7	13×20	82
500	6.8	13×20	96
500	10	13×25	130
500	22	16×25	210
500	33	16×31.5	280
500	47	16×35.5	360
500	47	18×31.5	360
500	56	16×41	420
500	56	18×31.5	400
500	68	16×45	480
500	68	18×35.5	460
500	68	18×41	490
500	82	18×41	540
500	100	18×45	630
500	100	20×41	660
500	120	22×46	800

CapXon

KH series

KH series long life 5000~10000hrs

Feature

- Used in electronic ballast,switching power supply,industrial measuring instruments.
- Higher ripple current
- Endurance 5000~10000 Hrs at 105℃
- Safety vent construction design.
- RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	10 to 400 VDC	450 VDC
Capacitance Range	6.8 to 3300 μF	6.8 to 100 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	10~100V: I≦0.01CV or 3uA	160~450V: I≦0.04CV+100(uA)
	After 1 minute whichever is greater measured with rated working voltage applied I=Leakage Current(uA) C=Rated capacitance(uF) V=Rated Voltage(V)	

Dissipation Factor (tanδ, at 20℃, 120Hz)

Working Voltage(VDC)	10	16	25	35	50	160	200	250	350	400	450
D.F. (%)max.	19	16	14	12	10	15	15	15	20	20	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	10	16	25	35	50	160	200	250	350	400	450
Z-25℃ / Z+20℃	4	3	2	2	2	3	3	3	6	6	6
Z-40℃ / Z+20℃	6	4	3	3	3	6	6	6	6	6	-

Endurance

Test conditions
Duration time :As right
Ambient temperature :+105℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃
Capacitance change : with±20% of the initial measured value
Dissipation factor :≦ 200% of the initial specified value
Leakage current :≦ The initial specified value

Dφ	Life (hours)
＜8φ	5000
8φ	8000
≧10φ	10000

Shelf Life

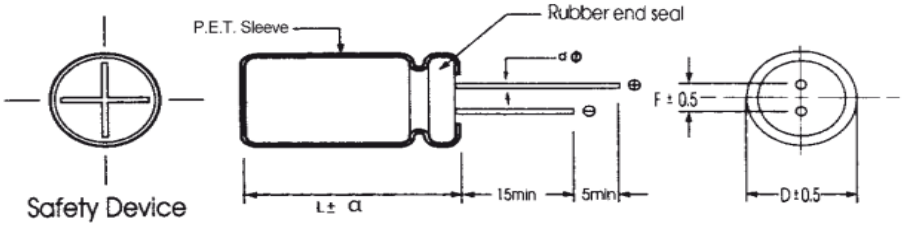
Test conditions
Duration time :1000Hrs
Ambient temperature :+105℃
Applied voltage :None

After test requirement at +20℃:Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

Frequency(Hz)	120	1K	10K	≧50K
Multiplier	0.5	0.8	0.85	1.0

Diagram of



Dφ	5	6	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5			0.6		0.8	

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

KH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)	WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)
10	47	5×11	100	35	33	6.3×11	178
10	68	5×11	130	35	47	5×11	180
10	100	6.3×11	190	35	47	6.3×11	206
10	150	6.3×11	220	35	47	8×11.5	240
10	220	6.3×11	270	35	68	6.3×11	231
10	330	6.3×11	334	35	68	8×11.5	270
10	330	8×11.5	390	35	100	8×11.5	331
10	470	8×11.5	458	35	100	10×12.5	390
10	470	10×12.5	540	35	150	8×11.5	483
10	1000	8×20	878	35	150	8×16	558
10	1000	10×12.5	810	35	150	10×16	632
10	1000	10×16	900	35	220	8×16	610
10	2200	13×16	1401	35	220	10×16	689
10	2200	13×20	1540	35	220	10×20	760
10	3300	13×20	1533	35	330	10×16	810
10	3300	16×25	1900	35	330	10×20	893
16	33	5×11	115	35	330	13×20	1035
16	47	5×11	145	35	470	10×16	781
16	68	6.3×11	200	35	470	10×20	861
16	100	6.3×11	210	35	470	13×20	998
16	100	8×11.5	245	35	470	13×25	1100
16	150	6.3×11	257	35	820	10×25	1300
16	150	8×11.5	300	35	1000	13×20	1409
16	220	6.3×11	360	35	1000	13×25	1554
16	220	8×11.5	420	35	1000	16×25	1746
16	220	10×12.5	495	35	1000	16×31.5	1932
16	330	8×11.5	433	50	6.8	5×11	75
16	330	8×16	500	50	10	5×11	97
16	470	8×11.5	558	50	22	6.3×11	130
16	470	10×12.5	657	50	33	6.3×11	210
16	470	10×16	730	50	33	8×11.5	241
16	1000	10×20	1012	50	47	6.3×11	246
16	1000	13×20	1173	50	47	8×11.5	287
16	2200	13×20	1689	50	47	10×12.5	300
16	2200	13×25	1862	50	68	8×11.5	302
16	2200	16×25	2093	50	68	10×12.5	356
25	22	5×11	100	50	100	8×11.5	382
25	33	5×11	130	50	100	10×16	500
25	47	6.3×11	160	50	150	10×12.5	610
25	68	6.3×11	197	50	150	10×16	677
25	68	8×11.5	230	50	150	10×20	747
25	100	6.3×11	280	50	220	10×16	764
25	100	8×11.5	327	50	220	10×20	843
25	150	8×11.5	390	50	220	13×20	977
25	150	10×12.5	460	50	330	13×20	1043
25	220	8×11.5	443	50	330	13×25	1150
25	220	10×16	580	50	470	13×20	1253
25	330	8×16	644	50	470	16×21	1441
25	330	10×12.5	657	50	470	16×25	1552
25	330	10×16	730	50	1000	16×25	1771
25	330	10×20	805	50	1000	16×31.5	1960
25	470	10×16	861	50	1000	18×31.5	2093
25	470	10×20	950				
25	1000	13×20	1408				
25	1000	13×25	1552				
25	2200	16×25	2169				
25	2200	16×31.5	2400				
35	10	5×11	65				
35	22	5×11	125				
35	33	5×11	160				

CapXon

KH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)
160	47	5×11	100
160	68	5×11	130
160	100	6.3×11	190
160	150	6.3×11	220
160	220	6.3×11	270
160	330	6.3×11	334
160	330	8×11.5	390
160	470	8×11.5	458
160	470	10×12.5	540
160	1000	8×20	878
160	1000	10×12.5	810
160	1000	10×16	900
160	2200	13×16	1401
160	2200	13×20	1540
160	3300	13×20	1533
160	3300	16×25	1900
160	33	5×11	115
200	47	5×11	145
200	68	6.3×11	200
200	100	6.3×11	210
200	100	8×11.5	245
200	150	6.3×11	257
200	150	8×11.5	300
200	220	6.3×11	360
200	220	8×11.5	420
200	220	10×12.5	495
200	330	8×11.5	433
200	330	8×16	500
200	470	8×11.5	558
200	470	10×12.5	657
200	470	10×16	730
200	1000	10×20	1012
250	1000	13×20	1173
250	2200	13×20	1689
250	2200	13×25	1862
250	2200	16×25	2093
250	22	5×11	100
250	33	5×11	130
250	47	6.3×11	160
250	68	6.3×11	197
250	68	8×11.5	230
250	100	6.3×11	280
250	100	8×11.5	327
250	150	8×11.5	390
250	150	10×12.5	460
250	220	8×11.5	443
250	220	10×16	580
350	330	8×16	644
350	330	10×12.5	657
350	330	10×16	730
350	330	10×20	805
350	470	10×16	861
350	470	10×20	950
350	1000	13×20	1408
350	1000	13×25	1552
350	2200	16×25	2169
350	2200	16×31.5	2400
350	10	5×11	65
350	22	5×11	125
350	33	5×11	160

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /100KHz)
350	100	18×25	1580
350	120	18×31.5	1870
350	150	18×35.5	2170
400	6.8	10×12.5	260
400	6.8	10×16	290
400	6.8	10×20	310
400	10	10×16	330
400	10	10×20	360
400	10	13×20	410
400	15	13×20	560
400	22	13×20	770
400	22	16×21	880
400	22	16×25	950
400	33	16×21	910
400	33	18×21	970
400	47	16×25	1190
400	47	18×21	1190
400	47	18×25	1270
400	68	18×25	1480
400	68	18×31.5	1630
400	82	18×25	1530
400	100	18×31.5	1730
400	120	18×35.5	1950
400	150	18×41	2220
450	6.8	10×20	290
450	6.8	13×20	330
450	10	13×20	460
450	10	13×25	500
450	15	13×20	550
450	15	13×25	610
450	22	13×25	710
450	22	16×21	760
450	22	16×25	790
450	33	16×25	990
450	33	18×21	990
450	33	18×25	1060
450	47	18×25	1210
450	47	18×31.5	1330
450	68	18×31.5	1580
450	82	18×35.5	1790
450	100	18×41	1810

CapXon

TH series

TH series High Temperature

Feature

- The series has guaranteed operating life of 1000~3000 hours at 125℃ widest operating temperature range, -40 to +125℃
- Applications : High reliability equipment, filtering circuit of switching power supply, and industrial control equipment.
- RoHS Compliant

Specifications

Item	Performance Characteristics		
Operating Temperature Range	-40 to +125℃	-25 to +125℃	
Rated Voltage Range	10 to 400 VDC	450 VDC	
Capacitance Range	0.47 to 8200 μF	1 to 47 μF	
Capacitance Tolerance	±20% (120Hz, +20℃)		
Leakage Current (+20℃,max.)	10~100V	160~450V	
	I≦0.01CV or 3uA	CV≦1000	I≦0.1CV+40(uA)
	After 2 minute whichever is greater measured with rated working voltage applied	CV＞1000	I≦0.04CV+100(uA)
		After 1 minute withrated working voltage applied.	

Dissipation Factor (tanδ，at 20℃，120Hz)

Working Voltage(VDC)	10	16	25	35	50	63	80	100	160	200	250	350	400	450
D.F. (%)max.	18	15	13	12	10	8	8	7	12	12	12	15	15	20

for capacitance>1000uF,add 2% per another 1000uF

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	10	16	25	35	50	63	100	160~250	350~400	450
Z-25℃ / Z+20℃	3	2	2	2	2	2	2	3	6	6
Z-40℃ / Z+20℃	4	4	4	4	4	4	4	6	12	

Endurance

Test conditions
Duration time :1000~2000Hrs
Ambient temperature : +125℃
Applied voltage : Rated DC working voltage
After test requirement at +20℃
Capacitance change : ≦ ±20% of the initial measured value
Dissipation factor : ≦ 300% of the initial specified value
Leakage current : ≦ The initial specified value

Dφ	Life hours
＜8φ	1000
8φ 10φ	2000
≧13φ	3000

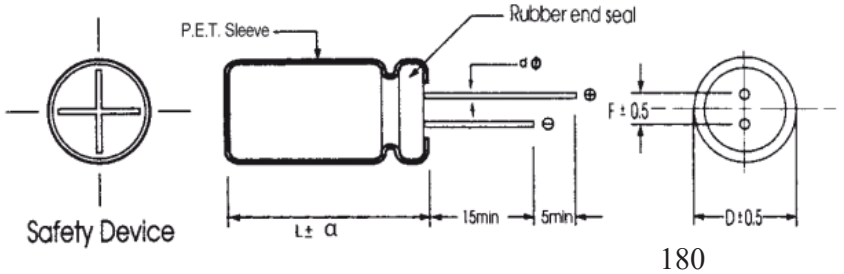
Shelf Life

Test conditions
Duration time :1000Hrs
Ambient temperature :+125℃
Applied voltage :None
After test requirement at +20℃:Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

CAP(uF)\Frequency(Hz)	50(60)	120	400	1K	10K	50K~100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5			0.6		0.8	

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

TH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
10	47	5×11	92
10	56	5×11	100
10	100	5×11	130
10	100	6.3×11	145
10	120	6.3×11	160
10	330	8×11.5	350
10	330	10×12.5	410
10	470	8×11.5	430
10	470	8×16	500
10	470	10×12.5	505
10	470	10×16	525
10	560	10×12.5	530
10	680	8×20	640
10	680	10×16	660
10	1000	10×16	870
10	1000	10×20	960
10	1200	10×20	1000
10	1500	10×20	1120
16	22	5×11	66
16	33	6.3×11	91
16	47	5×11	97
16	47	6.3×11	110
16	100	6.3×11	175
16	100	8×11.5	206
16	220	8×11.5	340
16	220	10×12.5	400
16	330	8×11.5	400
16	330	8×16	460
16	330	10×12.5	470
16	330	10×16	525
16	470	8×11.5	500
16	470	8×20	640
16	470	10×12.5	590
16	470	10×16	650
16	470	10×20	720
16	680	10×20	760
16	820	10×16	740
16	820	10×25	900
16	1000	10×20	860
16	1000	10×25	950
16	1000	13×20	1000
25	22	6.3×11	70
25	33	5×11	88
25	33	6.3×11	100
25	47	5×11	97
25	47	6.3×11	110
25	47	8×11.5	130
25	56	6.3×11	120
25	100	8×11.5	210
25	100	10×12.5	250
25	120	8×11.5	220
25	150	8×11.5	260
25	180	8×11.5	290
25	220	8×11.5	360
25	220	8×16	415
25	220	10×12.5	420
25	220	10×16	470
25	270	8×20	470
25	270	10×12.5	435
25	330	8×16	510

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
25	330	10×12.5	520
25	330	10×16	570
25	330	10×20	631
25	390	10×16	650
25	470	8×20	620
25	470	10×16	640
25	470	10×20	700
25	470	10×25	770
25	470	13×20	810
25	560	10×20	680
25	560	10×25	750
25	680	10×20	740
25	1000	13×20	880
25	1000	13×25	970
25	1000	16×25	1100
25	1200	10×20	1010
25	1500	10×25	1220
25	1800	13×20	1350
25	2700	13×25	1710
25	3300	13×30	2070
25	5600	18×25	2730
25	6800	16×35.5	3300
25	8200	16×41	3750
35	22	5×11	72
35	22	6.3×11	82
35	33	8×11.5	108
35	47	6.3×11	110
35	47	8×11.5	130
35	47	10×12.5	158
35	56	6.3×11	130
35	100	8×11.5	200
35	100	10×12.5	230
35	100	10×16	262
35	120	8×11.5	300
35	120	8×16	350
35	150	10×12.5	360
35	180	8×20	410
35	180	10×12.5	380
35	220	10×12.5	440
35	220	10×16	490
35	220	10×20	540
35	270	10×16	500
35	270	10×20	550
35	330	10×16	560
35	330	10×25	680
35	330	13×20	718
35	390	10×20	590
35	470	10×20	700
35	470	13×20	810
35	470	13×25	900
35	560	10×20	580
35	560	13×16	610
35	680	10×20	800
35	820	10×25	980
35	1000	13×25	1140
35	1000	16×25	1280
35	1200	10×30	1290
35	1500	13×25	1368
35	2200	13×30	1660
35	2700	13×40	2350

CapXon

TH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
35	3300	16×31.5	2480
35	3300	18×25	2400
35	4700	16×41	3000
50	2.2	8×11.5	25
50	3.3	8×11.5	30
50	4.7	5×11	32
50	4.7	8×11.5	43
50	10	5×11	42
50	10	6.3×11	48
50	10	8×11.5	56
50	22	5×11	66
50	22	6.3×11	75
50	22	8×11.5	86
50	33	8×11.5	118
50	47	6.3×11	120
50	47	8×11.5	140
50	47	10×12.5	164
50	56	8×11.5	150
50	68	8×11.5	160
50	82	8×11.5	170
50	100	10×12.5	230
50	100	10×16	250
50	100	10×20	277
50	120	10×16	290
50	180	10×20	400
50	220	10×20	510
50	220	10×25	560
50	220	13×20	587
50	270	10×20	610
50	330	10×20	700
50	330	13×20	810
50	330	13×25	900
50	470	13×25	900
50	470	16×25	1000
50	560	10×30	950
50	680	13×25	1050
50	1000	13×30	1390
50	1200	13×35	1510
50	1200	18×21	1450
50	1500	13×40	1960
50	1800	18×25	1960
50	2200	18×31.5	2500
50	2700	18×35.5	2750
50	3300	18×41	2950
63	4.7	6.3×11	38
63	10	8×11.5	58
63	22	8×11.5	93
63	33	8×11.5	115
63	33	10×12.5	132
63	47	10×12.5	155
63	47	10×16	172
63	100	10×16	260
63	180	10×20	400
63	220	10×25	520
63	220	13×25	595
63	330	13×25	880
63	330	16×25	1000
63	390	13×20	800
63	680	13×30	1290
63	820	13×35	1420

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
63	820	18×21	1360
63	1200	18×25	1620
63	1500	18×31.5	1980
63	1800	16×41	2260
63	2200	18×41	2680
80	22	8×11.5	120
80	33	10×12.5	170
80	47	10×12.5	200
80	100	10×20	370
80	330	13×25	870
80	390	16×21	900
80	560	13×35	1100
80	560	16×25	1060
80	560	18×21	1050
80	680	16×31.5	1300
100	0.47	6.3×11	14
100	1	6.3×11	24
100	2.2	6.3×11	31
100	3.3	6.3×11	36
100	4.7	6.3×11	38
100	4.7	8×11.5	48
100	10	8×11.5	60
100	10	10×12.5	70
100	22	8×11.5	76
100	22	10×12.5	90
100	22	10×16	100
100	33	10×12.5	130
100	33	10×16	140
100	33	10×20	158
100	47	10×16	150
100	47	10×25	175
100	47	13×20	185
100	100	13×25	320
100	100	16×25	350
100	330	13×35	890
100	330	16×25	860
100	330	18×21	850
100	390	13×40	1050
100	390	16×31.5	1050
100	560	18×31.5	1290
100	680	18×35.5	1480
100	820	18×41	1850
160	1	6.3×11	23
160	2.2	6.3×11	35
160	3.3	6.3×11	37
160	3.3	8×11.5	41
160	4.7	8×11.5	52
160	6.8	10×12.5	70
160	10	8×11.5	70
160	10	10×12.5	82
160	22	10×16	115
160	22	10×20	128
160	33	13×20	200
160	47	13×20	240
160	47	13×25	260
160	82	10×30	340
160	100	10×35	380
160	100	13×25	390
160	100	16×25	430
160	120	10×40	450

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TH series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
160	160	150	13×30
160	160	180	13×35
160	160	180	18×21
160	160	220	16×31.5
160	160	330	18×35.5
200	200	1	6.3×11
200	200	2.2	6.3×11
200	200	3.3	8×11.5
200	200	4.7	8×11.5
200	200	4.7	10×12.5
200	200	6.8	10×12.5
200	200	10	10×12.5
200	200	22	10×20
200	200	22	10×25
200	200	22	13×20
200	200	33	13×20
200	200	33	13×25
200	200	47	13×20
200	200	47	13×25
200	200	47	16×25
200	200	56	13×20
200	200	82	13×25
200	200	100	13×30
200	200	100	16×21
200	200	100	16×25
200	200	100	16×31.5
200	200	150	13×40
200	200	150	16×25
200	200	180	18×25
200	200	220	18×31.5
200	200	330	18×35.5
250	250	1	6.3×11
250	250	2.2	6.3×11
250	250	2.2	8×11.5
250	250	3.3	8×11.5
250	250	3.3	10×12.5
250	250	4.7	10×12.5
250	250	4.7	10×16
250	250	6.8	10×16
250	250	10	10×16
250	250	22	13×20
250	250	22	13×25
250	250	33	13×25
250	250	33	16×25
250	250	39	10×30
250	250	47	10×35
250	250	47	16×25
250	250	47	16×31.5
250	250	56	10×40
250	250	68	13×30
250	250	82	13×35
250	250	82	18×21
250	250	100	13×40
250	250	120	18×25
250	250	220	18×35.5
350	350	1	8×11.5
350	350	2.2	8×11.5
350	350	2.2	10×12.5
350	350	3.3	10×12.5
350	350	3.3	10×16

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/125℃ /120Hz)
350	4.7	10×16	68
350	4.7	10×20	75
350	5.6	10×20	78
350	6.8	13×20	85
350	10	10×25	105
350	10	13×20	110
350	22	13×25	180
350	22	16×25	200
350	27	10×30	180
350	33	10×35	220
350	33	16×25	230
350	33	16×31.5	260
350	47	13×30	280
350	47	16×31.5	320
350	47	16×35.5	340
350	56	13×35	330
350	56	16×25	320
350	56	18×21	310
350	68	13×40	390
400	1	10×12.5	30
400	2.2	10×16	50
400	3.3	10×16	60
400	4.7	10×16	70
400	4.7	10×20	80
400	5.6	10×20	85
400	6.8	13×20	90
400	10	13×20	110
400	22	13×25	180
400	27	13×25	190
400	33	16×21	220
400	33	16×25	240
400	47	16×25	290
400	47	16×31.5	320
450	1	10×12.5	30
450	2.2	10×16	50
450	3.3	10×16	60
450	4.7	10×20	75
450	5.6	13×20	85
450	6.8	13×20	94
450	10	13×25	130
450	22	16×25	210
450	33	16×31.5	290
450	47	18×31.5	370

CapXon

TE series

TE series High Tempererature

Features

◆The series has guaranteed operation life of 1000~3000 hours at 130℃.
◆Applications:High reliability equipment,filtering circuit of switching power supply,and industrial control equipment.
◆ RoHS Compliant

Specifications

Item	Performance Characteristics			
Operating Temperature Range	-40 to +130℃		-25 to +130℃	
Rated Voltage Range	10 to 400 VDC		450 VDC	
Capacitance Range	2.2 to 4700 μF		1 to 100 μF	
Capacitance Tolerance	±20% (120Hz, +20℃)			
Leakage Current (+20℃,max.)	10 to 100 VDC		160 to 450 VDC	
	I≦0.01CV or 3uA		CV≤1000	I≦0.01CV+40(uA)
			CV＞1000	I≦0.04CV+100(uA)
	After 2 minute whichever is greater measured with rated working voltage applied		After 1 minute withrated working voltage applied.	

Dissipation Factor (tanδ，at 20℃，120Hz)

Working Voltage(VDC)	10	16	25	35	50	63	100	160	200	250	350	400	450
D.F. (%)max.	20	16	14	12	10	9	8	15	15	15	20	20	25

for capacitance>1000uF,add 2% per another 1000uF

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	10	16	25	35	50	63	100	160	200	250	350	400	450
Z-25℃ / Z+20℃	3	2	2	2	2	2	2	3	3	3	5	5	6
Z-40℃ / Z+20℃	6	4	3	3	3	3	3	6	6	6	6	6	-

Endurance

Test conditions
Duration time :as right
Ambient temperature :+130℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃
Capacitance change : with±30% of the initial measured value
Dissipation factor :≦ 300% of the initial specified value
Leakage current :≦ The initial specified value

Dφ	Life hours
6.3φ	1000
8φ	2000
≥10φ	10~100V :3000
	160~450V :2000

Shelf Life

Test conditions
Duration time :1000Hrs
Ambient temperature :+130℃
Applied voltage :None
After test requirement at +20℃:Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

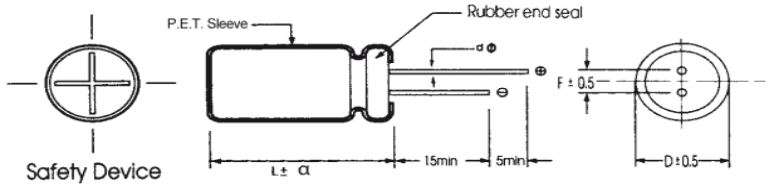
10~100V

CAP(uF)\Frequency(Hz)	50(60)	120	1K	10K	50K~100K
CAP＜10	0.35	0.42	0.60	0.80	1.00
10~33	0.45	0.55	0.75	0.90	1.00
47~330	0.6	0.7	0.85	0.95	1.00
470~1500	0.65	0.75	0.90	0.98	1.00
1500＜CAP	0.75	0.8	0.95	1.00	1.00

160~450V

CAP(uF) / Frequency(Hz)	120	400	1K	10K	50K~100K
CAP＜33	0.40	0.60	0.75	0.90	1.00
10＜CAP≥100	0.45	0.65	0.80	0.95	1.00

Diagram of Dimensions:(unit:mm)



Dφ	6.3	8	10	13	16	18
F	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5		0.6		0.8	

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

TE series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/130℃ /120Hz)	Rated Ripple current (Arms/130℃ /100KHz)
10	220	8×11.5	252	360
10	330	8×11.5	333	475
10	330	10×12.5	350	500
10	470	10×12.5	503	670
10	470	10×16	540	720
10	1000	10×20	881	1175
10	1500	13×20	1121	1495
10	2200	13×25	1352	1690
10	3300	16×25	1820	2275
10	4700	16×31.5	2212	2765
16	220	8×11.5	252	360
16	220	10×12.5	263	375
16	330	8×11.5	277	395
16	330	10×16	361	515
16	470	10×12.5	491	655
16	470	10×20	600	800
16	1000	10×20	881	1175
16	1000	13×20	930	1240
16	1500	13×20	1136	1515
16	1500	13×25	1249	1665
16	2200	13×25	1352	1690
16	2200	16×25	1500	1875
16	3300	16×31.5	2152	2690
16	4700	16×35.5	2352	2940
25	220	8×11.5	252	360
25	220	10×16	333	475
25	330	10×12.5	441	630
25	330	10×20	543	775
25	470	10×16	566	755
25	470	13×20	720	960
25	1000	13×20	930	1240
25	1000	16×25	1099	1465
25	1500	16×25	1399	1865
25	1500	16×31.5	1549	2065
25	2200	16×31.5	1904	2380
25	2200	16×35.5	2012	2515
25	3300	16×35.5	2156	2695
25	3300	18×35.5	2300	2875
35	100	8×11.5	322	460
35	100	10×16	420	600
35	220	10×12.5	427	610
35	220	10×20	522	745
35	330	10×16	553	790
35	330	13×20	700	1000
35	470	10×20	690	920
35	470	13×25	881	1175
35	1000	13×25	926	1235
35	1000	16×31.5	1151	1535
35	1500	16×31.5	1755	2340
35	1500	16×35.5	1849	2465
35	2200	16×35.5	2156	2695
35	2200	18×35.5	2300	2875
50	10	6.3×11	77	140
50	22	6.3×11	110	200
50	22	8×11.5	132	240
50	33	8×11.5	157	285
50	47	8×11.5	193	275
50	47	10×12.5	220	315
50	100	10×12.5	325	465
50	100	10×16	360	515

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/130℃ /120Hz)	Rated Ripple current (Arms/130℃ /100KHz)
50	220	10×20	606	865
50	220	13×20	700	1000
50	330	13×20	746	1065
50	330	13×25	823	1175
50	470	16×21	930	1240
50	470	16×25	1001	1335
50	1000	16×31.5	1849	2465
50	2200	18×41	2452	3065
63	33	8×11.5	140	255
63	47	10×12.5	200	285
63	100	10×16	290	415
63	220	13×20	592	845
63	330	13×25	802	1145
63	470	16×25	1091	1455
63	1000	16×31.5	1399	1865
63	1500	18×41	2051	2735
100	4.7	8×11.5	48	115
100	10	8×11.5	72	130
100	22	8×11.5	105	190
100	33	10×12.5	151	275
100	47	10×16	200	285
100	100	13×20	382	545
100	220	16×25	700	1000
100	330	16×31.5	942	1345
100	470	18×31.5	1200	1600
160	3.3	6.3×11	26	65
160	4.7	6.3×11	28	70
160	4.7	8×11.5	34	85
160	5.6	8×11.5	40	100
160	6.8	8×11.5	44	110
160	6.8	8×16	52	130
160	10	8×16	58	145
160	15	8×16	76	190
160	22	10×16	124	310
160	33	10×20	162	360
160	47	13×20	207	460
160	68	13×25	263	585
160	100	16×25	369	820
160	150	16×31.5	423	940
200	3.3	6.3×11	28	70
200	4.7	6.3×11	30	75
200	4.7	8×11.5	34	85
200	5.6	8×11.5	40	100
200	5.6	8×16	48	120
200	6.8	8×11.5	46	115
200	6.8	8×16	54	135
200	10	8×16	64	160
200	10	8×20	72	180
200	15	8×16	76	190
200	15	8×20	84	210
200	22	8×20	124	310
200	22	10×16	124	310
200	22	10×20	128	320
200	33	10×20	162	360
200	33	13×20	184	410
200	47	13×20	207	460
200	47	13×25	232	515
200	68	16×21	263	585
200	68	16×25	284	630
200	100	13×30	304	675

CapXon

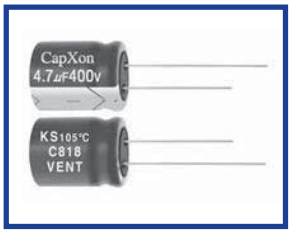
TE series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/130℃ /120Hz)	Rated Ripple current (Arms/130℃ /100KHz)
200	100	16×25	369	820
200	150	13×40	396	880
200	150	16×35.5	425	945
250	3.3	6.3×11	30	75
250	4.7	8×11.5	44	110
250	5.6	8×11.5	44	110
250	6.8	8×16	54	135
250	8.2	8×16	66	165
250	10	8×16	72	180
250	15	8×20	88	220
250	22	10×16	120	300
250	33	13×20	203	450
250	47	13×20	214	475
250	68	13×30	288	640
250	68	16×25	288	640
250	100	13×35	320	710
250	100	16×31.5	376	835
250	150	13×50	441	980
250	150	16×35.5	461	1025
350	2.2	6.3×11	24	60
350	3.3	8×11.5	34	85
350	4.7	8×11.5	44	110
350	5.6	8×16	50	125
350	6.8	8×20	60	150
350	8.2	8×20	68	170
350	10	10×20	78	195
350	15	10×20	100	250
350	22	13×20	124	310
350	33	16×21	203	450
350	47	16×21	243	540
350	68	18×25	290	645
350	100	18×31.5	383	850
400	2.2	6.3×11	30	75
400	2.2	8×11.5	34	85
400	2.2	8×16	38	95
400	2.7	8×16	40	100
400	3.3	8×11.5	38	95
400	3.3	8×16	46	115
400	3.3	8×20	50	125
400	4.7	8×11.5	44	110
400	4.7	8×20	50	125
400	4.7	10×16	50	125
400	5.6	8×20	54	135
400	5.6	10×16	54	135
400	5.6	10×20	60	150
400	6.8	8×20	60	150
400	6.8	10×16	60	150
400	6.8	10×20	66	165
400	8.2	10×16	68	170
400	8.2	10×20	76	190
400	10	10×16	76	190
400	10	10×20	80	200
400	10	10×25	86	215
400	15	13×20	104	260
400	22	13×25	138	345
400	33	16×25	207	460
400	47	13×40	234	520
400	47	16×31.5	275	610
400	47	18×25	261	579
400	68	13×55	335	745

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/130℃ /120Hz)	Rated Ripple current (Arms/130℃ /100KHz)
400	68	18×31.5	297	660
400	100	18×41	396	880
450	1	8×11.5	26	65
450	2.2	8×16	38	95
450	3.3	8×16	40	100
450	4.7	8×20	50	125
450	5.6	10×16	54	135
450	6.8	10×20	66	165
450	8.2	10×20	76	190
450	10	10×25	86	215
450	10	13×20	86	215
450	15	13×20	104	260
450	22	10×40	140	350
450	22	16×21	138	345
450	22	16×25	154	385
450	33	10×50	203	450
450	33	16×25	218	485
450	33	16×31.5	245	545
450	47	13×45	254	565
450	47	16×35.5	270	600
450	68	18×31.5	297	660
450	100	18×41	396	880

KS Series 105℃ Overvoltage Vent Operation Facility



Features

- ◆ High ripple current capability.
- ◆ This series has specification of vent operation in overvoltage situation.
- ◆ RoHS Compliant

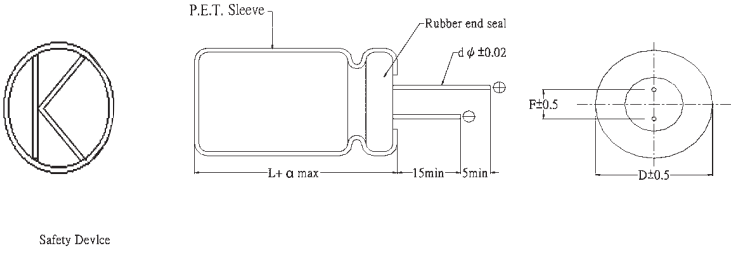
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25~+105℃
Rated Voltage Range	200V、400V
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.03 CV (μA) After 1 minute with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC) 200 400 D.F.(%)max. 15 15
Endurance	Test condition Duration time :2000 Hrs Ambient temperature:+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor: ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

VDC	Capacitance(μF)	Frequency(Hz)				
		60(50)	120	400	1K	≧10K
200	22~470	0.85	1.00	1.10	1.25	1.50
400	4.7~68	0.85	1.00	1.05	1.20	1.40
	82~150	0.85	1.00	1.03	1.15	1.35

Diagram of Dimensions:(unit:mm)



Dφ	10	13	16	18
F	5.0	5.0	7.5	7.5
dφ	0.6		0.8	

α	D＜18	D＝18	
	1.5	L＜35.5	L≧35.5
		1.5	2.0

Radial

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	200	
	Size	Ripple
22	10x20	120
33	10x25	160
	13x20	160
47	10x30	195
	13x20	195
56	13x25	210
68	13x25	270
	16x21	270
82	13x30	310
	16x21	320
	16x25	360
100	16x25	400
	18x21	400
120	16x25	460
	16x31.5	500
	18x25	500
150	16x31.5	560
	16x35.5	590
	18x25	560
180	16x35.5	600
	18x31.5	650
220	18x31.5	700
	18x35.5	740
330	18x35.5	780
	18x41	840
390	18x41	860
	18x45	920
470	18x45	1120

WV / Cap(μ F)	400	
	Size	Ripple
4.7	10x12.5	60
10	10x16	100
	10x20	125
22	13x20	135
	13x25	150
	16x21	150
33	13x25	180
	16x21	210
47	16x31.5	300
	16x35.5	320
	18x25	300
	18x31.5	320
56	16x31.5	360
	18x25	350
	18x31.5	370
68	16x31.5	365
	16x35.5	380
	18x31.5	375
82	16x35.5	410
	18x31.5	410
	18x35.5	450
100	16x35.5	470
	18x31.5	470
	18x35.5	490
120	18x31.5	520
	18x35.5	540
	18x41	560
150	18x35.5	770
	18x41	790

Ripple Current (mA, rms) at 105℃ 120Hz

CapXon

FK series

FK Series Long Life 105℃

Features

- Specially designed for electronic ballast 、 energy-save lamp and LED driving power
- Endurance 6000~8000 hrs at 105℃
- Safety vent construction design.
- RoHS Compliant
- AEC-Q200 qualified

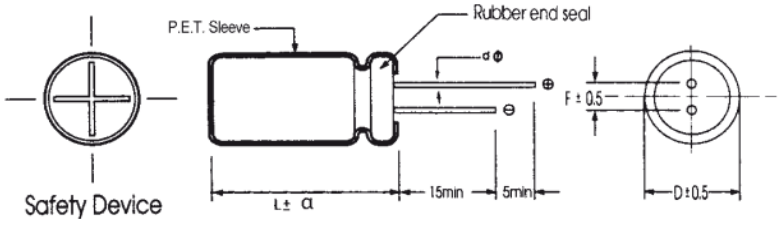
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160~450Vde)　-25 to +105℃(500Vde)
Rated Voltage Range	160 to 500 VDC
Capacitance Range	1 to 330 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	(CV≦1000): 1≦0.1CV+40(μA); (CV＞1000): 1≦0.04CV+100(μA). After 1minutewith ratedworking voltage applied. C:: ratedCapacitance (μF)，V: working voltage(V)
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 160 200 250 350 400 420 450 500 / D.F. (%)max.: 15 15 15 20 20 20 20 24
Low Temperature Characteristics (at 120Hz)	Impedance ratio max. Working Voltage(VDC): 160 200 250 350 400 420 450 500 / Z-25℃ / Z+20℃: 3 3 3 5 5 6 6 6 / Z-40℃ / Z+20℃: 6 6 6 6 6 8 8 -
Endurance	Test conditions. Duration time :As right. Ambient temperature :+105℃. Applied voltage :Rated DC working voltage. After test requirement at +20℃. Capacitance change : with±20% of the initial measured value. Dissipation factor :≦ 200% of the initial specified value. Leakage current :≦ The initial specified value. Dφ: 6.3φ,8φ,10φ×9L → 6000; ≧10φ×12.5L → 8000
Shelf Life	Test conditions. Duration time :1000Hrs. Ambient temperature :+105℃. Applied voltage :None. After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

Frequency(Hz) / CAP(μF)	120	1K	10K	≧100KHz
1~82	1.00	1.75	2.25	2.50
≥100	1.00	1.67	2.05	2.25

Diagram of Dimensions:(unit:mm)



Dφ	8		10	13	16	18	20
F	3.5		5.0	5.0	7.5	7.5	10
dφ	L＜20	L≧20	0.6		0.8		
	0.5	0.6					

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

FK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
160	1	6.3×11	20	51
160	1	6.3×9	18	46
160	1.5	6.3×11	22	56
160	1.5	6.3×9	20	51
160	2.2	6.3×11	28	71
160	2.2	6.3×9	26	65
160	3.3	6.3×11	32	81
160	3.3	6.3×9	29	73
160	4.7	6.3×11	36	91
160	4.7	6.3×9	34	86
160	5.6	6.3×11	38	96
160	5.6	6.3×9	36	91
160	5.6	8×11.5	44	110
160	6.8	6.3×11	44	110
160	6.8	8×11.5	52	130
160	6.8	8×9	44	110
160	8.2	8×11.5	60	150
160	8.2	8×9	56	140
160	10	8×11.5	96	240
160	10	8×16	110	280
160	10	8×9	88	220
160	10	10×12.5	120	290
160	15	8×16	110	280
160	15	10×9	100	260
160	22	8×20	180	450
160	22	10×12.5	160	410
160	22	10×16	180	460
160	33	10×16	230	570
160	33	10×20	250	630
160	47	10×16	300	740
160	47	10×20	300	760
160	68	13×20	470	1180
160	82	13×20	520	1290
160	100	13×25	620	1400
160	100	16×21	630	1420
160	150	16×25	840	1880
160	220	18×25	1090	2460
160	270	16×31.5	1260	2830
160	330	18×31.5	1400	3140
200	1	6.3×11	23	57
200	1	6.3×9	21	53
200	1.5	6.3×11	24	61
200	1.5	6.3×9	23	57
200	2.2	6.3×11	30	75
200	2.2	6.3×9	28	69
200	3.3	6.3×11	39	97
200	3.3	6.3×9	35	87
200	4.7	6.3×11	52	130
200	4.7	8×9	52	130
200	5.6	6.3×11	56	140
200	5.6	8×11.5	64	160
200	5.6	8×9	56	140
200	6.8	8×11.5	76	190
200	6.8	8×9	64	160
200	8.2	8×11.5	84	210
200	10	8×11.5	110	270
200	10	8×16	120	310
200	10	10×12.5	130	320
200	10	10×9	110	270
200	22	8×20	220	550

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
200	22	10×16	220	560
200	22	10×20	250	620
200	33	10×16	260	650
200	33	10×20	280	710
200	47	13×16	360	890
200	47	13×20	390	980
200	68	13×20	470	1180
200	68	13×25	520	1300
200	100	13×25	630	1420
200	100	16×25	680	1530
200	150	18×25	900	2020
200	220	16×31.5	1090	2460
250	1	6.3×11	24	59
250	1	6.3×9	21	53
250	1.5	6.3×11	24	61
250	1.5	6.3×9	23	57
250	2.2	6.3×11	30	76
250	2.2	6.3×9	28	69
250	2.2	8×11.5	38	95
250	3.3	6.3×11	40	100
250	3.3	6.3×9	35	87
250	3.3	8×11.5	56	140
250	4.7	8×11.5	64	160
250	4.7	8×16	72	180
250	4.7	8×9	52	130
250	4.7	10×12.5	76	190
250	5.6	8×11.5	72	180
250	5.6	8×9	64	160
250	6.8	8×11.5	80	200
250	6.8	8×16	92	230
250	6.8	10×12.5	100	250
250	8.2	8×16	88	220
250	8.2	10×9	80	200
250	10	8×16	120	290
250	10	10×12.5	120	300
250	15	10×16	130	330
250	22	10×16	180	460
250	22	10×20	200	510
250	33	10×20	270	680
250	33	13×16	270	680
250	33	13×20	320	800
250	47	13×20	400	990
250	47	13×25	430	1080
250	56	13×25	500	1260
250	68	16×25	560	1400
250	100	16×25	680	1540
250	150	16×31.5	900	2020
250	220	18×31.5	1130	2550
350	1	6.3×11	26	66
350	1	6.3×9	21	53
350	1	8×11.5	31	77
350	1.5	6.3×11	30	75
350	1.5	6.3×9	26	66
350	2.2	6.3×11	38	95
350	2.2	8×11.5	48	120
350	2.2	8×9	35	88
350	3.3	8×11.5	56	140
350	3.3	8×9	48	120
350	3.3	10×12.5	64	160
350	4.7	8×16	72	180

CapXon

FK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
350	4.7	10×12.5	76	190
350	4.7	10×9	64	160
350	5.6	8×16	84	210
350	5.6	10×12.5	88	220
350	6.8	8×20	110	270
350	6.8	10×16	110	280
350	8.2	8×20	130	320
350	10	8×20	130	320
350	10	10×16	130	330
350	15	10×20	150	370
350	22	13×20	260	650
350	33	13×25	380	940
350	47	16×21	430	1080
350	47	16×25	460	1160
350	68	18×21	560	1400
350	68	18×25	600	1510
350	82	18×25	610	1530
350	100	16×31.5	720	1630
350	150	18×35.5	960	2170
400	1	6.3×11	30	76
400	1	6.3×9	25	63
400	1.5	6.3×9	30	76
400	1.5	8×11.5	36	91
400	2.2	6.3×11	44	110
400	2.2	8×11.5	48	120
400	2.2	8×9	40	100
400	3.3	8×11.5	60	150
400	3.3	8×9	52	130
400	4.7	8×11.5	80	200
400	4.7	8×16	88	220
400	4.7	10×12.5	92	230
400	4.7	10×9	72	180
400	5.6	8×16	88	220
400	5.6	10×12.5	100	250
400	6.8	8×16	110	270
400	6.8	10×12.5	110	280
400	8.2	8×16	110	280
400	8.2	10×12.5	120	290
400	8.2	10×16	130	320
400	10	8×20	140	350
400	10	10×16	140	360
400	10	10×20	160	400
400	15	10×20	190	480
400	15	13×16	200	500
400	22	13×20	260	650
400	33	13×25	360	900
400	33	16×21	360	900
400	47	16×25	470	1180
400	56	18×25	560	1400
400	68	18×25	590	1480
400	82	16×31.5	630	1580
400	100	18×31.5	770	1730
400	120	18×31.5	830	1860
400	150	18×35.5	930	2090
450	1	6.3×11	30	76
450	1	6.3×9	25	63
450	1.5	8×11.5	36	91
450	2.2	8×11.5	48	120
450	2.2	8×16	56	140
450	2.2	8×9	40	100

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
450	2.2	10×12.5	60	150
450	3.3	8×11.5	64	160
450	3.3	10×12.5	80	200
450	3.3	10×9	68	170
450	4.7	8×16	100	250
450	4.7	10×12.5	100	250
450	4.7	10×16	110	270
450	5.6	10×16	110	280
450	6.8	8×20	120	300
450	6.8	10×16	130	320
450	6.8	10×20	140	340
450	8.2	10×20	140	360
450	10	10×20	160	390
450	15	13×20	220	550
450	22	13×25	290	730
450	22	16×21	290	730
450	33	13×25	360	900
450	33	16×25	390	980
450	47	16×25	470	1180
450	47	18×25	500	1260
450	68	16×31.5	630	1580
450	68	18×25	590	1480
450	82	18×31.5	680	1700
450	100	18×35.5	800	1790
500	4.7	10×20	88	220
500	5.6	10×20	92	230
500	6.8	10×20	130	320
500	8.2	10×20	130	320
500	10	13×20	140	360
500	15	13×25	180	450
500	22	16×25	230	580
500	33	18×25	390	980
500	47	16×31.5	500	1260
500	56	18×31.5	570	1420
500	68	18×35.5	630	1580
500	82	18×41	680	1700
500	100	18×45	800	1800
500	120	22×45	840	1900

FL Series Long Life 105℃

Feature

- Specially designed for electronic ballast 、 energy-save lamp and LED driving power
- Endurance 8000~12000 hrs at 105℃
- Safety vent construction design.
- RoHS Compliant

FK long life FL

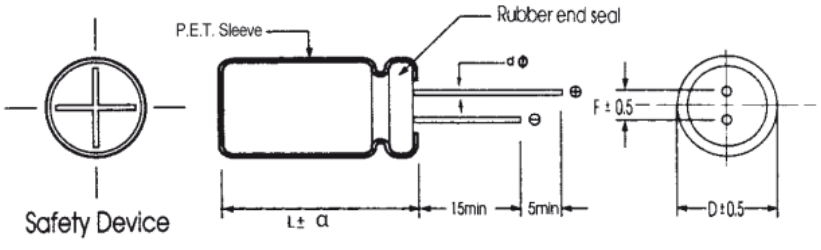
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160~450Vde)　-25 to +105℃(500Vde)
Rated Voltage Range	160 to 500 VDC
Capacitance Range	1.0 to 680 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	(CV≦1000): 1≦0.1CV+40(μA)　(CV＞1000): 1≦0.04CV+100(μA)　After 1minutewith ratedworking voltage applied. C:: ratedCapacitance (μF)，V: working voltage(V)
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC): 160 / 200 / 250 / 350 / 400 / 420 / 450 / 500 D.F. (%)max.: 15 / 15 / 15 / 20 / 20 / 20 / 20 / 24
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 160 / 200 / 250 / 350 / 400 / 420 / 450 / 500 Z-25℃ / Z+20℃: 3 / 3 / 3 / 5 / 5 / 6 / 6 / 6 Z-40℃ / Z+20℃: 6 / 6 / 6 / 6 / 6 / 8 / 8 / -
Endurance	Test conditions Duration time :As right Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : with±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value Dφ / Life (hours): 6.3φ,8φ / 8000; 10φ / 10000; ≥13φ / 12000 (500V:10000)
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs.

Frequency(Hz) / CAP(μF)	120	1K	10K	100KHz
1~82	1.00	1.75	2.25	2.50
≥100	1.00	1.67	2.05	2.25

Diagram of Dimensions:(unit:mm)



Dφ	8		10	13	16	18	20	22
F	3.5		5.0	5.0	7.5	7.5	10	10
dφ	L＜20	L≧20	0.6		0.8			
	0.5	0.6						

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

CapXon

FL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
160	1	6.3×11	18	46
160	1.5	6.3×11	20	51
160	2.2	6.3×11	25	62
160	3.3	6.3×11	37	93
160	4.7	8×11.5	38	95
160	5.6	8×11.5	40	100
160	6.8	8×11.5	50	125
160	6.8	8×16	59	148
160	10	8×11.5	72	180
160	15	8×16	100	250
160	15	10×12.5	100	260
160	22	10×16	140	350
160	22	10×20	150	380
160	33	10×16	190	480
160	33	10×20	210	520
160	39	10×16	240	600
160	47	10×20	300	760
160	56	10×20	310	770
160	68	13×20	480	1190
160	68	13×25	520	1310
160	82	10×25	440	1100
160	82	13×20	510	1280
160	100	13×20	590	1330
160	100	13×25	630	1420
160	100	16×21	630	1420
160	150	13×25	730	1650
160	150	16×21	770	1740
160	150	16×25	820	1850
160	180	16×21	870	1950
160	220	16×25	1020	2300
160	220	18×21	1000	2250
160	220	18×25	1040	2350
160	330	16×31.5	1350	3040
160	330	18×31.5	1380	3100
160	390	16×35.5	1510	3400
160	470	16×41	1710	3850
160	470	18×35.5	1720	3860
160	560	18×51	1910	4290
160	680	18×45	2130	4800
200	1	6.3×11	26	65
200	1.5	6.3×11	28	70
200	2.2	6.3×11	34	85
200	3.3	6.3×11	46	115
200	4.7	8×11.5	64	160
200	5.6	8×11.5	66	166
200	6.8	8×11.5	70	175
200	6.8	10×12.5	76	190
200	10	8×16	92	230
200	10	10×16	100	260
200	12	10×12.5	100	260
200	15	8×20	140	350
200	22	10×16	180	450
200	22	10×20	200	500
200	27	10×16	200	510
200	33	10×20	260	660
200	33	13×20	300	750
200	47	10×20	310	770
200	47	13×20	400	990
200	56	10×25	380	950
200	68	13×20	470	1180

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
200	68	13×25	520	1300
200	68	16×21	520	1300
200	82	16×21	560	1400
200	100	13×25	640	1450
200	100	16×21	670	1500
200	100	16×25	690	1550
200	100	18×21	710	1600
200	120	16×21	720	1620
200	150	16×21	790	1780
200	150	16×25	840	1900
200	150	18×25	890	2000
200	180	16×25	910	2050
200	180	18×21	910	2050
200	220	18×25	1050	2370
200	220	18×31.5	1160	2600
200	270	16×35.5	1250	2820
200	330	16×41	1430	3210
200	330	18×31.5	1400	3140
200	330	18×35.5	1440	3230
200	390	18×35.5	1520	3420
200	470	18×41	1750	3930
200	470	18×45	1820	4100
220	27	10×16	200	510
220	39	10×20	270	670
220	68	13×20	480	1190
220	150	16×25	850	1910
220	220	16×31.5	1110	2500
220	270	18×31.5	1260	2840
220	330	16×45	1450	3270
220	390	18×45	1620	3650
220	470	18×51	1840	4150
250	1	6.3×11	26	65
250	1.5	6.3×11	28	70
250	2.2	6.3×11	34	85
250	3.3	6.3×11	46	115
250	3.3	8×11.5	60	150
250	4.7	8×11.5	68	170
250	5.6	8×11.5	76	190
250	6.8	8×16	96	240
250	6.8	10×12.5	96	240
250	8.2	8×20	120	290
250	10	8×16	120	300
250	10	10×16	130	330
250	15	8×20	150	380
250	22	10×16	200	490
250	22	10×20	220	540
250	22	13×20	250	620
250	33	10×20	270	680
250	33	13×16	270	680
250	33	13×20	320	800
250	47	13×20	400	990
250	47	13×25	410	1020
250	47	16×21	450	1120
250	56	13×20	430	1070
250	68	13×25	500	1240
250	68	16×21	530	1320
250	68	16×25	570	1420
250	68	18×21	570	1420
250	82	13×25	570	1420
250	82	16×21	580	1450

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
250	100	16×25	760	1700
250	100	16×31.5	800	1800
250	100	18×21	720	1630
250	100	18×25	780	1750
250	120	16×25	780	1750
250	120	18×21	780	1750
250	150	18×25	890	2000
250	150	18×31.5	980	2200
250	180	16×31.5	1020	2300
250	180	18×25	980	2200
250	220	16×35.5	1130	2550
250	220	18×31.5	1130	2550
250	270	16×41	1290	2900
250	270	18×35.5	1310	2950
250	330	18×41	1460	3290
350	1	8×11.5	30	75
350	1.5	8×11.5	32	80
350	2.2	10×12.5	44	110
350	3.3	10×12.5	60	150
350	4.7	10×16	80	200
350	6.8	10×16	100	260
350	10	10×20	130	330
350	15	10×20	160	400
350	18	10×20	180	450
350	22	10×20	200	500
350	22	13×20	260	650
350	27	10×25	260	650
350	33	13×20	330	830
350	33	13×25	360	900
350	33	16×21	380	940
350	47	13×25	430	1070
350	47	16×21	440	1100
350	47	18×21	470	1180
350	56	16×21	480	1200
350	68	16×25	570	1420
350	68	16×31.5	620	1550
350	68	18×21	570	1420
350	68	18×25	620	1550
350	82	16×25	620	1560
350	82	18×25	640	1600
350	100	16×31.5	800	1800
350	100	18×25	780	1750
350	120	16×35.5	860	1930
350	120	18×31.5	870	1950
350	150	16×41	1020	2300
350	150	18×35.5	1020	2300
350	180	18×41	1080	2440
400	1	8×9	26	65
400	1	8×11.5	30	75
400	1.5	8×9	30	76
400	1.5	8×11.5	36	91
400	1.5	8×16	40	101
400	2.2	8×11.5	40	100
400	2.2	8×16	56	140
400	3.3	8×11.5	52	130
400	3.3	8×16	60	150
400	3.3	8×20	61	153
400	3.3	10×12.5	60	151
400	3.3	10×16	73	182
400	3.9	8×16	66	165

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
400	4.7	8×11.5	72	180
400	4.7	8×20	92	230
400	4.7	10×16	96	240
400	5.6	8×20	100	250
400	5.6	10×16	100	250
400	5.6	10×20	110	280
400	6.8	8×20	120	290
400	6.8	10×16	120	300
400	8.2	10×16	120	300
400	8.2	10×20	130	320
400	10	10×16	130	330
400	10	10×20	140	350
400	15	10×20	180	460
400	15	13×20	200	500
400	22	13×20	280	690
400	22	13×25	310	770
400	22	16×21	320	790
400	27	13×20	300	750
400	33	13×25	330	820
400	33	16×21	340	840
400	39	13×25	390	980
400	47	16×25	480	1200
400	47	16×31.5	530	1320
400	47	18×21	470	1180
400	47	18×25	510	1270
400	56	16×25	500	1260
400	56	18×21	500	1250
400	68	16×25	580	1440
400	68	18×25	630	1570
400	68	18×31.5	700	1740
400	82	16×31.5	660	1660
400	82	18×25	650	1620
400	82	18×31.5	710	1770
400	100	16×35.5	760	1720
400	100	18×31.5	770	1740
400	120	16×41	870	1950
400	120	18×35.5	870	1960
400	150	18×41	1020	2300
400	180	18×45	1100	2480
420	6.8	10×16	120	300
420	12	10×20	150	380
420	15	10×25	190	470
420	22	13×20	290	720
420	27	13×25	340	850
420	33	16×21	390	970
420	47	16×25	500	1260
420	47	18×21	500	1260
420	68	16×31.5	650	1620
420	68	18×25	620	1550
420	82	16×35.5	730	1830
420	82	18×31.5	730	1830
420	100	16×41	830	1870
420	100	18×35.5	840	1890
420	120	18×41	930	2100
420	120	18×45	950	2130
420	150	18×51	1060	2390
450	1	8×9	26	65
450	1	8×11.5	33	83
450	1.5	8×11.5	37	92
450	1.5	10×9	37	93

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
450	1.8	8×11.5	39	97
450	1.8	10×9	39	98
450	2.2	8×16	56	141
450	3.3	8×16	61	153
450	4.7	10×16	92	230
450	5.6	10×16	100	260
450	6.8	10×16	130	320
450	6.8	10×20	140	350
450	8.2	10×20	140	350
450	10	10×20	140	360
450	10	10×25	160	400
450	10	13×16	150	380
450	15	10×25	190	470
450	15	13×20	200	500
450	18	13×20	260	640
450	22	13×25	290	720
450	22	16×21	300	750
450	22	18×21	320	790
450	27	13×25	340	850
450	33	16×21	390	970
450	33	16×25	420	1050
450	33	16×31.5	460	1160
450	33	18×21	420	1040
450	33	18×25	450	1120
450	39	18×21	440	1110
450	47	16×25	500	1260
450	47	16×31.5	560	1390
450	47	18×25	540	1340
450	47	18×31.5	590	1480
450	56	16×31.5	590	1470
450	56	18×25	560	1400
450	56	18×31.5	630	1570
450	68	16×35.5	660	1650
450	68	18×31.5	660	1660
450	82	16×41	750	1880
450	82	18×31.5	720	1790
450	82	18×35.5	750	1880
450	100	18×35.5	840	1890
450	100	18×41	900	2020
450	120	18×45	950	2130
450	150	18×51	1070	2400
500	10	13×20	130	330
500	12	13×20	140	350
500	15	13×25	180	450
500	15	16×21	180	450
500	22	16×25	230	570
500	22	18×21	220	560
500	33	16×31.5	290	720
500	33	18×25	280	700
500	47	18×31.5	360	890
500	56	18×35.5	390	970
500	68	18×41	420	1060

CapXon

LE series

LE Series 105℃ 12000~20000 hours

Features

- ◆ Ultra Long life
- ◆ For LED lighting
- ◆ ROHS compliant

FL → long life → LE

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	160~450 VDC
Capacitance Range	1 to 68μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	(CV≦1000): 1≦0.1CV+40(μA); (CV＞1000): 1≦0.04CV+100(μA). After 1minutewith ratedworking voltage applied. C:: ratedCapacitance (μF)，V: working voltage(V)
Dissipation Factor (tanδ，at 20℃，120Hz)	Less than the value under table: Cap(μF)) / W.v.(V): 160~450; tanδ: 24%
Low Temperature Characteristics (at 120Hz)	Impedance ratio max: Working voltage(V): ＜250 / 250~400 / 450; Z-25℃ / Z+20℃: 3 / 6 / 8; Z-40℃ / Z+20℃: 8 / 10 / 12
Endurance	Test condition: Duration time :As right; Ambient temperature :+105℃; Applied voltage :Rated DC working voltage. 6.3X11,8X9,10X9: 12000hours; 8X11.5,10X12.5: 15000hours; 10X16 or more: 20000hours. After test requirement at +20℃: Capacitance change : Within±30% of the initial measured value; Dissipation factor : Not more than 300% of the initial specified value; Leakage current : Not more than The initial specified value
Shelf Life	Test condition: Duration time :1000 Hrs; Ambient temperature :+105℃; Applied voltage :None. After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

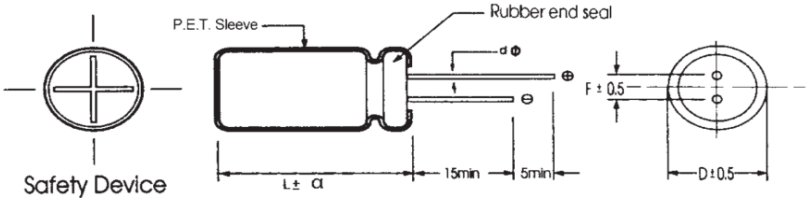
160~400V.DC

Frequency(Hz)		120	1K	10K	100K
Coefficient	1~5.6μF	1.0	1.6	1.8	2.0
	6.8~18μF	1.0	1.5	1.7	1.9
	22~33μF	1.0	1.4	1.6	1.8

≥450V.DC

Frequency(Hz)		120	1K	10K	100K
Coefficient	4.7~15μF	0.3	0.6	0.9	1.0
	22~68μF	0.4	0.7	0.9	1.0

Diagram of Dimensions:(unit:mm)



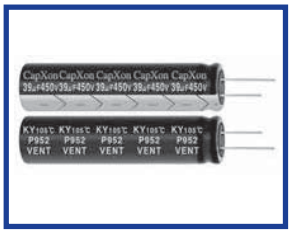
Dφ	6.3	8	10	13	16	18
F	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5		0.6		0.8	

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Rated Ripple current (Arms/105℃ /100KHz)
160	5.6	6.3×11	53	106
160	10	8×9	71	135
160	15	8×11.5	93	177
160	15	10×9	96	182
160	22	10×12.5	122	40
160	33	10×16	159	59
200	2.2	6.3×11	37	74
200	3.3	6.3×11	43	86
200	4.7	6.3×11	50	100
200	5.6	8×9	57	114
200	6.8	8×9	63	120
200	8.2	8×9	67	127
200	10	8×11.5	81	154
200	12	10×9	89	169
200	18	10×12.5	114	217
200	27	10×16	150	49
250	1.8	6.3×11	34	68
250	2.2	6.3×11	37	74
250	3.3	6.3×11	43	86
250	4.7	8×9	54	108
250	5.6	8×11.5	63	126
250	6.8	8×11.5	69	131
250	8.2	10×9	77	146
250	10	10×12.5	91	173
250	12	10×12.5	98	186
250	18	10×16	128	243
400	1	6.3×11	25	50
400	1.2	8×9	29	58
400	1.5	8×9	31	62
400	1.8	8×9	34	68
400	2.2	8×9	37	74
400	2.2	8×11.5	41	82
400	2.7	8×11.5	44	88
400	3.3	8×11.5	48	96
400	3.3	10×9	49	98
400	3.9	10×12.5	58	116
400	4.7	10×12.5	62	124
400	6.8	10×16	86	163
450	4.7	10×16	55	183
450	4.7	10×20	67	223
450	6.8	10×20	85	283
450	8.2	10×20	85	283
450	10	13×20	136	453
450	15	13×25	181	603
450	22	13×25	241	603
450	22	16×21	293	733
450	33	16×25	321	803
450	33	18×21	313	783
450	47	18×25	481	1203
450	68	18×31.5	521	1303

KY Series



Features

- ◆ Endurance:105℃ 2000hours.
- ◆ Suitable for slim application

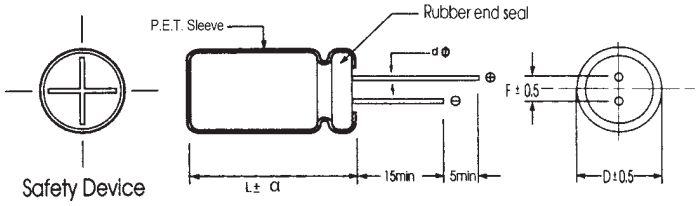
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25~+105℃
Rated Voltage Range	250~450 VDC
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦3 $\sqrt{CV}$ (μA) (After 5 minute with rated working voltage applied.) I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)
Dissipation Factor (tan δ ，at 20℃ ，120Hz)	Working Voltage(VDC) 250 350 400 420 450 D.F.(%)max. 15 15 15 20 20
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC) 250 350~450 Z-25℃ / Z+20℃ 3 8
Endurance	Test condition Duration time : 2000hrs Ambient temperature : +105℃ Applied voltage : Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)		60	120	400	1K	100K
Coefficient	250~350WV	0.8	1.00	1.20	1.30	1.40
	400~450WV	0.8	1.00	1.25	1.40	1.50

Diagram of Dimensions:(unit:mm)



DΦ	8	10~13	
F	3.5	5.0	5.0
dΦ	0.6	0.6	0.6
α	1.5	2.0	

Radial

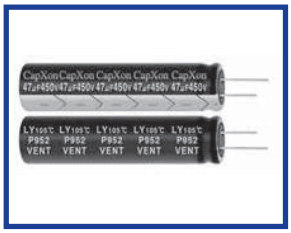
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	250		350		400		420		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
10										
12									8x30	135
15			8x30	145	8x30	170	8x30	150	8x35	150
22	8x30	200	8x35	185	8x35	220	8x35	195	8x40	195
									10x30	195
27	8x30	220	8x40	220	8x40	255	8x40	230	8x45	230
					10x30	255			10x30	220
33	8x30	240	8x40	250	8x45	280	8x50	300	10x35	255
					10x30	280	10x35	290	10x40	280
39	8x35	270	10x35	300	8x50	330	10x40	315	10x40	300
					10x35	330	13x30	315	10x45	315
									10x50	330
47	8x40	330	10x40	380	10x40	430	10x40	360	10x50	390
					13x30	430	13x30	360		
56	10x35	380	10x45	430	10x50	480	10x50	440	13x35	420
					13x30	450	13x30	400	13x40	450
68	10x35	435	13x35	480	10x55	550	13x35	470	13x40	520
					13x35	520			13x45	550
					13x40	550				
82	10x40	500	13x40	550	13x40	580	13x40	550	13x45	570
100	10x45	585	13x45	600	13x45	620	13x50	620		
					13x50	650				
120	13x35	620			13x55	750				
150	13x40	670								

Ripple Current (mA r.m.s) at 105℃,120Hz

LY Series



Features

- ◆ Endurance:105℃ 5000hours.
- ◆ Suitable for slim application

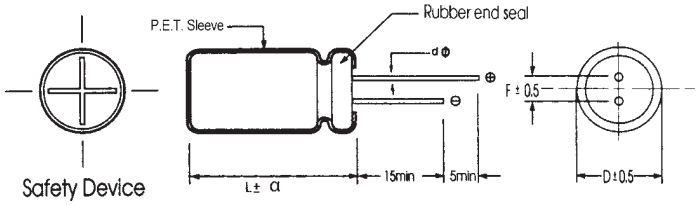
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25~+105℃
Rated Voltage Range	250~450 VDC
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦3 $\sqrt{CV}$ (μA) (After 5 minute with rated working voltage applied.) I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)
Dissipation Factor (tan δ ，at 20℃ ，120Hz)	Working Voltage(VDC) 250 350 400 420 450 D.F.(%)max. 15 15 15 20 20
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC) 250 350~450 Z-25℃ / Z+20℃ 3 8
Endurance	Test condition Duration time : 5000hrs Ambient temperature : +105℃ Applied voltage : Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)		60	120	400	1K	100K
Coefficient	250~350WV	0.8	1.00	1.20	1.30	1.40
	400~450WV	0.8	1.00	1.25	1.40	1.50

Diagram of Dimensions:(unit:mm)



DΦ	8	10~13	
F	3.5	5.0	5.0
dΦ	0.6	0.6	0.6
α	1.5	2.0	

Radial

CapXon

LY Series

Case Size

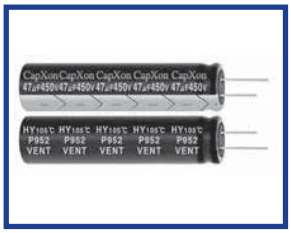
ϕ DxL(mm)

WV / Cap(μ F)	250		350		400		420		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
10										
12									8x30	110
15			8x30	110	8x30	120	8x30	100	8x35	120
22	8x30	130	8x35	150	8x35	160	8x40	180	8x45	160
									10x30	150
27	8x30	150	8x40	165	8x40	195	8x45	200	8x50	190
					10x30	195			10x35	180
33	8x35	170	8x45	195	8x45	250	10x35	230	10x40	220
					10x30	250			10x45	235
									10x50	250
39	8x40	200	10x40	280	8x50	280	10x45	275	10x45	260
					10x40	300	13x30	275	10x50	290
									13x35	290
47	8x45	220	10x45	330	10x45	350	10x45	330	10x55	350
					13x30	330	13x35	360	13x35	350
56	10x35	260	10x50	380	10x50	400	10x55	420	13x35	400
	10x40	300			13x30	380	13x35	410	13x40	425
					13x35	420				
68	10x40	350	13x35	425	13x35	440	13x40	450	13x45	470
			13x40	450	13x40	460			13x50	500
82	10x45	480	13x40	500	13x45	520	13x45	500	13x50	530
100	10x50	550	13x50	520	13x50	580	13x50	600		
120	13x40	570			13x60	680				
150	13x45	620								

Ripple Current (mA r.m.s) at 105℃,120Hz

HY Series

LY **Long life,high ripple current** HY



Features

- ◆ Endurance:105℃ 10000hours.
- ◆ Suitable for slim application
- ◆ High ripple current

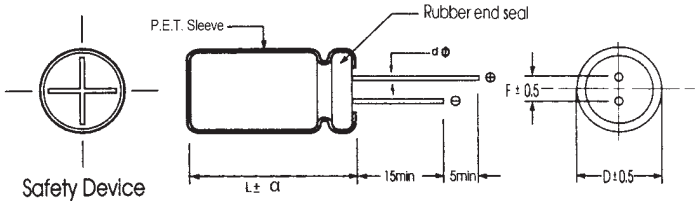
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Rated Voltage Range	250～450VDC
Capacitance Range	12 ～120 μ F
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦3 $\sqrt{CV}$ (μA) (After 5 minute with rated working voltage applied.) I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)
Dissipation Factor (tan δ ，at 20℃ ，120Hz)	Working Voltage(VDC) | 250~400 | 420~450 D.F.(%)max. | 20 | 25
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC) | 250 | 350~450 Z-25℃ / Z+20℃ | 3 | 8
Endurance	Test condition Duration time : 10000hrs Ambient temperature : +105℃ Applied voltage : Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)		60	120	400	1K	100K
Coefficient	250~350WV	0.8	1.00	1.20	1.30	1.40
	400~450WV	0.8	1.00	1.25	1.40	1.50

Diagram of Dimensions:(unit:mm)



Dφ	8	10~13	14.5
F	3.5	5.0	7.5
dφ	0.6	0.6	0.8
α	1.5	2.0	

Radial

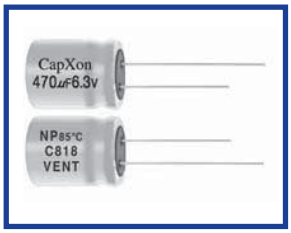
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	250		350		400		420		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
12			8x30	100	8x30	130	8x30	140	8x30	150
15			8x35	130	8x35	180	8x35	170	8x40	190
22	8x35	140	8x40	165	8x45	230	8x50	250	10x30	220
27	8x40 10x30	165 165	10x30	185	10x30	240	10x35	270	10x40	280
33	10x30	180	10x35	200	10x35	290	10x40	370	10x40 13x30	360 370
39	10x35	210	10x40 13x30	285 285	10x40 13x30	400 400	10x45 13x30	410 390	10x50 13x35	410 420
47	10x40 13x30	280 260	10x45 13x30	340 330	10x45 13x30	450 440	10x50 13x35	420 450	10x50 13x40	420 480
56	10x45 13x35	330 330	10x50 13x35	380 360	10x50 13x35	520 500	10x60 13x40	530 520	13x45	530
68	10x50 13x35	380 370	10x60 13x40	450 430	13x40	580	13x45	580	13x50	620
82	10x60 13x40	490 465	13x45	520	13x45	650	13x50	660	13x55	680
100	13x45	500	13x50	580	13x50	680				
120	13x50	580								

Ripple Current (mA r.m.s) at 105℃,120Hz

NP Series Non-polarized 85℃



Features

- ◆ NP Series for crossover networks of high-pitched, mean and low-pitched sounds in high-fidelity sound systems.
- ◆ The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- ◆ RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated Voltage Range	6.3 to 100 VDC	160 to 250 VDC
Capacitance Range	0.47 to 3300 μF	0.47 to 47 μF
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	I≦0.03 CV or 3 (μA) After 1 minute whichever is greater measured with rated working voltage applied.	

Dissipation Factor (tan δ ，at 20℃，120Hz)

Working Voltage(VDC)	6.3	10	16	25	35	50	63	100	160	200	250
D.F. (%)max.	25	25	20	15	15	13	10	10	15	15	20

For Capacitance ＞1000 uF, add 2% per another 1000 uF

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Working Voltage(VDC)	6.3	10	16	25	35	50	63	100
Z-25℃／Z+20℃	4	3	2	2	2	2	2	2
Z-40℃／Z+20℃	8	6	4	4	3	3	3	3

Working Voltage(VDC)	160	200	250
Z-25℃／Z+20℃	2	2	3

For Capacitance＞1000 uF, add 0.5 per another 1000 uF for -25℃／+20℃
add 1 per another 1000 uF for -40℃／+20℃

Endurance

Test conditions
Duration time : 2000Hrs
Ambient temperature : +85℃
Applied voltage : Rated DC working voltage
Each 250 hours, we will reserve the terminal and test the characteristics.
After test requirements at +20℃
Capacitance change : ≦ ±20% of the initial measured value
Dissipation factor : ≦ 150% of the initial specified value
Leakage current : ≦ The initial specified value

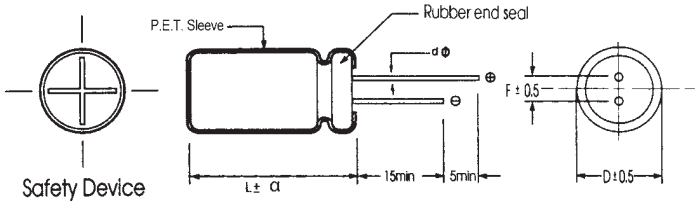
Shelf Life

Test conditions
Duration time : 1000Hrs
Ambient temperature : +85℃
Applied voltage : None
After test requirements at +20℃: Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



DΦ	5	6.3	8		10	13	16	18
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5
dΦ	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				

α	D＜18	D＝18	
	1.5	L＜35.5	L≧35.5
		1.5	2.0

Radial

Case Size

ϕ DxL(mm)

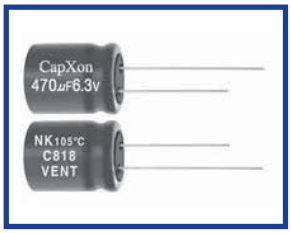
WV / Cap(μ F)	6.3		10		16		25		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
10							5x11	34	5x11	43
22			5x11	55	5x11	57	6.3x11	65	6.3x11	75
33			5x11	66	5x11	75	6.3x11	86	8x11.5	105
47			5x11	82	6.3x11	97	6.3x11	100	8x11.5	120
100	6.3x11	120	6.3x11	125	8x11.5	162	8x11.5	175	10x12.5	210
									10x16	230
220	6.3x11	175	8x11.5	205	10x12.5	270	10x12.5	295	10x20	400
							10x16	310		
330	8x11.5	250	10x12.5	270	10x16	350	10x20	440	13x20	495
			10x16	300						
470	10x12.5	330	10x16	388	10x20	455	13x20	530	13x25	655
1000	10x20	650	13x20	700	13x20	730				
					13x25	800				
2200	13x20	850	16x25	1000	16x31.5	1100				
3300	16x25	970	18x35.5	1300						

WV / Cap(μ F)	50		63		100		160	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5x11	11	5x11	12	5x11	14	5x11	17
1	5x11	17	5x11	18	5x11	21	6.3x11	25
2.2	5x11	25	5x11	26	5x11	34	8x11.5	38
3.3	5x11	27	6.3x11	28	6.3x11	39	8x11.5	43
4.7	5x11	34	6.3x11	34	8x11.5	47	10x12.5	52
10	6.3x11	52	6.3x11	57	8x11.5	71	10x16	89
22	8x11.5	92	8x11.5	97	10x16	140	13x20	155
33	8x11.5	109	10x12.5	140	10x16	190	13x20	230
					10x20	220		
47	10x12.5	150	10x16	180	10x20	195	13x25	250
					13x20	240		
100	10x20	265	13x20	320	16x25	425		
220	13x20	475	13x25	510	16x25	520		
					16x31.5	550		
330	13x25	560						

WV / Cap(μ F)	200		250	
	Size	Ripple	Size	Ripple
0.47	6.3x11	21	6.3x11	28
1	8x11.5	28	8x11.5	32
2.2	8x11.5	42	10x12.5	48
3.3	10x12.5	46	10x16	57
4.7	10x16	56	10x20	88
10	10x20	95	10x20	130
22	13x20	180	13x25	224
33	13x25	250	16x25	305

Ripple Current (mA, rms) at 85℃ 120Hz

NK Series Non-polarized 105℃



Features

- ◆ NK Series for crossover networks of high-pitched, mean and low-pitched sounds in high-fidelity sound systems.
- ◆ The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- ◆ RoHS Compliant

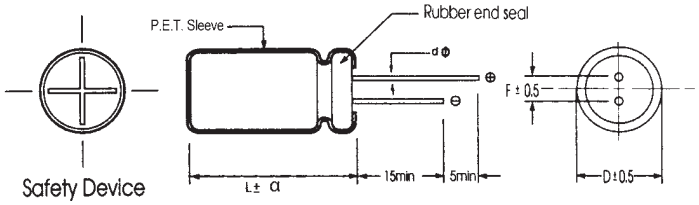
Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated Voltage Range	6.3 to 100 VDC	160 to 250 VDC
Capacitance Range	0.47 to 3300 μF	0.47 to 47 μF
Capacitance Tolerance	±20%(120Hz,+20℃)	
Leakage Current (+20℃,max.)	I≦0.03 CV or 3(μA) After 1 minute whichever is greater measured with rated working voltage applied.	
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 / 160 / 200 / 250 D.F. (%)max.: 25 / 25 / 20 / 15 / 15 / 13 / 10 / 10 / 15 / 15 / 20 For Capacitance ＞1000 uF, add 2% per another 1000 uF	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 Z-25℃／Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 / 2 / 2 Z-40℃／Z+20℃: 8 / 6 / 4 / 3 / 3 / 3 / 3 / 3 Working Voltage(VDC): 160 / 200 / 250 Z-25℃／Z+20℃: 2 / 2 / 3 For Capacitance＞1000 uF, add 0.5 per another 1000 uF for -25℃／+20℃ add 1 per another 1000 uF for -40℃／+20℃	
Endurance	Test conditions Duration time : 2000Hrs Ambient temperature : +105℃ Applied voltage : Rated DC working voltage Each 250 hours, we will reserve the terminal and test the characteristics. After test requirement at +20℃ Capacitance change : ≦ ±20% of the initial measured value Dissipation factor : ≦ 150% of the initial specified value Leakage current : ≦ The initial specified value	
Shelf Life	Test conditions Duration time : 1000Hrs Ambient temperature : +105℃ Applied voltage : None After test requirement at +20℃: Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8		10	13	16	18
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5
dφ	0.5		L＜20	L≧20	0.6		0.8	
			0.5	0.6				

α	D＜18	D＝18	
	1.5	L＜35.5	L≧35.5
		1.5	2.0

Radial

Case Size

ϕ DxL(mm)

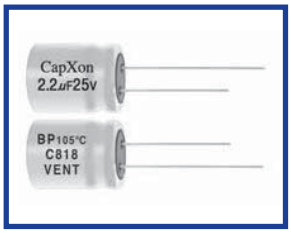
WV / Cap(μ F)	6.3		10		16		25		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
10							5x11	34	5x11	38
22					5x11	53	6.3x11	55	6.3x11	65
33			5x11	59	5x11	62	6.3x11	72	8x11.5	75
47			5x11	79	6.3x11	90	6.3x11	96	8x11.5	107
100	5x11	99	6.3x11	99	6.3x11	99	8x11.5	152	10x12.5	198
					8x11.5	123				
220	8x11.5	149	8x11.5	157	8x11.5	200	10x12.5	245	10x20	320
					10x12.5	234				
330	8x11.5	190	10x12.5	235	10x12.5	255	10x16	310	13x20	370
470	10x12.5	280	10x12.5	290	10x16	360	13x20	420	13x25	495
1000	10x16	352	10x20	430	13x20	511				
2200	13x20	645	16x25	830	16x31.5	950				
3300	16x25	950	16x31.5	1150						

WV / Cap(μ F)	50		63		100		160	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5x11	8	5x11	9	5x11	10	5x11	12
1	5x11	12	5x11	14	5x11	15	6.3x11	18
2.2	5x11	17	5x11	20	5x11	20	8x11.5	28
					6.3x11	22		
3.3	5x11	23	6.3x11	25	6.3x11	28	8x11.5	37
4.7	5x11	30	6.3x11	30	6.3x11	32	10x12.5	45
					8x11.5	36		
10	6.3x11	50	6.3x11	52	8x11.5	52	10x16	79
					10x12.5	55		
22	8x11.5	85	8x11.5	88	10x16	120	13x20	140
			10x12.5	92				
33	8x11.5	89	10x12.5	115	10x20	175	13x20	200
47	10x12.5	123	10x16	150	13x20	187	13x25	215
100	10x16	198	13x20	295	16x25	399		
	10x20	220						
220	13x20	340	13x25	420				
	13x25	375						
330	16x25	500						

WV / Cap(μ F)	200		250	
	Size	Ripple	Size	Ripple
0.47	6.3x11	17	6.3x11	22
1	8x11.5	21	8x11.5	25
2.2	8x11.5	32	10x12.5	39
3.3	10x12.5	40	10x16	43
4.7	10x16	52	10x20	65
10	10x20	86	10x20	109
22	13x20	160	13x25	189
33	13x25	213	16x25	250

Ripple Current (mA, rms) at 105℃ 120Hz

BP Series Bi-polarized



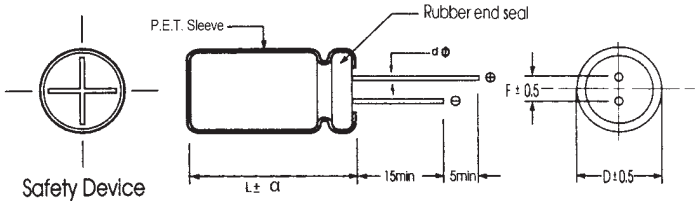
Features

- The BP Series is designed for horizontal deflection current in TV sets where high frequency and high ripple current flows.
- Low dissipation factor at high frequency.
- RoHS Compliant

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	25,50,63 VDC
Capacitance Range	2.2 to 15 μF
Capacitance Tolerance	±10% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I≦100 (μA) After 1 minute with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Less than 3% (+20℃,at 120Hz)
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working Voltage (VDC) | 25 | 50 | 63 Z-40℃／Z+20℃ | 4 | 4 | 4
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±15% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Diagram of Dimensions:(unit:mm)



Dφ	10	13	16	18	22
F	5.0	5.0	7.5	7.5	10
dφ	0.6		0.8		

α	D＜18	D＝18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

Radial

CapXon

BP Series

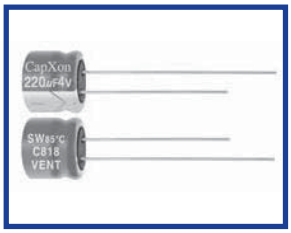
Case Size

ϕ DxL(mm)

Cap(μ F)	Size	WV	Max Ripple Current (at 15.75K Hz Unit:A P-P)		
			105℃	85℃	70℃
2.2	13x25	25v, 50v, 63v	3.4a p-p	5.8 a p-p	7.5 a p-p
3.3	16x25	25v, 50v, 63v	4.1a p-p	7.0 a p-p	9.1 a p-p
4.7	16x31.5	25v, 50v, 63v	4.5 a p-p	7.8 a p-p	10 a p-p
6.8	16x35.5	25v, 50v, 63v	4.6 a p-p	8.0 a p-p	10.4 a p-p
10	18x35.5	25v, 50v, 63v	4.9 a p-p	8.6 a p-p	11.1 a p-p
12	18x41	25v, 50v, 63v	5.0 a p-p	8.8 a p-p	11.5 a p-p
15	18x41	25v, 50v, 63v	5.4 a p-p	9.5 a p-p	12.2 a p-p

Ripple Current (A, rms) at 15.75KHz

SW Series 5mm 85℃



Features

- ◆ Design for audio equipment.
- ◆ RoHS Compliant

Specifications

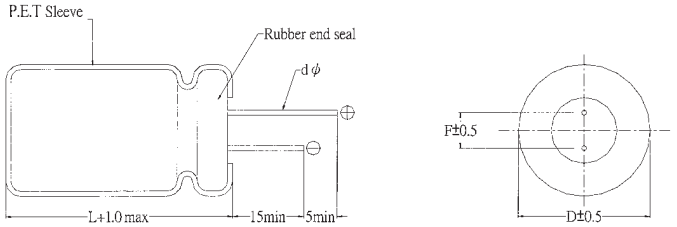
Item	Performance Characteristics
Operating Temperature Range	-40~+85℃
Rated Voltage Range	4~50 VDC
Capacitance Range	0.1 to 470 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I=0.01 CV or 3 (μA) (After 2 minute with rated working voltage applied.)
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max.: 35 / 24 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 7 / 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 15 / 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ :Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

For Audio Equipment

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50	120	300	1K	10K
Multiplier	0.70	1.00	1.17	1.36	1.50

Diagram of Dimension:(unit:mm)



Dφ	4	5	6.3	8
F	1.5	2.0	2.5	3.5
dφ	0.45			0.50

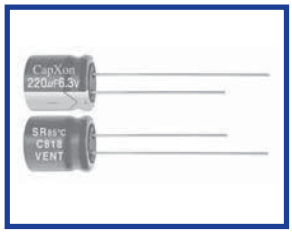
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	4		6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4x5	1.2
0.22													4x5	2.3
0.33													4x5	3.0
0.47													4x5	3.9
1													4x5	7.3
2.2													4x5	11
3.3											4x5	13	4x5	15
4.7									4x5	15	4x5	18	5x5	20
10							4x5	21	5x5	27	5x5	29	6.3x5	31
22			4x5	26	5x5	33	5x5	36	6.3x5	43	6.3x5	46	8x5	52
33	4x5	30	5x5	37	5x5	40	6.3x5	47	6.3x5	52	8x5	62	8x5	70
47	4x5	33	5x5	42	6.3x5	49	6.3x5	58	8x5	70	8x5	81		
100	5x5	54	6.3x5	67	8x5	80	8x5	92	8x5	109				
220	6.3x5	87	8x5	112	8x5	136								
330	8x5	143	8x5	170										
470	8x5	185												

Ripple Current (mA, rms) at 85℃ 120Hz

SR Series 7mm 85℃



Features

- ◆ Design for audio equipment.
- ◆ Lineally suited for very compact audio products.
- ◆ RoHS Compliant

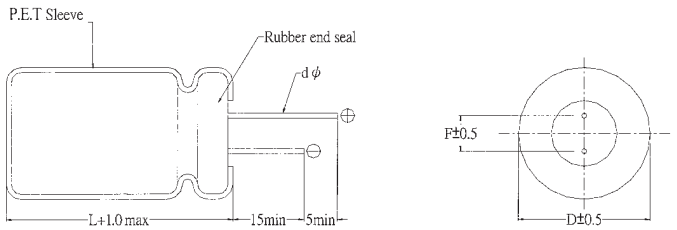
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~+85℃
Rated Voltage Range	6.3~50 VDC
Capacitance Range	0.1 to 220 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I=0.01 CV or 3 (μA) (After 2 minute with rated working voltage applied.)
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 D.F.(%)max.: 24 / 20 / 16 / 14 / 12 / 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 4 / 3 / 3
Endurance	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50	120	300	1K	10K
Multiplier	0.70	1.00	1.17	1.36	1.50

Diagram of Dimension:(unit:mm)



Dφ	4	5	6.3
F	1.5	2.0	2.5
dφ	0.45		0.50

For Audio Equipment

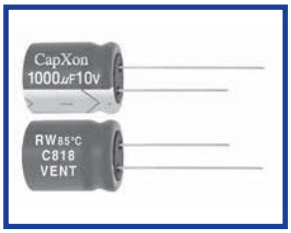
Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3		10		16		25		35		50	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											4x7	1.1
0.22											4x7	2.6
0.33											4x7	3.5
0.47											4x7	5.0
1											4x7	10
2.2											4x7	18
3.3											4x7	23
4.7									4x7	23	4x7	26
10					4x7	28	4x7	29	4x7	31	5x7	35
22	4x7	34	4x7	35	4x7	39	5x7	49	5x7	49	6.3x7	58
33	4x7	40	4x7	45	5x7	55	5x7	55	6.3x7	65		
47	4x7	47	5x7	59	5x7	65	6.3x7	71				
100	5x7	76	6.3x7	88	6.3x7	98						
220	6.3x7	124										

Ripple Current (mA, rms) at 85℃ 120Hz

RW Series 85℃



Features

- ◆ Standard for audio equipment.
- ◆ RoHS Compliant

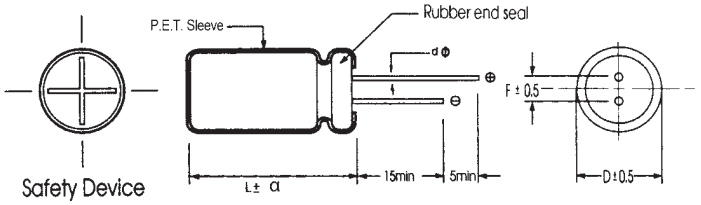
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~+85℃
Rated Voltage Range	6.3~100 VDC
Capacitance Range	0.1 to 33000 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) (After 1 minute with rated working voltage applied.)
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 D.F.(%)max.: 28 / 24 / 20 / 16 / 14 / 12 / 10 / 8 For capacitance＞1000 μF,add 2% per another 1000 μF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage(VDC): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 Z-25℃ / Z+20℃: 5 / 4 / 3 / 2 / 2 / 2 / 2 / 2 Z-40℃ / Z+20℃: 12 / 10 / 8 / 5 / 4 / 3 / 3 / 3
Endurance	Test condition Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ :Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	300	1K	10K
CAP≦47	0.75	1.00	1.35	1.57	1.20
100＜CAP≦470	0.80	1.00	1.23	1.34	1.50
1000≦33000	0.85	1.00	1.10	1.13	1.15

Diagram of Dimension:(unit:mm)



DΦ	5	6.3	8		10	13	16	18	22
F	2.0	2.5	3.5		5.0	5.0	7.5	7.5	10
dΦ	0.5		L＜20	L≧20	0.6		0.8		
			0.5	0.6					

α	D＜18	D＝18		D＞18
	1.5	L＜35.5	L≧35.5	
		1.5	2.0	2.0

For Audio Equipment

Case Size

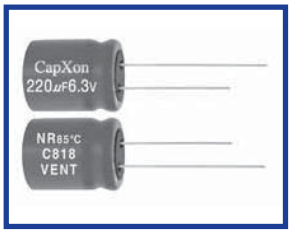
ϕDxL(mm)

WV / Cap(μ F)	6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
47							5x11	117
100			5x11	162	5x11	155	6.3x11	187
220			6.3x11	247	6.3x11	265	8x11.5	325
330	6.3x11	282	6.3x11	300	8x11.5	365	10x12.5	415
470	6.3x11	330	6.3x11	355	8x11.5	445	10x12.5	535
1000	8x11.5	560	10x12.5	600	10x16	780	10x20	950
2200	10x20	1015	10x20	1075	13x20	1300	13x25	1550
3300	10x20	1245	13x20	1410	13x25	1700	16x25	1675
4700	13x20	1435	13x25	1800	16x25	2100	16x31.5	2380
6800	13x25	1600	16x25	2200	16x35.5	2520	18x35.5	2650
10000	16x25	2000	16x35.5	2450	18x35.5	2670	22x41	3000
15000	16x35.5	2620	18x35.5	2900	22x41	3400	22x51	3800
22000	18x41	3220	22x41	3700	22x51	4200		
33000	22x51	3900	22x51	4300				

WV / Cap(μ F)	35		50		63		100	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1			5x11	2.1	5x11	1.5	5x11	2.1
0.22			5x11	2.7	5x11	3	5x11	4.7
0.33			5x11	4.2	5x11	5	5x11	7.5
0.47			5x11	6.0	5x11	7	5x11	11
1			5x11	12	5x11	15	5x11	21
2.2			5x11	24	5x11	28	5x11	31
3.3			5x11	35	5x11	35	5x11	40
4.7			5x11	41	5x11	45	5x11	46
10			5x11	65	5x11	70	6.3x11	75
22			5x11	97	5x11	107	6.3x11	125
33	5x11	107	5x11	120	6.3x11	137	8x11.5	165
47	5x11	125	6.3x11	150	6.3x11	172	10x12.5	220
100	6.3x11	205	8x11.5	255	10x12.5	300	10x20	370
220	10x12.5	370	10x12.5	417	10x16	485	13x25	615
330	10x12.5	475	10x16	580	10x20	670	13x25	755
470	10x16	630	13x20	770	13x20	880	16x25	1000
1000	13x20	1120	13x25	1320	16x25	1350	18x41	1500
2200	16x25	1650	16x35.5	2090	18x35.5	2220	22x51	2400
3300	16x35.5	2270	18x35.5	2430	22x41	2700		
4700	18x35.5	2540	22x41	2900	22x51	3400		
6800	22x41	3000	22x51	3500				

Ripple Current (mA, rms) at 85℃ 120Hz

NR Series 85℃



Features

- ◆ Standard non polarity series for using in polarity reversal circuits.
- ◆ Design For audio equipment.
- ◆ RoHS Compliant

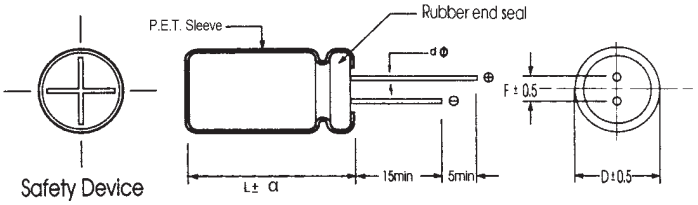
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~+85℃
Rated Voltage Range	6.3~100 VDC
Capacitance Range	0.15 to 1000μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.03 CV or 3 (μA) (After 1 minute with rated working voltage applied.)
Dissipation Factor (tanδ，at 20℃，120Hz)	Working Voltage(VDC) 6.3 10 16 25 35 50 63 100 D.F.(%)max. 24 20 16 16 14 12 10 10
Low Temperature Characteristics (at 120Hz)	Impedance ratio max (at: 120Hz) Working voltage(VDC) 6.3 10 16 25 35 50 63 100 Z-25℃ / Z+20℃ 4 3 2 2 2 2 2 2 Z-40℃ / Z+20℃ 8 6 4 4 3 3 3 3
Endurance	Test condition Duration time : 2000 Hrs Ambient temperature :+85℃ Applied voltage : Rated DC working voltage Each 250 hours,we will reserve the terminal and test the characteristics After test requirement at +20℃ Capacitance change : within ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.8	1	1.30	1.45	1.65	1.70
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimension:(unit:mm)



Dφ	5	6.3	8	10	13	16
F	2.0	2.5	3.5	5.0	5.0	7.5
dφ	0.5			0.6		0.8

α	D＜18	D=18		D＞18
		L＜35.5	L≧35.5	
	1.5	1.5	2.0	2.0

For Audio Equipment

Case Size

ϕ DxL(mm)

WV / Cap(μ F)	6.3V		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4.7							5x11	26
10					5x11	43	5x11	44
22			5x11	60	6.3x11	71	6.3x11	71
33	5x11	62	6.3x11	70	6.3x11	90	8x11.5	110
47	6.3x11	76	6.3x11	95	8x11.5	122	10x12.5	150
100	8x11.5	154	10x12.5	188	10x12.5	208	10x16	250
220	10x12.5	245	10x16	294	10x20	360	13x25	478
330	10x16	330	10x20	360	13x20	480	13x25	615
470	10x20	360	13x20	538	13x25	638	16x25	720
1000	13x25	910	16x25	940	16x31.5	1090		

WV / Cap(μ F)	35		50		63		100	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.15							6.3x11	13
0.47			5x11	12	6.3x11	14	6.3x11	17
1			5x11	18	6.3x11	22	6.3x11	25
1.8			5x11	22	6.3x11	26	6.3x11	32
2.2			5x11	27	6.3x11	33	6.3x11	39
3.3			5x11	29	8x11.5	36	8x11.5	49
4.7	5x11	34	6.3x11	42	8x11.5	44	10x12.5	60
10	6.3x11	48	8x11.5	65	8x11.5	73	10x16	98
22	8x11.5	96	10x12.5	118	10x12.5	125	10x20	165
33	10x12.5	135	10x16	155	10x16	170	13x20	275
47	10x12.5	154	10x20	200	10x20	215		
100	10x20	275	13x25	370	13x25	384		
220	13x25	560	16x25	645				
330	16x25	670	16x31.5	760				

Ripple Current (mA, rms) at 85℃ 120Hz

LR Series Snap-in Type 85℃

Features

- ◆ Snap-in design for audio equipment.
- ◆ Aluminum case designed explosion-proof vent. Non solvent-proof type
- ◆ RoHS Compliant

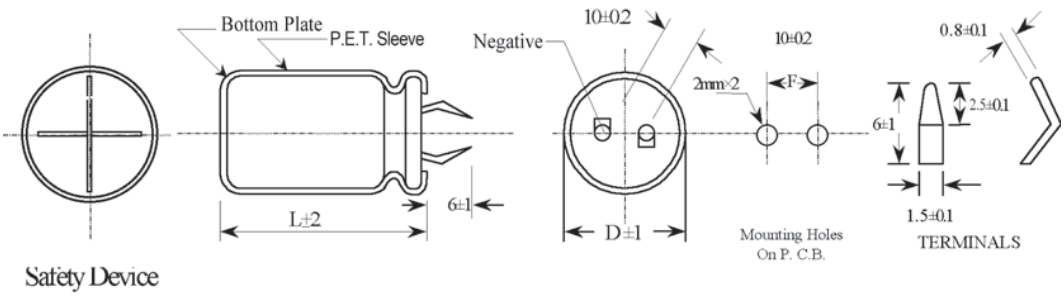
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~+85℃
Rated voltage Range	16 to 100 VDC
Capacitance Range	680~33000 μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.02 CV(μA) After 5 minute with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Working Voltage(VDC): 16 / 25 / 35 / 50 / 63 / 80 / 100 D.F.(%)max.: 35 / 30 / 30 / 30 / 22 / 20 / 20 For capacitance＞22000 μF,add 2% per another 1000 μF.
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated voltage(V): 16 / 25 / 35 / 50 / 63 / 100 Z - 25℃／Z+20℃: 5 / 4 / 4 / 4 / 4 / 4 Z - 40℃／Z+20℃: 15 / 15 / 12 / 12 / 12 / 12
Endurance	Test condition Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±25% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	1K	10K	100K
CAP≦100	0.80	1	1.36	1.48	1.53
100＜CAP≦1000	0.80	1	1.25	1.35	1.38
1000＜CAP	0.80	1	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



For Audio Equipment

Case Size

ϕ DxL(mm)

WV / ϕD / Cap(μF)	16								25							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
820									22x20	0.75						
1000											25x20	0.95				
1200	22x20	0.95														
1500			25x20	1.10									30x20	1.30		
1800	22x25	1.20									25x25	1.55				
2200					30x20	1.35			22x35	1.85	25x20	1.50	30x25	1.80	35x20	1.75
											25x30	1.80				
2700			25x25	1.75					22x25	1.70						
									22x45	2.20	25x35	2.15				
3300	22x20	1.50	25x30	2.00			35x20	1.95	22x20	1.50			30x20	1.85		
									22x30	1.80			30x30	2.40		
									22x50	2.50	25x40	2.45			35x25	2.45
3900	22x45	2.30	25x20	1.55							25x20	1.55				
			25x35	2.35	30x25	2.35					25x25	1.10				
											25x45	2.80	30x35	2.80		
4700	22x20	1.35	25x40	2.70					22x25	1.70					35x20	2.20
	22x25	1.75					35x25	2.60	22x35	2.30	25x30	2.25			35x30	3.15
	22x50	2.75			30x30	2.70							30x40	3.25		
5600			25x45	2.90	30x20	1.85			22x40	2.50	25x35	2.40	30x20	1.85		
													30x25	2.50	35x35	3.50
					30x35	2.90							30x45	3.50		
6800	22x30	2.20	25x20	1.70			35x30	3.15	22x30	2.20	25x25	2.15				
			25x25	2.15					22x50	2.65	25x40	2.65	30x30	2.65		
			25x50	3.20	30x40	3.20									35x40	3.80
8200							35x20	2.25	22x35	2.35	25x30	2.30			35x20	2.25
	22x25	1.90	25x30	2.30			35x35	3.30			25x45	2.90	30x35	2.85	35x25	3.05
	22x35	2.40			30x45	3.35									35x45	4.00
10000	22x30	2.05			30x20	2.10	35x40	3.50	22x40	2.65	25x35	2.50	30x25	2.65		
			25x25	2.00	30x25	2.50					25x50	3.30	30x40	3.30	35x30	3.30
	22x40	2.65	25x35	2.45												
12000	22x35	2.20	25x30	2.15	30x30	2.72	35x20	2.10	22x45	2.90	25x40	2.75	30x30	2.80	35x25	2.65
	22x50	2.75	25x40	2.75			35x40	3.50					30x45	3.55	35x35	3.50
							35x45	3.70								
15000	22x40	2.50	25x35	2.40	30x25	2.50					25x45	3.15	30x35	3.10		
			25x45	3.10	30x35	3.10							30x50	4.15	35x40	4.00
18000	22x45	2.80	25x40	2.60	30x30	2.65	35x30	3.45			25x50	3.55	30x40	3.40	35x30	3.50
			25x50	3.50	30x40	3.40									35x45	4.45
22000			25x45	2.95	30x35	2.90	35x25	2.90					30x45	3.85	35x35	3.85
					30x45	3.80	35x35	3.80								
27000			25x50	3.40	30x40	3.25										
					30x50	4.25	35x30	3.35							35x40	4.30
							35x40	4.25								
33000					30x45	3.70	35x35	3.65							35x45	4.85
							35x45	4.50								

Ripple Current (A, rms) at 85℃ 120Hz

ϕ DxL(mm)

WV / ϕD / Cap(μF)	35								50							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
680									22x25	1.00						
820			25x20	0.85					22x20	1.00						
									22x30	1.25	25x20	1.35				
1000	22x25	1.00									25x20	1.50				
1200	22x20	1.30	25x25	1.40												
	22x30	1.45			30x20	1.40										
1500	22x35	1.55	25x30	1.55					22x20	1.55	25x35	2.15	30x20	1.80		
									22x30	1.80			30x25	2.15		
									22x45	2.20						
1800	22x25	1.55	25x20	1.65	30x25	1.75	35x20	1.70	22x50	2.45	25x20	1.65			35x25	2.40
	22x40	1.45									25x25	2.15				
											25x40	2.45				
2200	22x45	1.95	25x35	1.95	30x30	1.95			22x25	1.85	25x30	2.30	30x35	2.60	35x20	2.60
									22x35	2.35	25x50	2.65			35x30	2.60
2700	22x30	2.05	25x25	2.00	30x20	2.05	35x25	2.30	22x45	2.45			30x25	2.60		
			25x45	2.35	30x35	2.30					25x35	2.50	30x45	3.00	35x35	2.95
3300	22x25	1.75	25x30	2.20			35x30	2.65	22x35	2.20			30x30	2.80		
	22x35	2.25	25x50	2.70	30x40	2.70			22x50	2.80	25x40	2.80	30x50	3.30	35x40	3.25
3900	22x40	2.40	25x35	2.30	30x20	1.85	35x20	2.50							35x20	2.45
					30x25	2.40	35x35	3.00	22x40	2.45	25x30	2.50	30x25	2.35	35x25	3.15
					30x45	3.00					25x45	3.00	30x35	3.00	35x45	3.50
4700																
	22x30	2.20	25x25	2.15	30x30	2.55	35x40	3.55	22x45	2.60	25x35	2.70	30x40	3.30	35x30	3.35
	22x45	2.70			30x50	3.55					25x50	3.40			35x50	3.90
5600	22x35	2.35	25x30	2.25			35x20	2.25	22x50	2.90			30x30	3.00	35x20	2.85
	22x40	3.00	25x40	3.00			35x25	2.85			25x40	2.90	30x45	3.60	35x35	3.60
	22x50	2.60					35x45	3.80								
6800					30x25	2.60					25x40	3.30	30x35	3.25		
					30x35	3.30	35x30	3.05					30x50	4.10	35x40	3.95
							35x50	4.15								
8200	22x45	2.90	25x40	2.70	30x30	2.75							30x40	3.55	35x30	3.65
					30x40	3.60	35x35	3.30							35x45	4.40
10000			25x45	3.05	30x35	3.00							30x45	4.00	35x35	4.00
					30x50	3.80	35x25	3.20							35x50	5.50
							35x40	3.70								
12000			25x50	3.45	30x40	3.30	35x30	3.40								
							35x35	4.10							35x40	4.35
							35x45	3.80								
15000					30x45	3.80	35x50	4.80							35x50	4.70
18000					30x50	4.30	35x40	4.15								
22000							35x45	4.70								

Ripple Current (A, rms) at 85℃ 120Hz

ϕDxL(mm)

WV / ϕD / Cap(μF)	63								80							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
680	22x25	1.75							22x35	2.25	25x30	2.15				
820	22x20	1.30	25x20	1.65	30x20	1.90			22x30	2.05	25x20	1.65	30x20	2.05	35x20	2.55
	22x30	1.90	25x25	1.85					22x40	2.45	25x25	2.00	30x25	2.40		
											25x35	2.35				
1000	22x25	1.85							22x25	1.85			30x30	2.60	35x20	2.10
	22x35	2.05	25x30	2.00					22x35	2.20	25x30	2.15				
									22x50	2.60	25x40	2.60				
1200	22x30	1.95	25x20	1.65	30x20	1.95			22x30	1.95	25x25	1.90	30x20	2.00	35x25	2.95
	22x40	2.25	25x25	1.90	30x25	2.20	35x20	2.30	22x40	2.45	25x35	2.30	30x25	2.40		
											25x45	2.85	30x35	2.80		
1500	22x25	1.90							22x35	2.15	25x30	2.10				
	22x35	2.15	25x30	2.10					22x50	2.60	25x40	2.65	30x30	2.65	35x30	3.25
	22x45	2.60	25x35	2.65							25x50	3.30	30x40	3.20		
1800	22x30	2.00	25x25	2.00	30x20	2.05	35x20	2.45	22x40	2.35			30x25	2.40	35x20	2.50
	22x40	2.35	25x40	2.90	30x25	2.35	35x25	2.70	22x45	2.70	25x45	2.85	30x35	2.85	35x25	3.00
	22x50	2.90			30x30	2.90							30x45	3.55	35x35	3.50
2200	22x35	2.20	25x30	2.15			35x20	2.10			25x35	2.75	30x30	2.55		
	22x45	2.70	25x35	2.75	30x30	2.50					25x50	3.25	30x40	3.15	35x30	3.25
			25x45	3.25	30x35	3.20							30x50	4.05	35x40	3.90
2700	22x40	2.45	25x35	2.35	30x25	2.50	35x25	2.95					30x35	2.80	35x25	3.00
			25x45	2.80	30x35	2.75	35x30	3.65					30x45	3.60	35x35	3.55
					30x45	3.30									35x45	4.45
3300	22x45	2.80	25x40	2.60	30x30	2.70	35x30	3.15			25x50	3.25	30x40	3.15	35x30	3.20
			25x50	3.20	30x40	3.20	35x35	4.00					30x50	4.10	35x40	3.95
					30x50	3.80									35x50	5.05
3900			25x45	2.85	30x35	2.85							30x45	3.45	35x35	3.40
					30x45	3.35	35x35	3.35							35x45	4.35
							35x40	4.30								
4700							35x30	3.20					30x45	3.85	35x40	3.75
			25x50	3.20	30x40	3.10									35x50	4.85
					30x50	3.80	35x50	4.50								
5600															35x45	4.10
					30x45	3.45	35x35	3.40								
							35x40	4.35								
6800					30x50	3.90	35x40	3.75							35x50	4.65
							35x50	4.60								
8200							35x45	4.20								
10000							35x50	4.80								

Ripple Current (A, rms) at 85℃ 120Hz

ϕ DxL(mm)

WV / ϕD / Cap(μF)	100							
	22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
680	22x25	1.75						
	22x35	2.15	25x30	2.10				
	22x45	2.65	25x35	2.70				
820	22x30	1.85	25x25	1.80	30x20	1.90		
	22x40	2.40			30x25	2.35	35x20	2.45
	22x50	3.00	25x40	3.00			35x25	2.85
1000	22x45	2.70	25x35	2.35	30x30	3.00		
			25x40	3.10	30x35	3.30	35x30	3.05
			25x50	2.35				
1200	22x40	2.20	25x30	2.75	30x25	2.20	35x20	2.30
	22x50	3.00			30x30	3.05	35x25	2.90
					30x40	3.60	35x35	3.30
1500	22x45	2.55	25x35	3.60	30x35	3.40	35x30	3.40
			25x50	3.20	30x50	3.90	35x40	3.95
1800	22x50	2.85	25x40	2.85	30x30	2.90	35x25	2.75
					30x40	3.70	35x35	3.40
							35x45	4.15
2200			25x45	3.20	30x35	3.20	35x30	3.00
					30x50	3.95	35x40	3.80
							35x50	4.75
2700					30x40	3.55	35x35	3.25
							35x45	4.30
3300					30x50	3.75	35x50	4.95
3900							35x40	4.30
4700							35x50	4.50

Ripple Current (A, rms) at 85℃ 120Hz

CapXon

LP series

LP Series 85℃

Features

Standard capacitors

Applications

- Switch-mode power supplies in industrial and entertainmentelectronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Specifications

Item	Performance Characteristics											
Operating Temperature Range	-40 to +85℃						-25 to +85℃					
Rated voltage V_R	6.3 to 450 V DC						500 to 600 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	22 to 100000 µF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	I≤ $3\sqrt{CV}$ (µA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	µF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	-	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											
Useful life 85 °C; V_R,$I_{AC,R}$ 85 °C; V_R,$I_{AC,R}$	V_R≤100V: >3000 h VR>100V: >5000 h	Requirements: V_R≤100V DC/C ≤±30% of initial value ESR ≤3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage:≤ 1 %						V_R>100V DC/C ≤ ±20% of initial value ESR ≤ 2 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 1 %					
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %						V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %					
Shelf Life 85 °C	1000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %						V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %					
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.											
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz											
	V_R(V)	6.3	10	16	25	35~100		160~250		315~450		500~600
	$Z_{-25℃}$ / $Z_{20℃}$	5	5	5	4	4		4		8		8
	$Z_{-40℃}$ / $Z_{20℃}$	15	15	15	15	12		7		10		-
Sectional specification	IEC 60384-4 and JIS-C-5101											

Multiplier for Ripple Current vs. Frequency

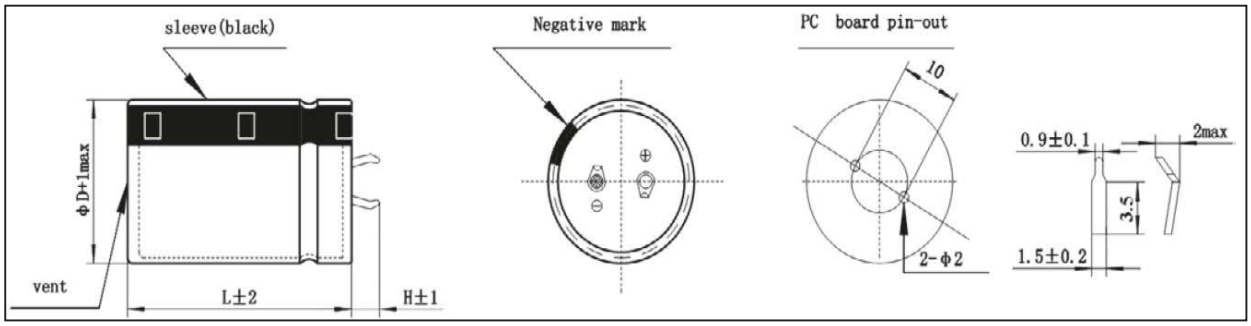
V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

CapXon

LP series

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
6.3	15000	22x25	2.5	37	49
6.3	18000	22x30	2.7	31	41
6.3	18000	25x25	2.71	31	41
6.3	22000	22x30	3.1	26	33
6.3	22000	25x25	3.12	26	33
6.3	27000	22x35	3.5	23	29
6.3	27000	25x30	3.55	23	29
6.3	27000	30x25	3.6	23	29
6.3	33000	22x40	3.58	19	24
6.3	33000	25x35	4	19	24
6.3	33000	30x25	4	19	24
6.3	39000	22x50	4.6	16	20
6.3	39000	25x40	4.5	16	20
6.3	39000	30x30	4.5	16	20
6.3	39000	35x25	4.55	16	20
6.3	47000	25x45	5.1	13	17
6.3	47000	30x35	5.1	13	17
6.3	47000	35x30	5.12	13	17
6.3	56000	25x50	5.75	11	14
6.3	56000	30x40	5.8	11	14
6.3	56000	35x30	5.8	11	14
6.3	68000	30x45	6.5	9	12
6.3	68000	35x35	6.5	9	12
6.3	82000	30x50	7.35	8	10
6.3	82000	35x40	7.38	8	10
6.3	100000	35x45	8.35	6	8
10	4700	22x20	2.4	76	99
10	6800	22x25	2.84	53	68
10	8200	22x25	2.9	44	57
10	10000	22x25	2.95	36	46
10	10000	25x25	3.06	36	46
10	12000	22x25	3.32	34	44
10	12000	25x25	3.43	34	44
10	15000	22x30	3.4	27	35
10	15000	25x25	3.85	27	35
10	18000	22x35	4.3	23	29
10	18000	25x25	4.2	23	29
10	22000	22x40	4.8	19	24
10	22000	25x30	4.75	19	24
10	22000	30x25	4.83	19	24
10	27000	25x35	5.1	19	25
10	27000	30x30	5.32	19	25
10	27000	22x45	5.3	19	25
10	33000	22x50	5.5	15	20
10	33000	25x40	5.5	15	20
10	33000	30x30	5.5	15	20
10	33000	35x25	5.6	15	20
10	39000	25x45	6.31	13	17
10	39000	30x35	6.25	13	17
10	39000	35x30	6.39	13	17
10	47000	25x50	6.6	11	14
10	47000	30x40	6.7	11	14
10	47000	35x30	6.72	11	14
10	56000	30x45	6.8	9	12
10	56000	35x35	6.9	9	12
10	68000	35x40	7.8	8	10
10	68000	30x50	7.6	8	10
10	82000	35x50	8.5	6	8
16	4700	22x20	2.4	76	99
16	6800	22x25	2.84	53	68

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
16	8200	22x25	2.9	44	57
16	10000	22x25	3.06	36	46
16	10000	25x25	3.5	36	46
16	12000	22x30	3.43	34	44
16	12000	25x25	3.45	34	44
16	15000	22x35	3.94	27	35
16	15000	25x30	4.2	27	35
16	15000	30x25	3.95	27	35
16	18000	22x40	4.5	23	29
16	18000	25x30	4.34	23	29
16	22000	22x45	4.8	19	24
16	22000	25x35	4.75	19	24
16	22000	25x40	5.1	19	24
16	22000	30x30	5.2	19	24
16	27000	35x25	5.9	15	20
16	27000	25x45	6.3	15	20
16	27000	30x35	6.5	15	20
16	33000	25x50	6.5	12	16
16	33000	35x30	6.8	12	16
16	33000	30x40	6.6	12	16
16	39000	25x45	5.8	10	14
16	39000	35x35	7.1	10	14
16	39000	30x45	7.05	10	14
16	47000	25x50	6.2	9	11
16	47000	30x50	7.65	9	11
16	47000	35x40	7.75	9	11
16	56000	35x50	8.2	7	10
16	56000	30x50	7.8	7	10
16	56000	35x45	8.1	7	10
16	68000	35x50	8.55	6	8
25	4700	22x25	2.64	65	85
25	5600	22x25	2.72	55	71
25	6800	22x30	3.1	45	59
25	6800	25x25	3.2	45	59
25	8200	22x30	3.15	37	49
25	8200	25x25	3.25	37	49
25	10000	22x35	3.43	31	40
25	10000	25x30	3.9	31	40
25	10000	30x25	3.43	31	40
25	12000	22x40	3.84	30	39
25	12000	25x35	4.37	30	39
25	12000	30x30	4.4	30	39
25	15000	22x50	4.94	24	31
25	15000	25x40	4.8	24	31
25	15000	30x30	4.85	24	31
25	18000	25x45	5.5	20	26
25	18000	30x35	5.6	20	26
25	22000	30x35	5.4	16	21
25	22000	35x30	5.5	16	21
25	27000	30x45	6.25	13	17
25	27000	35x35	6.3	13	17
25	33000	30x50	6.85	11	14
25	33000	35x40	6.9	11	14
25	39000	35x45	7.36	9	12
25	47000	35x50	8.62	8	10
35	2200	22x25	2.18	120	150
35	3300	22x25	2.46	77	100
35	3900	22x25	2.5	65	85
35	4700	22x30	3.1	54	71
35	4700	25x25	3.1	54	71

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
35	5600	22x30	2.72	46	59
35	5600	25x25	2.8	46	59
35	6800	30x25	3.8	38	49
35	6800	22x35	3.6	38	49
35	6800	25x30	3.7	38	49
35	8200	22x40	3.9	31	40
35	8200	25x35	3.95	31	40
35	8200	30x30	4.1	31	40
35	10000	25x40	4.68	26	33
35	10000	30x30	4.58	26	33
35	10000	22x45	4.15	26	33
35	12000	22x50	4.7	26	33
35	12000	25x45	5.1	26	33
35	12000	30x35	5.15	26	33
35	12000	35x30	5.25	26	33
35	15000	25x50	5.3	20	27
35	15000	30x40	5.72	20	27
35	15000	35x30	5.72	20	27
35	18000	30x45	6.1	17	22
35	18000	35x35	6.1	17	22
35	22000	30x50	6.5	14	18
35	22000	35x40	6.55	14	18
35	27000	35x45	6.8	13	17
35	33000	35x50	7.2	11	14
50	1000	22x20	1.2	210	270
50	1500	22x25	1.44	140	180
50	2200	22x25	2.04	92	120
50	2700	22x30	2.3	76	98
50	3300	22x30	2.9	62	80
50	3300	25x25	3.1	62	80
50	3900	22x30	2.95	52	68
50	3900	25x25	3.15	52	68
50	4700	22x35	3.3	43	56
50	4700	25x30	3.4	43	56
50	4700	30x25	3.5	43	56
50	5600	22x40	3.6	36	47
50	5600	25x40	3.75	36	47
50	5600	30x30	3.8	36	47
50	5600	35x25	3.85	36	47
50	6800	22x50	4.2	30	39
50	6800	25x40	4.15	30	39
50	6800	30x30	4.2	30	39
50	8200	25x45	4.75	25	32
50	8200	30x35	4.8	25	32
50	8200	35x30	4.9	25	32
50	10000	35x30	5.2	20	27
50	10000	25x50	5.2	20	27
50	10000	30x40	5.5	20	27
50	12000	30x45	5.8	26	33
50	12000	35x35	6.1	26	33
50	15000	30x50	6.5	20	27
50	15000	35x40	6.8	20	27
50	18000	35x45	7.2	17	22
50	18000	30x50	7.1	17	22
50	22000	35x50	7.8	14	18
63	1000	22x20	1.5	210	270
63	1500	22x25	1.68	140	180
63	1800	22x25	2.2	120	150
63	2200	22x30	2.52	92	120
63	2200	25x25	2.55	92	120

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	2700	22x35	2.82	76	98
63	2700	25x30	2.9	76	98
63	3300	22x35	3.15	62	80
63	3300	25x30	3.25	62	80
63	3300	30x25	3.35	62	80
63	3900	22x40	3.65	52	68
63	3900	25x35	3.75	52	68
63	3900	30x30	3.8	52	68
63	4700	22x46	3.4	43	56
63	4700	25x35	3.3	43	56
63	4700	30x31	3.45	43	56
63	4700	35x25	3.5	43	56
63	5600	25x45	4.65	36	47
63	5600	30x35	4.7	36	47
63	5600	35x30	4.8	36	47
63	6800	25x50	5.3	30	39
63	6800	30x40	5.3	30	39
63	6800	35x30	5.4	30	39
63	8200	30x40	5.45	25	32
63	8200	35x35	5.72	25	32
63	10000	30x50	6.35	20	27
63	10000	35x40	6.5	20	27
63	12000	35x45	6.6	21	28
63	15000	35x50	6.8	17	22
80	680	22x20	1.25	220	290
80	1000	22x25	1.62	150	200
80	1200	22x25	1.65	130	170
80	1500	22x30	2.5	100	130
80	1500	25x25	2.5	100	130
80	1800	22x30	2.92	85	110
80	1800	25x25	3	85	110
80	2200	22x35	3.25	70	90
80	2200	25x30	3.35	70	90
80	2200	30x25	3.4	70	90
80	2700	22x40	3.5	57	74
80	2700	25x35	3.6	57	74
80	2700	30x30	3.65	57	74
80	3300	22x45	3.7	46	60
80	3300	25x40	3.9	46	60
80	3300	30x30	3.9	46	60
80	3900	22x50	4.8	39	51
80	3900	25x45	4.9	39	51
80	3900	30x35	4.9	39	51
80	4700	25x50	5.4	33	42
80	4700	30x40	5.45	33	42
80	4700	35x30	5.5	33	42
80	5600	30x45	5.6	27	36
80	5600	35x35	5.65	27	36
80	6800	30x50	5.8	23	29
80	6800	35x40	5.85	23	29
80	8200	35x52	6.2	19	24
80	10000	35x50	6.65	15	20
80	12000	35x60	7.1	13	17
100	470	22x20	1.34	320	420
100	680	22x25	1.53	220	290
100	820	22x25	1.9	180	240
100	1000	22x25	2	150	200
100	1000	25x25	1.95	150	200
100	1200	22x30	2.4	130	170
100	1200	25x25	2.4	130	170

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	1500	22x35	2.85	100	130
100	1500	25x30	2.95	100	130
100	1500	30x25	3.1	100	130
100	1800	22x40	3.3	85	110
100	1800	25x35	3.5	85	110
100	1800	30x30	3.4	85	110
100	2700	35x30	4.1	57	74
100	2700	22x50	3.73	57	74
100	2700	25x40	3.75	57	74
100	2700	30x35	4	57	74
100	3300	25x50	4.15	46	60
100	3300	30x40	4.2	46	60
100	3300	35x30	4.2	46	60
100	3300	30x35	3.9	46	60
100	3900	30x45	4.6	39	51
100	3900	35x35	4.7	39	51
100	3900	30x40	4.5	39	51
100	3900	35x30	4.52	39	51
100	4700	30x50	5.86	33	42
100	4700	35x40	5.9	33	42
100	4700	30x45	5.1	33	42
100	4700	35x35	5.1	33	42
100	5600	35x45	6.34	27	36
100	5600	30x50	5.8	27	36
100	5600	35x40	5.9	27	36
100	6800	35x45	6.6	23	29
100	6800	35x50	6.8	23	29
100	8200	35x60	7.3	19	24
160	180	22x20	1.12	650	1110
160	220	22x20	1.16	530	900
160	220	22x25	1.2	530	900
160	270	22x25	1.35	440	740
160	330	22x25	1.39	350	600
160	330	22x30	1.44	350	600
160	390	25x25	1.66	300	510
160	470	25x25	1.78	250	420
160	470	22x30	1.76	250	420
160	560	22x25	2.3	210	360
160	560	22x30	2.4	210	360
160	680	22x30	2.5	170	290
160	680	25x30	2.55	170	290
160	820	22x35	2.75	140	240
160	820	25x25	2.53	140	240
160	1000	22x40	3	120	200
160	1000	25x30	3	120	200
160	1200	22x45	3.26	100	170
160	1200	25x35	3.25	100	170
160	1200	30x25	3.05	100	170
160	1500	22x50	3.73	76	130
160	1500	25x40	3.73	76	130
160	1500	30x30	3.73	76	130
160	1500	35x25	3.5	76	130
160	1800	25x45	4.2	65	110
160	1800	30x35	4.2	65	110
160	1800	35x30	4.3	65	110
160	2200	30x40	4.78	53	90
160	2200	35x35	4.85	53	90
160	2700	30x45	4.9	43	74
160	2700	35x40	5.45	43	74
160	3300	35x45	5.75	35	60

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	3900	35x50	6	30	51
180	330	22x25	1.43	350	600
180	390	22x30	1.62	300	510
180	470	22x25	2.09	250	420
180	470	22x30	1.8	250	420
180	470	25x25	2	250	420
180	560	22x30	2.1	210	360
180	560	22x35	2.1	210	360
180	560	25x30	2.15	210	360
180	680	22x30	2.5	170	290
180	680	22x40	2.6	170	290
180	680	25x25	2.51	170	290
180	680	30x25	2.62	170	290
180	820	22x35	2.76	140	240
180	820	25x30	2.8	140	240
180	820	30x30	2.57	140	240
180	1000	22x45	3	120	200
180	1000	25x35	3	120	200
180	1000	30x25	3	120	200
180	1200	22x50	3.31	100	170
180	1200	25x40	3.31	100	170
180	1200	30x30	3.3	100	170
180	1200	35x25	3.4	100	170
180	1500	25x45	3.83	76	130
180	1500	30x35	3.85	76	130
180	1500	35x30	3.83	76	130
180	1800	25x50	4.32	65	110
180	1800	30x40	4.32	65	110
180	1800	35x30	4.35	65	110
180	2200	30x45	4.92	53	90
180	2200	35x40	5.12	53	90
180	2700	35x45	5.52	43	74
200	150	22x20	0.96	780	1330
200	180	22x20	0.98	650	1110
200	180	22x25	1	650	1110
200	220	20x25	1.2	530	900
200	220	22x25	1.36	530	900
200	220	22x31	1.38	530	900
200	270	22x25	1.46	440	740
200	270	22x30	1.5	440	740
200	330	22x25	1.7	350	600
200	330	20x36	1.6	350	600
200	330	22x30	1.89	350	600
200	330	25x25	1.92	350	600
200	390	22x25	1.75	300	510
200	390	25x25	1.95	300	510
200	390	22x30	1.92	300	510
200	390	25x30	1.95	300	510
200	470	22x25	1.9	250	420
200	470	25x25	2.01	250	420
200	470	22x30	2.09	250	420
200	470	25x30	2.23	250	420
200	560	22x30	2.44	210	360
200	560	22x35	2.5	210	360
200	560	25x25	2.43	210	360
200	560	25x30	2.5	210	360
200	680	22x35	2.68	170	290
200	680	30x25	2.4	170	290
200	680	22x45	2.9	170	290
200	680	25x30	2.8	170	290

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	680	25x35	2.98	170	290
200	820	22x40	2.93	140	240
200	820	25x30	2.93	140	240
200	820	25x35	3	140	240
200	820	30x25	2.95	140	240
200	820	30x30	3.1	140	240
200	820	22x45	3.1	140	240
200	1000	22x45	3.25	120	200
200	1000	22x50	3.32	120	200
200	1000	25x35	3.25	120	200
200	1000	30x30	3.32	120	200
200	1000	35x25	3.3	120	200
200	1200	22x50	3.5	100	170
200	1200	25x40	3.5	100	170
200	1200	30x30	3.5	100	170
200	1200	30x35	3.6	100	170
200	1500	25x50	4.1	76	130
200	1500	30x35	3.8	76	130
200	1500	35x30	3.87	76	130
200	1800	30x40	3.9	65	110
200	1800	30x45	4.4	65	110
200	1800	35x35	4.5	65	110
200	1800	35x45	5.84	65	110
200	2200	30x50	5	53	90
200	2200	35x40	4.92	53	90
200	2700	35x45	5.9	43	74
200	2700	35x50	6	43	74
200	3300	35x50	6.1	35	60
250	120	22x20	0.85	980	1660
250	150	22x20	0.9	780	1330
250	150	22x25	0.98	780	1330
250	180	22x25	1.05	650	1110
250	180	22x30	1.12	650	1110
250	220	22x25	1.26	530	900
250	270	22x25	1.41	440	740
250	270	22x30	1.6	440	740
250	330	22x30	1.77	350	600
250	330	25x25	1.78	350	600
250	390	22x30	2	300	510
250	390	25x25	2	300	510
250	470	22x35	2.12	250	420
250	470	25x30	2.11	250	420
250	470	30x30	2.38	250	420
250	560	22x40	2.26	210	360
250	560	25x30	2.26	210	360
250	560	25x35	2.32	210	360
250	560	30x25	2.26	210	360
250	680	22x45	2.81	170	290
250	680	25x35	2.59	170	290
250	680	30x30	2.51	170	290
250	800	30x40	4.67	150	250
250	820	25x40	2.98	140	240
250	820	30x30	2.78	140	240
250	820	35x25	2.78	140	240
250	1000	25x45	3.33	120	200
250	1000	25x50	3.54	120	200
250	1000	30x35	3.33	120	200
250	1000	35x30	3.33	120	200
250	1200	30x40	3.67	100	170
250	1200	35x35	3.8	100	170

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	1500	30×50	4.45	76	130
250	1500	35×40	4.45	76	130
250	1800	35×45	4.56	65	110
250	2200	35×50	4.76	53	90
315	180	25×25	1.32	650	1110
315	220	22×30	1.42	530	900
315	270	25×30	1.63	440	740
315	330	22×40	1.83	350	600
315	330	25×30	1.83	350	600
315	330	30×25	1.85	350	600
315	390	22×45	2.02	300	510
315	390	25×35	1.98	300	510
315	390	30×30	2.15	300	510
315	470	25×40	2.28	250	420
315	470	30×30	2.3	250	420
315	470	35×25	2.35	250	420
315	560	25×45	2.57	210	360
315	560	30×35	2.57	210	360
315	560	35×30	2.65	210	360
315	680	30×40	2.88	170	290
315	680	35×35	2.92	170	290
315	820	30×45	3.26	140	240
315	820	35×40	3.35	140	240
315	1000	30×50	3.63	120	200
315	1000	35×45	3.72	120	200
350	100	22×25	0.76	1170	1990
350	120	22×25	0.99	980	1660
350	120	25×25	1.02	980	1660
350	150	22×25	1.12	780	1330
350	180	22×30	1.22	650	1110
350	220	22×40	1.41	530	900
350	220	25×35	1.47	530	900
350	220	30×25	1.48	530	900
350	270	22×40	1.7	440	740
350	270	25×30	1.67	440	740
350	330	22×45	1.9	350	600
350	330	25×35	1.89	350	600
350	330	35×30	1.95	350	600
350	390	22×50	2.08	300	510
350	390	25×40	2.07	300	510
350	390	30×30	2.09	300	510
350	390	35×25	2.15	300	510
350	470	25×45	2.41	250	420
350	470	30×35	2.5	250	420
350	470	35×30	2.55	250	420
350	560	25×50	2.61	210	360
350	560	30×40	2.63	210	360
350	560	35×30	2.65	210	360
350	680	30×45	2.97	170	290
350	680	35×35	3	170	290
350	820	30×50	3.26	140	240
350	820	35×45	3.4	140	240
350	1000	35×50	3.55	120	200
385	82	22×25	0.75	1430	2430
385	100	22×30	0.85	1170	1990
385	120	22×30	0.95	980	1660
385	120	25×25	0.98	980	1660
385	150	22×35	1.12	780	1330
385	150	25×30	1.15	780	1330
385	180	22×40	1.21	650	1110

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
385	180	25×35	1.25	650	1110
385	180	30×25	1.31	650	1110
385	220	22×45	1.45	530	900
385	220	25×35	1.45	530	900
385	220	30×30	1.47	530	900
385	270	25×40	1.59	440	740
385	270	30×35	1.65	440	740
385	330	25×50	1.85	350	600
385	330	30×40	1.89	350	600
385	330	35×30	1.91	350	600
385	390	30×40	2.07	300	510
385	390	35×35	2.1	300	510
385	470	30×50	2.62	250	420
385	470	35×40	2.84	250	420
385	560	35×45	2.98	210	360
385	680	35×50	3.71	170	290
385	680	40×40	3.82	170	290
385	820	35×55	4.18	140	240
385	820	40×45	4.25	140	240
385	1000	35×65	4.95	120	200
385	1000	40×50	4.89	120	200
385	1000	45×40	4.85	120	200
385	1200	35×75	5.68	100	170
385	1200	40×60	5.55	100	170
385	1200	45×45	5.52	100	170
385	1500	35×90	6.71	76	130
385	1500	40×70	6.59	76	130
385	1500	45×55	6.55	76	130
385	1800	40×80	7.23	65	110
385	1800	45×60	7.12	65	110
385	2200	40×95	8.54	53	90
385	2200	45×75	8.31	53	90
385	2700	45×85	8.91	43	74
400	47	22×20	0.42	2490	4230
400	56	22×25	0.53	2090	3550
400	68	22×20	0.44	1720	2930
400	68	22×25	0.47	1720	2930
400	82	20×25	0.6	1430	2430
400	82	22×25	0.83	1430	2430
400	100	22×25	0.85	1170	1990
400	100	22×30	0.91	1170	1990
400	120	22×25	1.03	980	1660
400	150	22×25	1.15	780	1330
400	150	22×30	1.18	780	1330
400	150	25×30	1.22	780	1330
400	150	30×25	1.25	780	1330
400	180	22×30	1.5	650	1110
400	180	25×25	1.5	650	1110
400	180	30×25	1.53	650	1110
400	220	22×35	1.7	530	900
400	220	25×30	1.72	530	900
400	220	30×35	1.75	530	900
400	270	22×40	1.91	440	740
400	270	25×35	2	440	740
400	270	30×25	1.96	440	740
400	270	35×30	2.05	440	740
400	330	22×50	2	350	600
400	330	25×40	2	350	600
400	330	30×30	2.05	350	600
400	330	35×25	2.2	350	600

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	330	35×30	2.3	350	600
400	390	22×50	2.1	300	510
400	390	25×45	2.2	300	510
400	390	30×30	2.1	300	510
400	390	30×35	2.2	300	510
400	390	35×25	2.3	300	510
400	390	35×30	2.5	300	510
400	470	25×50	2.7	250	420
400	470	30×35	2.6	250	420
400	470	35×30	2.6	250	420
400	560	30×40	2.92	210	360
400	560	30×45	2.92	210	360
400	560	35×35	2.92	210	360
400	560	35×40	2.95	210	360
400	680	30×45	3.3	170	290
400	680	30×50	3.4	170	290
400	680	35×35	3.35	170	290
400	680	35×40	3.4	170	290
400	820	35×45	3.45	140	240
400	820	35×50	3.5	140	240
400	1000	35×50	3.94	120	200
400	1200	35×55	4.45	100	170
400	1200	35×80	5.6	100	170
400	1200	40×60	5.33	100	170
400	1200	45×50	5.2	100	170
400	1500	35×95	6.66	76	130
400	1500	40×75	6.32	76	130
400	1500	45×55	5.92	76	130
400	2200	45×80	7.9	53	90
400	2700	45×90	9.09	43	74
420	47	22×20	0.48	3320	5640
420	56	22×25	0.53	2790	4740
420	68	22×25	0.73	2290	3900
420	68	22×30	0.68	2290	3900
420	82	22×25	0.88	1900	3230
420	82	22×30	0.92	1900	3230
420	82	25×25	0.95	1900	3230
420	100	22×25	1.03	1560	2650
420	100	22×30	1.07	1560	2650
420	100	25×25	1.12	1560	2650
420	120	22×25	1.08	1300	2210
420	120	22×30	1.1	1300	2210
420	120	25×25	1.1	1300	2210
420	150	22×30	1.33	1040	1770
420	150	25×25	1.35	1040	1770
420	150	25×30	1.35	1040	1770
420	150	30×25	1.39	1040	1770
420	180	22×35	1.5	860	1470
420	180	25×30	1.5	860	1470
420	180	30×25	1.55	860	1470
420	220	22×40	1.78	710	1210
420	220	25×35	1.8	710	1210
420	220	30×25	1.83	710	1210
420	270	22×45	1.94	580	980
420	270	25×35	1.94	580	980
420	270	25×40	1.98	580	980
420	270	30×30	1.94	580	980
420	270	35×35	2	580	980
420	330	25×45	2.15	470	800
420	330	30×40	2.18	470	800

CapXon

LP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
420	330	35×35	2.21	470	800
420	330	35×40	2.25	470	800
420	390	25×45	2.35	400	680
420	390	30×40	2.35	400	680
420	390	35×35	2.43	400	680
420	390	35×40	2.52	400	680
420	470	30×40	2.6	330	560
420	470	30×45	2.78	330	560
420	470	35×35	2.78	330	560
420	470	35×40	2.8	330	560
420	560	30×45	2.85	280	470
420	560	35×40	2.95	280	470
420	560	35×45	2.97	280	470
420	560	40×40	2.95	280	470
420	680	35×45	3.59	230	390
420	680	35×50	3.62	230	390
420	680	40×45	3.75	230	390
420	820	35×50	4.15	190	320
420	820	40×50	4.23	190	320
420	820	45×40	4.32	190	320
420	1000	35×75	5.01	160	270
420	1000	40×60	4.91	160	270
420	1000	45×45	4.78	160	270
420	1200	35×85	5.53	130	220
420	1200	40×70	5.68	130	220
420	1200	45×55	5.48	130	220
420	1500	40×80	6.38	110	180
420	1500	45×65	6.25	110	180
420	1800	40×95	7.51	88	150
420	1800	45×70	7.21	88	150
420	2200	45×85	7.88	71	120
450	22	22×20	0.3	7090	12060
450	47	22×20	0.5	3320	5640
450	56	22×25	0.6	2790	4740
450	68	22×25	0.73	2290	3900
450	68	22×30	0.75	2290	3900
450	82	22×25	0.85	1900	3230
450	82	25×25	0.9	1900	3230
450	100	22×30	0.95	1560	2650
450	100	25×25	0.98	1560	2650
450	120	22×30	1.1	1300	2210
450	120	25×25	1.15	1300	2210
450	150	22×30	1.39	1040	1770
450	150	22×35	1.43	1040	1770
450	150	25×25	1.43	1040	1770
450	150	30×25	1.45	1040	1770
450	150	30×30	1.47	1040	1770
450	180	22×35	1.35	860	1470
450	180	25×30	1.38	860	1470
450	180	25×35	1.41	860	1470
450	180	30×25	1.38	860	1470
450	220	22×40	1.56	710	1210
450	220	25×35	1.61	710	1210
450	220	25×40	1.65	710	1210
450	220	30×25	1.61	710	1210
450	220	30×30	1.65	710	1210
450	220	35×25	1.65	710	1210
450	270	22×45	1.9	580	980
450	270	25×40	1.92	580	980
450	270	25×45	1.86	580	980

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	270	30×30	1.88	580	980
450	270	35×25	1.84	580	980
450	270	35×35	1.92	580	980
450	330	25×45	2.1	470	800
450	330	30×35	1.98	470	800
450	330	30×40	2.1	470	800
450	330	35×25	2	470	800
450	330	35×30	2.1	470	800
450	390	25×50	2.3	400	680
450	390	30×35	2.2	400	680
450	390	30×40	2.3	400	680
450	390	35×30	2.6	400	680
450	390	35×40	2.54	400	680
450	470	30×40	2.55	330	560
450	470	30×45	2.58	330	560
450	470	35×35	2.58	330	560
450	470	35×40	2.6	330	560
450	470	35×45	2.62	330	560
450	470	40×40	2.65	330	560
450	560	30×50	2.83	280	470
450	560	35×40	2.85	280	470
450	560	35×45	2.88	280	470
450	560	40×45	3.27	280	470
450	680	30×55	3.52	230	390
450	680	35×45	3.52	230	390
450	680	40×50	3.71	230	390
450	680	45×40	3.71	230	390
450	820	35×50	3.75	190	320
450	820	35×70	4.31	190	320
450	820	40×55	4.3	190	320
450	820	45×45	4.14	190	320
450	1000	35×80	5.3	160	270
450	1000	40×60	4.71	160	270
450	1000	40×65	4.89	160	270
450	1000	45×50	4.71	160	270
450	1200	35×95	5.85	130	220
450	1200	40×75	5.55	130	220
450	1200	45×60	5.55	130	220
450	1500	40×90	6.56	110	180
450	1500	45×70	6.27	110	180
450	1800	45×80	7.12	88	150
450	2200	45×95	8.28	71	120
500	56	22×25	0.65	2790	4740
500	68	22×30	0.75	2290	3900
500	68	25×25	0.75	2290	3900
500	68	25×30	0.78	2290	3900
500	82	22×35	0.88	1900	3230
500	82	25×30	0.9	1900	3230
500	82	30×30	0.92	1900	3230
500	100	22×40	0.96	1560	2650
500	100	25×30	0.98	1560	2650
500	100	30×30	1.05	1560	2650
500	120	22×45	1.1	1300	2210
500	120	25×40	1.13	1300	2210
500	120	30×30	1.16	1300	2210
500	150	22×50	1.22	1040	1770
500	150	25×45	1.27	1040	1770
500	150	30×30	1.24	1040	1770
500	180	25×50	1.42	860	1470
500	180	30×35	1.4	860	1470

CapXon

LP series

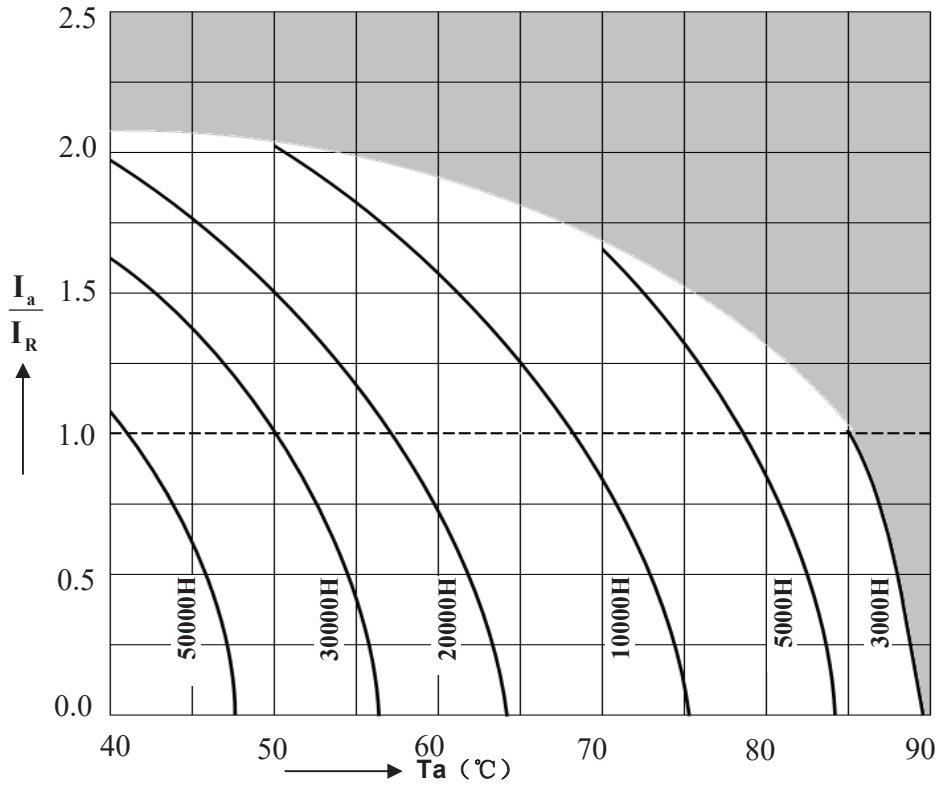
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	220	30×40	1.65	710	1210
500	220	35×40	1.68	710	1210
500	270	30×40	1.5	580	980
500	270	35×40	1.88	580	980
500	330	30×50	1.95	470	800
500	330	35×50	2.1	470	800
500	390	35×55	2.35	400	680
500	390	40×45	2.37	400	680
500	470	35×60	2.6	330	560
500	470	40×50	2.6	330	560
500	560	35×70	2.51	280	470
500	560	40×55	2.49	280	470
500	680	40×65	2.83	230	390
500	680	45×50	2.81	230	390
500	820	40×75	3.22	190	320
500	820	45×60	3.2	190	320
500	1000	40×85	3.66	160	270
500	1000	45×70	3.62	160	270
500	1200	45×80	4.15	130	220
500	1500	45×100	4.9	110	180
550	47	25×25	0.52	3320	5640
550	56	25×25	0.65	2790	4740
550	68	25×30	0.75	2290	3900
550	82	25×35	0.85	1900	3230
550	82	30×25	0.85	1900	3230
550	100	25×35	0.94	1560	2650
550	100	30×30	1.05	1560	2650
550	120	25×40	1.08	1300	2210
550	120	30×35	1.18	1300	2210
550	120	35×25	1.18	1300	2210
550	150	25×50	1.28	1040	1770
550	150	30×35	1.3	1040	1770
550	150	35×30	1.45	1040	1770
550	180	25×55	1.48	860	1470
550	180	30×40	1.48	860	1470
550	180	35×35	1.62	860	1470
550	220	30×50	1.85	710	1210
550	220	35×40	1.86	710	1210
550	270	30×55	2.15	580	980
550	270	35×45	2.21	580	980
550	330	35×50	2.2	470	800
550	390	35×55	2.82	400	680
600	47	25×25	0.62	3320	5640
600	56	25×30	0.71	2790	4740
600	68	25×35	0.77	2290	3900
600	68	30×25	0.78	2290	3900
600	82	25×35	0.87	1900	3230
600	82	30×30	0.92	1900	3230
600	100	25×40	1	1560	2650
600	100	30×35	1.1	1560	2650
600	100	35×25	1.1	1560	2650
600	120	25×50	1.2	1300	2210
600	120	30×35	1.18	1300	2210
600	120	35×30	1.3	1300	2210
600	150	25×55	1.36	1040	1770
600	150	30×45	1.47	1040	1770
600	150	35×35	1.52	1040	1770
600	180	30×50	1.67	860	1470
600	180	35×40	1.71	860	1470
600	220	30×55	1.95	710	1210

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
600	220	35×45	1.95	710	1210
600	270	35×50	2.25	580	980

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions $V_R \leqslant 100V$



LS Series Snap-in Type 85℃ Miniaturized

Features

- ◆ Directly mountable on printed circuit board, without holders.
- ◆ Aluminum case designed explosion-proof vent.
- ◆ RoHS Compliant

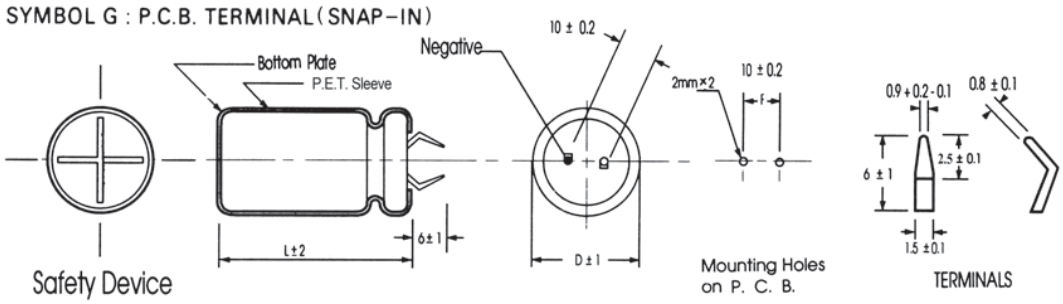
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +85℃
Rated Voltage Range	160 to 450 VDC
Capacitance Range	47 to 2700 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I ≦ 0.02CV After 5 minutes with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Less than the value under table (%) μF＼VDC: 160~250: 315~450 47~390: 15: 20 470~2700: 15: 20
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Working voltage (VDC): 160: 200~250: 400~450 Z -25℃／Z +20℃: 4: 4: 8
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	1K	10K	50K-100K
10＜CAP≦100	0.8	1	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.25	1.35	1.38
1000＜CAP	0.8	1	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Snap-in

Case Size

ϕ DxL(mm)

WV / Cap (μF) \ ϕ D	160								200							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
150									22x20	0.96						
180	22x20	1.12							22x20	1.00						
220	22x20	1.35							22x20	1.36						
270	22x20	1.40							22x25	1.50						
330	22x25	1.44							22x25	1.70	25x25	1.70				
390	22x25	1.66	25x20	1.66					22x25	1.80	25x25	1.80				
470	22x30	1.76	25x25	1.76	30x20	1.76			22x30	2.23	25x25	2.23	30x20	2.23		
560	22x30	2.03	25x25	2.03	30x25	2.03	35x25	3.13	22x35	2.40	25x30	2.40	30x25	2.40		
					30x20	1.87										
680	22x35	2.27	25x30	2.27	30x25	2.27	35x30	3.44	22x40	2.55	25x35	2.55	30x25	2.55	35x30	3.52
							35x25	3.20							35x25	3.29
820	22x40	2.36	25x35	2.36	30x30	2.36	35x30	3.96			25x35	3.00	30x30	3.00	35x30	3.80
					30x25	2.20	35x25	3.70	22x45	2.80					35x25	3.50
1000			25x40	3.13	30x30	3.13	35x30	4.47			25x45	3.52	30x35	3.52	35x35	4.40
	22x50	2.50	25x35	2.95											35x30	4.10
1200			25x45	3.44	30x35	3.44	35x35	4.65					30x40	3.80	35x40	5.00
							35x30	4.10							35x35	4.70
1500					30x40	3.96	35x40	4.76					30x45	4.40	35x45	5.40
							35x35	4.30							35x40	5.10
1800					30x45	4.47	35x45	4.60					30x55	5.15	35x50	5.15
2200					30x55	4.60	35x50	4.60							35x55	5.21

WV / Cap (μF) \ ϕ D	220								250							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
120									22x20	0.85						
150	22x20	0.71							22x20	0.95						
180	22x20	0.90							22x25	1.12	25x20	1.12				
220	22x25	1.04							22x25	1.25	25x20	1.20				
270	22x25	1.23	25x25	1.32					22x25	1.5	25x25	1.25				
330	22x30	1.47	25x25	1.47					22x30	1.7	25x25	1.50	30x20	1.70		
			25x20	1.35												
390	22x35	1.56	25x30	1.58					22x35	1.92	25x30	1.70	30x25	1.92		
	22x30	1.46	25x25	1.46												
470	22x35	1.75	25x30	1.75	30x25	1.75			22x40	2.2	25x30	1.92	30x25	2.20		
560	22x40	2.09	25x35	2.09	30x30	2.09	35x25	2.09			25x35	2.20	30x30	2.52	35x25	2.52
			25x30	1.92	30x25	1.92										
680	22x45	2.18	25x40	2.18	30x30	2.18	35x25	2.18			25x40	2.52	30x35	2.80	35x25	2.80
			25x35	2.05												
820			25x45	2.34	30x35	2.34	35x30	2.34			25x45	2.80	30x40	3.15	35x30	3.15
	22x50	2.21	25x40	2.21												
1000			25x50	3.04	30x40	3.04	35x30	3.04					30x45	3.60	35x35	3.60
1200					30x50	3.51	35x35	3.51					30x55	3.9	35x40	3.90
			25x55	3.30	30x45	3.30										
1500					30x55	3.65	35x40	3.65							35x45	4.50
1800							35x50	3.80							35x60	4.60
2200							35x55	3.99							35x70	4.72

Ripple Current (A, rms) at 85℃ 120Hz

ϕ DxL(mm)

WV / Cap (μF) / ϕ D	350								400							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
47									22x20	0.42						
68									22x20	0.51						
82									22x25	0.83						
100	22x25	0.76							22x25	0.95	25x20	0.95				
120	22x25	0.89	25x25	0.95					22x25	1.07	25x20	1.07				
150	22x30	0.99	25x25	0.99	30x20	0.99			22x30	1.26	25x25	1.26	30x20	1.26		
180	22x35	1.15	25x30	1.15	30x25	1.15			22x35	1.46	25x30	1.46	30x25	1.46		
									22x30	1.35	25x25	1.35				
220	22x40	1.40	25x35	1.40	30x25	1.40	35x20	1.40	22x40	1.75	25x35	1.75	30x30	1.75		
											25x30	1.62	30x25	1.62		
270			25x40	1.63	30x30	1.63	35x25	1.63			25x40	1.85	30x30	1.85	35x25	1.85
									22x45	1.73	25x35	1.73				
330			25x45	1.88	30x35	1.88	35x25	1.88			25x45	2.10	30x35	2.10	35x30	2.10
									22x50	1.98	25x40	1.98	30x30	1.98	35x25	1.98
390					30x35	2.12	35x30	2.12					30x40	2.35	35x35	2.35
									22x55	2.20	25x50	2.20	30x35	2.20	35x30	2.20
470					30x40	2.41	35x35	2.41							35x40	2.60
											25x55	2.45	30x40	2.45	35x35	2.45
560							35x40	2.80							35x45	2.95
													30x45	2.90	35x40	2.90
680							35x45	3.20							35x45	3.15
													30x55	3.05		

WV / Cap (μF) / ϕ D	420								450									
	22		25		30		35		22		25		30		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
47	22x20	0.38							22x20	0.36								
68	22x25	0.49							22x25	0.60								
82	22x30	0.85	25x25	0.85					22x25	0.89	25x20	0.89						
	22x25	0.79	25x20	0.79														
100	22x35	1.03	25x25	1.03					22x30	1.03	25x25	1.03						
	22x30	0.96																
120	22x35	1.12	25x30	1.12					22x35	1.10	25x30	1.10						
	22x30	1.04	25x25	1.04														
150	22x40	1.32	25x35	1.32	30x30	1.32			22x40	1.30	25x35	1.30	30x25	1.30				
	22x35	1.34	25x30	1.34	30x25	1.34			22x35	1.13	25x30	1.13	30x20	1.13				
180			25x40	1.48	30x30	1.48			22x45	1.45	25x40	1.45	30x30	1.45				
	22x35	1.4	25x35	1.40	30x25	1.40			22x40	1.36	25x35	1.36	30x25	1.36				
220			25x45	1.75	30x35	1.75	35x30	1.75	22x50	1.65	25x45	1.65	30x35	1.65	35x25	1.65		
	22x40	1.65	25x40	1.65	30x30	1.65	35x25	1.65			25x40	1.55	30x30	1.55				
270			25x50	1.98	30x40	1.98	35x35	1.98			25x50	1.90	30x40	1.90	35x30	1.90		
	22x45	1.88	25x45	1.88	30x35	1.88	35x30	1.88			25x45	1.80	30x35	1.80				
330							35x40	2.27			25x55	2.20	30x40	2.20	35x35	2.20		
			25x50	2.15	30x40	2.15	35x35	2.15							35x30	2.10		
390							35x45	2.52							35x40	2.40	40x30	2.40
			25x55	2.40	30x45	2.40	35x40	2.40							35x35	2.30		
470					30x50	2.50	35x45	2.50							35x45	2.75	40x35	2.75
															35x40	2.60		
560					30x55	2.98	35x50	2.98							35x50	2.90	40x40	2.90
															35x45	2.78		
680							35x55	3.20							35x55	3.0	40x45	3.0
820															35x60	3.2	40x55	3.2

Ripple Current (A, rms) at 85℃ 120Hz

CapXon

LU series

LU Series 85℃ 3000H

Features

Standard capacitors

Applications

- Switch-mode power supplies in industrial and entertainmentelectronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Specifications

Item	Performance Characteristics											
Operating Temperature Range	-40 to +85℃						-25 to +85℃					
Rated voltage V_R	10 to 450 V DC						500 to 600 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	47 to 82000 μF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	I≤ $3\sqrt{CV}$ μA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	μF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	-	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											
Useful life 85 °C; V_R,$I_{AC,R}$ 85 °C; V_R,$I_{AC,R}$	V_R≤100V: >4000 h VR>100V: >7000 h	Requirements: V_R≤100V DC/C ≤±30% of initial value ESR ≤3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage:≤ 1 %								V_R>100V DC/C ≤ ±20% of initial value ESR ≤ 2 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 1 %		
Voltage Endurance test 85 °C; V_R	3000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %								V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %		
Shelf Life 85 °C	1000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %								V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit Outlier Percenttage: 0 %		
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.											
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz											
	V_R(V)	6.3	10	16	25	35~100		160~250		315~450		500~600
	$Z_{-25℃}$ / $Z_{20℃}$	5	5	5	4	4		4		8		8
	$Z_{-40℃}$ / $Z_{20℃}$	15	15	15	15	12		7		10		-
Sectional specification	IEC 60384-4 and JIS-C-5101											

Multiplier for Ripple Current vs. Frequency

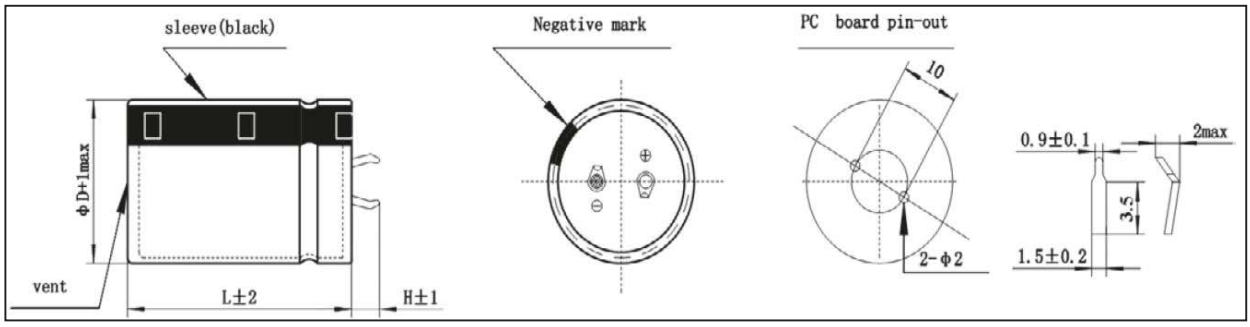
V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

CapXon

LU series

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

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LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	10000	20×25	2.23	36	46
10	12000	22×25	2.9	34	44
10	15000	22×30	3.2	27	35
10	15000	25×25	3.21	27	35
10	18000	22×35	3.22	23	29
10	18000	25×30	3.65	23	29
10	22000	22×40	3.79	19	24
10	22000	25×30	3.75	19	24
10	22000	30×25	4.1	19	24
10	27000	25×35	4.04	19	25
10	27000	30×30	4.06	19	25
10	33000	25×40	4.6	15	20
10	33000	30×30	4.8	15	20
10	39000	25×45	5.29	13	17
10	39000	35×30	5.3	13	17
10	47000	25×50	5.8	11	14
10	47000	30×40	5.82	11	14
10	47000	35×30	6	11	14
10	56000	30×45	6.7	9	12
10	56000	35×35	6.8	9	12
10	68000	30×50	7.5	8	10
10	68000	35×40	7.55	8	10
10	82000	35×45	8.7	6	8
16	8200	20×25	2.57	44	57
16	10000	22×25	2.86	36	46
16	12000	22×25	2.89	34	44
16	15000	22×30	3.45	27	35
16	18000	25×25	3.47	23	29
16	22000	25×30	3.94	19	24
16	27000	30×30	4.99	15	20
16	33000	30×35	5.49	12	16
16	33000	35×25	5.21	12	16
16	39000	30×40	6.11	10	14
16	39000	35×30	6.13	10	14
16	47000	30×45	6.95	9	11
16	56000	30×50	7.63	7	10
16	56000	35×40	7.69	7	10
16	68000	35×45	8.45	6	8
16	82000	35×50	9.15	5	7
25	5600	20×25	2.33	55	71
25	5600	22×25	2.4	55	71
25	6800	22×25	2.62	45	59
25	6800	25×25	2.68	45	59
25	8200	22×30	2.91	37	49
25	8200	25×25	2.95	37	49
25	10000	22×35	3.31	31	40
25	10000	25×25	3.18	31	40
25	12000	22×40	3.77	30	39
25	12000	25×30	3.65	30	39
25	15000	22×45	4.08	24	31
25	15000	25×35	4.1	24	31
25	18000	25×40	4.68	20	26
25	18000	30×30	4.71	20	26
25	22000	25×45	4.72	16	21
25	22000	30×35	4.75	16	21
25	27000	25×50	6.02	13	17
25	27000	30×40	6.1	13	17
25	27000	35×35	6.12	13	17
25	33000	30×45	6.75	11	14
25	33000	35×40	6.8	11	14

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
25	39000	30×50	7.4	9	12
25	39000	35×45	7.61	9	12
25	47000	35×50	8.3	8	10
35	3300	20×25	2.14	77	100
35	3900	20×30	2.28	65	85
35	3900	22×25	2.22	65	85
35	4700	20×35	2.46	54	71
35	4700	22×25	2.47	54	71
35	5600	22×30	2.8	46	59
35	5600	25×25	2.82	46	59
35	6800	22×35	2.89	38	49
35	6800	25×30	2.92	38	49
35	6800	30×25	3.09	38	49
35	8200	22×40	3.47	31	40
35	8200	25×35	3.5	31	40
35	8200	30×25	3.51	31	40
35	10000	22×45	3.6	26	33
35	10000	25×40	3.65	26	33
35	10000	30×30	3.67	26	33
35	10000	35×25	3.71	26	33
35	12000	25×40	4.51	26	33
35	12000	30×35	4.55	26	33
35	12000	35×25	4.52	26	33
35	15000	25×45	4.55	20	27
35	15000	30×40	4.8	20	27
35	15000	35×30	4.82	20	27
35	18000	25×50	4.84	17	22
35	18000	30×40	4.87	17	22
35	18000	35×35	5.7	17	22
35	22000	30×45	6.38	14	18
35	22000	35×40	6.4	14	18
35	27000	35×45	6.9	13	17
35	33000	35×50	7.49	11	14
63	1500	20×25	1.7	140	180
63	1500	22×25	1.75	140	180
63	1800	20×30	2.05	120	150
63	1800	22×25	2.04	120	150
63	2200	20×35	2.4	92	120
63	2200	22×30	2.41	92	120
63	2200	25×25	2.43	92	120
63	2700	20×40	2.53	76	98
63	2700	22×35	2.54	76	98
63	2700	25×30	2.58	76	98
63	3300	22×35	2.72	62	80
63	3300	25×30	2.74	62	80
63	3300	30×25	2.84	62	80
63	3900	22×40	2.95	52	68
63	3900	25×35	3.16	52	68
63	3900	30×30	3.17	52	68
63	3900	35×25	3.19	52	68
63	4700	22×50	3.69	43	56
63	4700	25×40	3.59	43	56
63	4700	30×30	3.7	43	56
63	4700	35×25	3.71	43	56
63	5600	25×45	3.81	36	47
63	5600	30×35	3.85	36	47
63	5600	35×30	3.91	36	47
63	6800	25×50	4.53	30	39
63	6800	30×40	4.61	30	39
63	6800	35×30	4.95	30	39

CapXon

LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	8200	30×45	5.15	25	32
63	8200	35×35	5.18	25	32
63	10000	30×50	5.8	20	27
63	10000	35×40	5.83	20	27
63	12000	35×45	6.47	21	28
63	15000	35×50	6.85	17	22
80	1000	20×25	1.57	150	200
80	1200	20×30	1.8	130	170
80	1200	22×25	1.81	130	170
80	1500	20×30	2.1	100	130
80	1500	22×30	2.12	100	130
80	1500	25×25	2.16	100	130
80	1800	20×35	2.3	85	110
80	1800	22×30	2.31	85	110
80	1800	25×25	2.35	85	110
80	2200	20×40	2.53	70	90
80	2200	22×35	2.56	70	90
80	2200	25×30	2.58	70	90
80	2200	30×25	2.62	70	90
80	2700	22×40	2.93	57	74
80	2700	25×35	2.95	57	74
80	2700	30×25	2.99	57	74
80	2700	35×25	3.02	57	74
80	3300	22×45	3.25	46	60
80	3300	25×40	3.29	46	60
80	3300	30×30	3.31	46	60
80	3300	35×25	3.35	46	60
80	3900	22×50	3.62	39	51
80	3900	25×45	3.71	39	51
80	3900	30×35	3.78	39	51
80	3900	35×30	3.91	39	51
80	4700	25×50	4.28	33	42
80	4700	30×40	4.31	33	42
80	4700	35×30	4.45	33	42
80	5600	30×45	4.7	27	36
80	5600	35×35	4.75	27	36
80	6800	30×50	5.27	23	29
80	6800	35×40	5.35	23	29
80	8200	35×45	5.9	19	24
80	10000	35×50	7.05	15	20
100	680	20×25	1.68	220	290
100	680	22×25	1.71	220	290
100	820	20×30	1.91	180	240
100	820	22×25	1.9	180	240
100	1000	20×30	2.02	150	200
100	1000	22×30	2.04	150	200
100	1000	25×25	2.1	150	200
100	1200	20×35	2.12	130	170
100	1200	22×30	2.15	130	170
100	1200	25×25	2.18	130	170
100	1500	20×40	2.45	100	130
100	1500	22×35	2.47	100	130
100	1500	25×30	2.5	100	130
100	1500	30×25	2.56	100	130
100	1800	22×40	2.77	85	110
100	1800	25×35	2.81	85	110
100	1800	30×25	2.85	85	110
100	1800	35×25	2.89	85	110
100	2200	22×45	3.15	70	90
100	2200	25×40	3.21	70	90

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	2200	30×30	3.25	70	90
100	2200	35×25	3.28	70	90
100	2700	25×45	3.66	57	74
100	2700	30×35	3.7	57	74
100	2700	35×30	3.77	57	74
100	3300	25×50	4.15	46	60
100	3300	30×40	4.18	46	60
100	3300	35×35	4.21	46	60
100	3900	30×45	4.67	39	51
100	3900	35×35	4.69	39	51
100	4700	30×50	5.26	33	42
100	4700	35×40	5.31	33	42
100	5600	35×45	5.89	27	36
100	6800	35×50	6.01	23	29
160	220	20×25	1.11	510	900
160	270	20×25	1.12	420	740
160	270	22×25	1.27	420	740
160	330	20×30	1.28	340	600
160	330	22×25	1.55	340	600
160	390	20×30	1.63	290	510
160	390	22×25	1.65	290	510
160	390	25×20	1.67	290	510
160	470	22×30	1.9	240	420
160	470	25×25	1.92	240	420
160	560	22×30	2.15	210	360
160	560	25×25	2.18	210	360
160	560	30×20	2.21	210	360
160	680	22×35	2.35	170	290
160	680	25×30	2.38	170	290
160	680	30×25	2.42	170	290
160	680	35×20	2.51	170	290
160	820	22×40	2.68	140	240
160	820	25×30	2.71	140	240
160	820	30×25	2.76	140	240
160	820	35×20	2.79	140	240
160	1000	22×45	3.02	110	200
160	1000	25×35	3.03	110	200
160	1000	30×30	3.05	110	200
160	1000	35×25	3.13	110	200
160	1200	22×45	3.25	97	170
160	1200	25×40	3.43	97	170
160	1200	30×30	3.45	97	170
160	1200	35×25	3.48	97	170
160	1500	25×50	3.96	74	130
160	1500	30×35	4.01	74	130
160	1500	35×30	4.03	74	130
160	1800	25×50	4.2	63	110
160	1800	30×40	4.31	63	110
160	1800	35×35	4.38	63	110
160	2200	30×45	4.85	52	90
160	2200	35×40	4.9	52	90
160	2700	30×50	5.45	42	74
160	2700	35×45	5.57	42	74
160	3300	35×50	6.21	34	60
160	3300	40×50	6.34	34	60
160	3900	35×80	7.84	29	51
160	3900	40×60	7.45	29	51
160	4700	40×80	8.79	24	42
180	220	22×20	1.18	510	900
180	270	20×25	1.29	420	740

CapXon

LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
180	330	20×30	1.77	340	600
180	330	22×25	1.79	340	600
180	330	22×25	1.8	340	600
180	330	25×20	1.81	340	600
180	390	20×30	1.84	290	510
180	470	20×30	2.08	240	420
180	470	22×25	2.08	240	420
180	470	30×20	1.88	240	420
180	560	20×35	2.25	210	360
180	560	22×30	2.26	210	360
180	560	25×25	2.27	210	360
180	680	20×40	2.5	170	290
180	680	22×35	2.51	170	290
180	680	25×30	2.53	170	290
180	680	30×25	2.55	170	290
180	680	35×20	2.57	170	290
180	820	20×45	2.75	140	240
180	820	22×40	2.86	140	240
180	820	25×35	2.87	140	240
180	820	30×25	2.89	140	240
180	1000	22×50	3.1	110	200
180	1000	25×40	3.06	110	200
180	1000	30×30	3.11	110	200
180	1200	22×50	3.31	97	170
180	1200	25×45	3.65	97	170
180	1200	30×35	3.67	97	170
180	1200	35×30	3.71	97	170
180	1500	25×50	3.83	74	130
180	1500	30×40	4.1	74	130
180	1500	35×35	4.21	74	130
180	1800	30×45	4.55	63	110
180	1800	35×35	4.58	63	110
180	2200	30×50	4.92	52	90
180	2200	35×40	4.96	52	90
180	2700	35×50	5.3	42	74
200	120	22×20	1.05	950	1660
200	220	22×25	1.25	510	900
200	220	22×20	1.19	510	900
200	270	22×25	1.39	420	740
200	270	25×20	1.4	420	740
200	330	22×25	1.52	340	600
200	330	25×20	1.56	340	600
200	390	22×30	1.73	290	510
200	390	25×25	1.74	290	510
200	470	22×30	1.97	240	420
200	470	25×25	1.99	240	420
200	560	22×35	2.45	210	360
200	560	25×30	2.48	210	360
200	560	30×25	2.51	210	360
200	680	22×40	2.7	170	290
200	680	25×30	2.68	170	290
200	680	30×25	2.72	170	290
200	820	22×45	2.94	140	240
200	820	25×35	2.93	140	240
200	820	30×30	2.96	140	240
200	1000	22×50	3.28	110	200
200	1000	25×40	3.28	110	200
200	1000	30×35	3.29	110	200
200	1000	35×30	3.3	110	200
200	1200	30×35	3.61	97	170

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	1200	35×30	3.63	97	170
200	1500	30×45	4.13	74	130
200	1500	35×35	4.14	74	130
200	1800	30×50	4.6	63	110
200	1800	35×40	4.61	63	110
200	2200	35×45	4.98	52	90
200	2700	35×50	5.46	42	74
200	3300	35×60	6.3	34	60
200	3900	40×60	7.4	29	51
200	4700	40×70	6.78	24	42
200	5600	35×100	7.37	20	36
200	6800	40×100	8.66	17	29
220	180	22×20	1.07	630	1110
220	270	25×20	1.35	420	740
220	330	22×30	1.7	340	600
220	330	25×25	1.71	340	600
220	390	22×30	1.89	290	510
220	390	25×25	1.91	290	510
220	470	22×35	2.08	240	420
220	470	25×30	2.1	240	420
220	470	30×25	2.13	240	420
220	560	22×40	2.33	210	360
220	560	25×35	2.39	210	360
220	560	30×25	2.35	210	360
220	680	22×45	2.68	170	290
220	680	25×35	2.68	170	290
220	680	30×30	2.69	170	290
220	820	25×45	3.01	140	240
220	820	30×35	3.02	140	240
220	820	35×30	3.03	140	240
220	1000	25×50	3.43	110	200
220	1000	30×35	3.42	110	200
220	1200	30×40	3.88	97	170
220	1200	35×35	3.89	97	170
220	1500	30×50	4.44	74	130
220	1500	35×40	4.45	74	130
220	1800	35×45	4.53	63	110
220	2200	35×50	4.98	52	90
250	100	22×25	0.69	1140	1990
250	150	22×20	0.98	760	1330
250	180	22×20	1.07	630	1110
250	220	22×25	1.26	510	900
250	220	25×20	1.27	510	900
250	270	22×25	1.51	420	740
250	330	22×30	1.75	340	600
250	330	25×25	1.76	340	600
250	390	22×35	1.91	290	510
250	390	25×30	1.92	290	510
250	390	30×25	1.93	290	510
250	470	22×35	2.15	240	420
250	470	25×35	2.16	240	420
250	470	30×25	2.16	240	420
250	560	22×40	2.48	210	360
250	560	25×35	2.49	210	360
250	560	30×25	2.49	210	360
250	680	22×50	2.71	170	290
250	680	25×40	2.71	170	290
250	680	30×30	2.71	170	290
250	820	25×45	3.01	140	240
250	820	30×35	3.02	140	240

CapXon

LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	820	35×30	3.03	140	240
250	1000	30×40	3.56	110	200
250	1000	35×35	3.57	110	200
250	1200	30×45	3.99	97	170
250	1200	35×35	4.01	97	170
250	1500	35×40	4.34	74	130
250	1800	35×50	4.56	63	110
250	2200	35×50	5.1	52	90
250	2700	40×80	6.31	42	74
250	3300	40×80	7.01	34	60
250	3900	35×100	7.48	29	51
250	4700	40×100	8.89	24	42
315	100	22×20	0.8	1140	1990
315	120	25×20	0.91	950	1660
315	150	22×25	1.07	760	1330
315	150	25×20	1.08	760	1330
315	180	22×30	1.38	630	1110
315	180	25×25	1.39	630	1110
315	220	22×30	1.47	510	900
315	220	25×25	1.47	510	900
315	220	30×20	1.48	510	900
315	270	22×35	1.7	420	740
315	270	25×30	1.71	420	740
315	270	30×25	1.72	420	740
315	270	35×20	1.73	420	740
315	330	22×40	1.99	340	600
315	330	25×35	2	340	600
315	330	30×25	1.99	340	600
315	390	22×45	2.15	290	510
315	390	25×40	2.16	290	510
315	390	30×30	2.16	290	510
315	390	35×25	2.17	290	510
315	470	25×45	2.46	240	420
315	470	30×35	2.47	240	420
315	470	35×30	2.48	240	420
315	560	25×50	2.71	210	360
315	560	30×35	2.7	210	360
315	560	35×30	2.72	210	360
315	680	30×45	3.06	170	290
315	680	35×35	3.06	170	290
315	820	30×50	3.45	140	240
315	820	35×40	3.46	140	240
315	1000	35×45	3.6	110	200
350	82	22×20	0.73	1390	2430
350	100	22×25	0.81	1140	1990
350	120	22×25	1.05	950	1660
350	120	25×20	1.07	950	1660
350	150	22×30	1.24	760	1330
350	150	25×25	1.25	760	1330
350	180	22×30	1.37	630	1110
350	180	25×25	1.38	630	1110
350	180	30×20	1.39	630	1110
350	220	22×35	1.54	510	900
350	220	25×30	1.55	510	900
350	220	30×25	1.56	510	900
350	220	35×20	1.57	510	900
350	270	22×40	1.8	420	740
350	270	25×35	1.81	420	740
350	270	30×25	1.81	420	740
350	330	22×45	2.03	340	600

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	330	25×35	2.03	340	600
350	330	30×30	2.04	340	600
350	330	35×25	2.05	340	600
350	390	25×40	2.24	290	510
350	390	30×35	2.25	290	510
350	390	35×30	2.26	290	510
350	470	25×50	2.57	240	420
350	470	30×35	2.56	240	420
350	470	35×30	2.56	240	420
350	560	30×40	2.76	210	360
350	560	35×35	2.77	210	360
350	680	30×50	3.21	170	290
350	680	35×40	3.22	170	290
350	820	35×45	3.52	140	240
350	1000	35×50	3.66	110	200
350	1200	40×65	5.71	97	170
350	1500	45×60	6.48	74	130
350	1800	45×70	7.4	63	110
350	2200	45×80	8.08	52	90
350	2700	45×100	9.49	42	74
400	68	20×25	0.65	1670	2930
400	68	22×20	0.65	1670	2930
400	82	22×25	0.85	1390	2430
400	82	25×20	0.86	1390	2430
400	100	22×25	0.99	1140	1990
400	100	25×20	1	1140	1990
400	120	22×25	1.1	950	1660
400	120	25×25	1.14	950	1660
400	150	22×30	1.25	760	1330
400	150	22×35	1.38	760	1330
400	150	25×25	1.3	760	1330
400	150	25×30	1.4	760	1330
400	150	30×25	1.42	760	1330
400	180	22×30	1.5	630	1110
400	180	22×35	1.55	630	1110
400	180	25×25	1.52	630	1110
400	180	25×30	1.58	630	1110
400	180	30×25	1.6	630	1110
400	180	35×20	1.63	630	1110
400	220	22×45	1.62	510	900
400	220	22×30	1.54	510	900
400	220	25×30	1.6	510	900
400	220	25×35	1.64	510	900
400	220	25×25	1.56	510	900
400	220	30×30	1.66	510	900
400	220	30×25	1.62	510	900
400	270	22×45	1.7	420	740
400	270	22×35	1.6	420	740
400	270	25×40	1.82	420	740
400	270	25×30	1.65	420	740
400	270	30×30	1.82	420	740
400	270	30×25	1.68	420	740
400	330	22×50	2.27	340	600
400	330	22×40	1.98	340	600
400	330	25×45	2.29	340	600
400	330	25×35	2.05	340	600
400	330	30×35	2.31	340	600
400	330	30×25	2.06	340	600
400	330	35×30	2.4	340	600
400	330	35×25	2.3	340	600

CapXon

LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	390	22×50	2.29	290	510
400	390	25×45	2.36	290	510
400	390	30×40	2.46	290	510
400	390	30×30	2.3	290	510
400	390	35×35	2.5	290	510
400	390	35×25	2.38	290	510
400	470	25×50	2.45	240	420
400	470	30×45	2.66	240	420
400	470	30×35	2.42	240	420
400	470	35×35	2.71	240	420
400	470	35×25	2.4	240	420
400	470	35×30	2.6	240	420
400	560	25×55	3.08	210	360
400	560	30×50	3.19	210	360
400	560	35×40	3.44	210	360
400	560	35×30	3.03	210	360
400	680	25×60	3.28	170	290
400	680	30×55	3.28	170	290
400	680	30×45	3.25	170	290
400	680	35×50	3.45	170	290
400	820	30×60	3.42	140	240
400	820	35×50	3.5	140	240
400	820	35×45	3.42	140	240
400	1000	35×55	3.85	110	200
400	1000	35×50	3.6	110	200
400	1000	40×65	5.15	110	200
400	1200	35×65	4.68	97	170
400	1200	40×60	4.71	97	170
400	1500	35×80	5.55	74	130
400	1500	40×70	4.61	74	130
400	1800	40×80	6.6	63	110
400	2200	45×95	8.7	52	90.42902
420	47	22×20	0.54	3220	5640
420	56	22×20	0.6	2710	4740
420	68	25×20	0.68	2230	3900
420	82	20×25	0.83	1850	3230
420	82	22×25	0.85	1850	3230
420	82	25×20	0.85	1850	3230
420	100	22×30	0.98	1510	2650
420	100	22×25	0.97	1510	2650
420	100	25×25	0.98	1510	2650
420	120	20×30	1.05	1260	2210
420	120	22×30	1.07	1260	2210
420	120	22×25	1.02	1260	2210
420	120	25×25	1.08	1260	2210
420	120	30×20	1.1	1260	2210
420	150	22×35	1.21	1010	1770
420	150	22×25	1.11	1010	1770
420	150	25×30	1.26	1010	1770
420	150	35×20	1.32	1010	1770
420	180	22×40	1.33	840	1470
420	180	22×30	1.32	840	1470
420	180	25×35	1.46	840	1470
420	180	25×25	1.33	840	1470
420	180	30×25	1.48	840	1470
420	180	35×20	1.48	840	1470
420	220	22×45	1.6	690	1210
420	220	22×35	1.42	690	1210
420	220	25×35	1.58	690	1210
420	220	25×30	1.47	690	1210

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
420	220	30×30	1.65	690	1210
420	220	30×25	1.59	690	1210
420	220	35×25	1.6	690	1210
420	270	22×45	1.75	560	980
420	270	25×40	1.98	560	980
420	270	25×30	1.68	560	980
420	270	30×35	1.92	560	980
420	270	30×25	1.7	560	980
420	270	35×30	1.94	560	980
420	330	25×50	2.28	460	800
420	330	25×40	1.95	460	800
420	330	30×35	2.2	460	800
420	330	30×30	1.98	460	800
420	330	35×35	2.37	460	800
420	330	35×25	2.17	460	800
420	390	25×50	2.3	390	680
420	390	30×40	2.32	390	680
420	390	30×30	2.1	390	680
420	390	35×35	2.68	390	680
420	390	35×25	2.2	390	680
420	470	30×45	2.72	320	560
420	470	30×35	2.47	320	560
420	470	35×40	2.75	320	560
420	470	35×30	2.63	320	560
420	560	25×55	2.82	270	470
420	560	30×50	2.85	270	470
420	560	30×40	2.7	270	470
420	560	35×45	2.95	270	470
420	560	35×35	2.7	270	470
420	680	30×50	2.9	220	390
420	680	35×50	3.2	220	390
420	680	35×40	3.15	220	390
420	820	30×55	3.4	180	320
420	820	35×45	3.45	180	320
420	820	35×55	3.72	180	320
420	820	40×45	3.72	180	320
420	1000	35×65	4.5	150	270
420	1000	35×50	3.78	150	270
420	1000	40×50	4.3	150	270
420	1200	35×70	4.95	130	220
420	1200	35×60	3.9	130	220
420	1200	40×55	4.6	130	220
420	1500	40×70	5.98	100	180
420	1800	40×80	6.9	86	150
450	47	22×20	0.55	3220	5640
450	56	20×25	0.61	2710	4740
450	56	22×20	0.59	2710	4740
450	68	20×25	0.62	2230	3900
450	68	22×25	0.71	2230	3900
450	68	25×20	0.72	2230	3900
450	82	20×30	0.87	1850	3230
450	82	22×25	0.86	1850	3230
450	82	25×20	0.88	1850	3230
450	100	20×35	0.91	1510	2650
450	100	22×30	0.95	1510	2650
450	100	25×25	0.97	1510	2650
450	120	22×30	1.05	1260	2210
450	120	25×25	1.07	1260	2210
450	150	22×35	1.29	1010	1770
450	150	25×30	1.31	1010	1770

CapXon

LU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	150	30×25	1.34	1010	1770
450	150	35×20	1.36	1010	1770
450	180	22×35	1.38	840	1470
450	180	25×30	1.4	840	1470
450	180	30×25	1.44	840	1470
450	180	30×30	1.45	840	1470
450	180	35×25	1.47	840	1470
450	220	22×40	1.87	690	1210
450	220	25×35	1.89	690	1210
450	220	30×30	1.91	690	1210
450	220	35×25	1.92	690	1210
450	270	25×35	2.12	560	980
450	270	30×30	2.15	560	980
450	270	35×25	2.19	560	980
450	330	25×40	2.41	460	800
450	330	30×35	2.48	460	800
450	330	35×30	2.53	460	800
450	330	35×35	2.63	460	800
450	390	25×45	2.67	390	680
450	390	30×35	2.7	390	680
450	390	35×30	2.75	390	680
450	470	25×50	2.78	320	560
450	470	30×40	2.82	320	560
450	470	30×45	2.88	320	560
450	470	35×35	2.93	320	560
450	560	30×45	3.13	270	470
450	560	30×50	3.17	270	470
450	560	35×40	3.21	270	470
450	560	40×50	3.46	270	470
450	560	45×40	3.48	270	470
450	680	30×50	3.46	220	390
450	680	35×40	3.51	220	390
450	680	35×45	3.65	220	390
450	680	40×60	3.98	220	390
450	680	45×45	4.01	220	390
450	820	30×60	3.97	180	320
450	820	35×45	3.9	180	320
450	820	35×50	4.01	180	320
450	820	45×55	4.47	180	320
450	1000	35×55	4.01	150	270
450	1000	35×60	4.11	150	270
450	1000	40×55	4.6	150	270
450	1000	45×60	5.08	150	270
450	1200	40×65	5.42	130	220
450	1200	45×60	5.79	130	220
450	1500	45×85	6.84	100	180
450	1800	45×100	7.86	86	150
450	2200	45×90	8.48	68.57143	120
500	47	22×20	0.56	3220	5640
500	56	20×25	0.62	2710	4740
500	56	22×25	0.63	2710	4740
500	56	25×20	0.64	2710	4740
500	68	20×30	0.65	2230	3900
500	68	22×25	0.63	2230	3900
500	68	22×30	0.75	2230	3900
500	68	25×20	0.68	2230	3900
500	68	25×25	0.78	2230	3900
500	82	20×30	0.85	1850	3230
500	82	22×30	0.92	1850	3230
500	82	25×25	0.95	1850	3230
500	100	22×35	1.02	1510	2650

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	100	25×30	1.06	1510	2650
500	100	30×20	1.04	1510	2650
500	100	30×25	1.07	1510	2650
500	120	22×40	1.12	1260	2210
500	120	25×30	1.08	1260	2210
500	120	25×35	1.23	1260	2210
500	120	30×30	1.25	1260	2210
500	120	35×25	1.28	1260	2210
500	150	22×45	1.26	1010	1770
500	150	25×35	1.25	1010	1770
500	150	25×40	1.28	1010	1770
500	150	30×30	1.34	1010	1770
500	150	30×35	1.38	1010	1770
500	150	35×25	1.36	1010	1770
500	180	22×50	1.39	840	1470
500	180	25×40	1.3	840	1470
500	180	25×45	1.45	840	1470
500	180	30×30	1.28	840	1470
500	180	30×35	1.47	840	1470
500	180	35×20	1.21	840	1470
500	180	35×25	1.46	840	1470
500	220	25×50	1.52	690	1210
500	220	30×35	1.51	690	1210
500	220	30×40	1.6	690	1210
500	220	35×30	1.62	690	1210
500	270	30×40	1.77	560	980
500	270	30×45	1.98	560	980
500	270	35×35	2.02	560	980
500	330	30×50	2.25	460	800
500	330	35×35	2.03	460	800
500	330	35×40	2.27	460	800
500	390	35×45	2.45	390	680
500	390	35×45	2.47	390	680
500	470	35×50	2.76	320	560
500	560	35×60	2.9	270	470
500	560	40×50	3.31	270	470
500	680	35×70	3.82	220	390
500	680	40×55	3.79	220	390
500	820	35×80	4.56	180	320
500	820	40×60	4.33	180	320
500	1000	35×90	5.31	150	270
500	1000	40×80	5.42	150	270
500	1500	40×100	6.56	100	180
600	150	30×45	0.95	1010	1770
600	180	30×50	1.1	840	1470
600	220	30×60	1.22	690	1210
600	270	30×70	1.25	560	980
600	330	30×80	1.36	460	800
600	330	40×50	1.35	460	800
600	390	40×60	1.48	390	680
600	470	40×70	1.67	320	560
600	470	45×55	1.65	320	560
600	560	40×80	1.78	270	470
600	560	45×60	1.75	270	470
600	680	40×90	1.85	220	390
600	680	45×70	1.83	220	390
600	820	45×85	2.01	180	320
600	820	50×70	2	180	320
600	1000	45×100	2.28	150	270
600	1000	50×80	2.25	150	270
600	1200	50×95	2.45	130	220

CapXon

LD series

LD Series 85℃ 5000H

Features

Standard capacitors

Applications

- Switch-mode power supplies in industrial and entertainmentelectronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Specifications

Item	Performance Characteristics											
Operating Temperature Range	-40 to +85℃						-25 to +85℃					
Rated voltage V_R	10 to 450 V DC						500 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	47 to 100000 μF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	I≤ $3\sqrt{CV}$ ιA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	μF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	15	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											

Useful life 85 °C; V_R,$I_{AC,R}$ 85 °C; V_R,$I_{AC,R}$	V_R≤100V: >7000 h VR>100V: >10000 h	Requirements: V_R≤100V DC/C ≤±30% of initial value ESR ≤3 times initial specified limit I_{leak} ≤ initial specified limit Failure rate :≤1%/1000 hour	V_R>100V DC/C ≤ ±20% of initial value ESR ≤ 2 times initial specified limit I_{leak} ≤ initial specified limit Failure rate :≤1%/1000 hour
Voltage Endurance test 85 °C; V_R	5000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤1.3 times initial specified limit I_{leak} ≤ initial specified limit	V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit
Shelf Life 85 °C	1000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤1.3 times initial specified limit I_{leak} ≤ initial specified limit	V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.		

Characteristics at lowtemperature	Max. impedance ratioat 120 Hz							
	V_R(V)	6.3	10	16	25	35~100	160~250	315~450	500~600
	$Z_{-25℃}$ / $Z_{20℃}$	5	5	5	4	4	4	8	8
	$Z_{-40℃}$ / $Z_{20℃}$	15	15	15	15	12	7	10	-
Sectional specification	IEC 60384-4 and JIS-C-5101								

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

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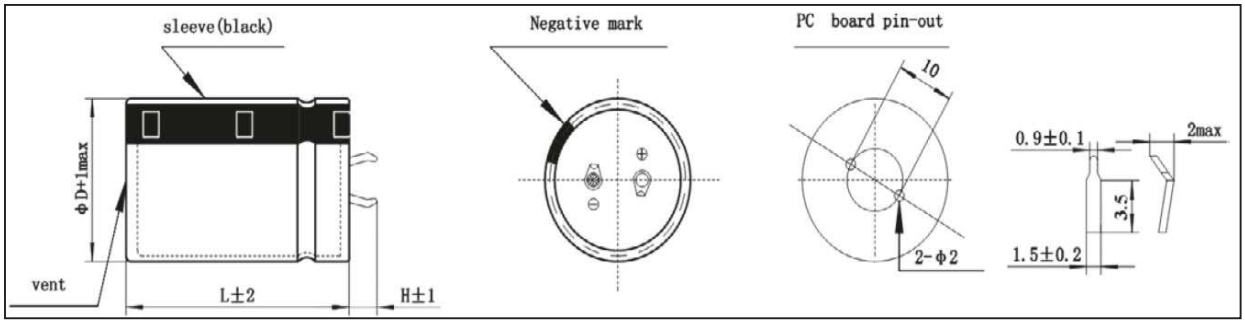
LD series

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

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LD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	10000	22×25	2.51	36	46
10	12000	22×25	2.71	34	44
10	15000	22×30	3.21	27	35
10	15000	25×25	3.21	27	35
10	18000	22×35	3.61	23	29
10	18000	25×30	3.61	23	29
10	22000	22×40	4.11	19	24
10	22000	25×35	4.11	19	24
10	22000	30×25	4.11	19	24
10	33000	22×45	4.81	15	20
10	33000	25×40	5.21	15	20
10	33000	30×30	5.21	15	20
10	47000	22×50	6.01	11	14
10	47000	25×45	6.31	11	14
10	47000	30×35	6.31	11	14
10	56000	30×40	7.21	9	12
10	56000	35×35	7.51	9	12
10	68000	30×50	8.21	8	10
10	68000	35×40	8.21	8	10
10	82000	35×50	9.31	6	8
10	100000	35×55	10.11	5	7
16	8200	22×25	2.21	44	57
16	10000	22×30	2.61	36	46
16	10000	25×25	2.61	36	46
16	12000	22×35	2.91	34	44
16	15000	22×40	3.31	27	35
16	15000	25×30	3.31	27	35
16	15000	30×25	3.41	27	35
16	18000	22×45	3.81	23	29
16	18000	25×35	3.71	23	29
16	22000	22×50	4.21	19	24
16	22000	25×40	4.21	19	24
16	22000	30×30	4.21	19	24
16	22000	35×25	4.41	19	24
16	33000	25×45	5.21	12	16
16	33000	30×35	5.21	12	16
16	33000	35×30	5.21	12	16
16	47000	25×50	6.31	9	11
16	47000	30×40	6.31	9	11
16	47000	35×35	6.31	9	11
16	56000	30×45	9.81	7	10
16	56000	35×40	9.81	7	10
16	56000	40×40	9.81	7	10
16	68000	35×50	10.81	6	8
16	68000	40×50	11.51	6	8
16	82000	35×60	11.81	5	7
16	82000	40×50	11.81	5	7
16	100000	35×80	13.21	4	6
16	100000	40×60	13.51	4	6
25	5600	22×25	2.01	55	71
25	6800	22×30	2.31	45	59
25	6800	25×25	2.31	45	59
25	8200	22×35	2.61	37	49
25	10000	22×40	2.91	31	40
25	10000	25×30	2.81	31	40
25	10000	30×25	3.01	31	40
25	12000	22×45	3.31	30	39
25	12000	25×35	3.21	30	39
25	12000	30×30	3.41	30	39
25	15000	25×40	3.71	24	31

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
25	15000	35×25	3.91	24	31
25	18000	25×50	4.31	20	26
25	18000	30×35	4.21	20	26
25	18000	35×30	4.41	20	26
25	22000	30×40	5.01	16	21
25	22000	35×35	5.01	16	21
25	33000	35×40	8.11	11	14
25	33000	40×40	8.71	11	14
25	39000	35×45	9.01	9	12
25	39000	40×40	9.61	9	12
25	47000	35×50	9.61	8	10
25	56000	35×60	10.31	6	8
25	56000	40×50	10.81	6	8
25	68000	35×80	11.31	5	7
25	68000	40×60	11.81	5	7
25	82000	40×80	13.51	4	6
35	3300	22×25	1.81	77	100
35	3900	22×30	2.11	65	85
35	4700	25×25	2.21	54	71
35	5600	22×35	2.31	46	59
35	5600	25×30	2.31	46	59
35	6800	22×40	2.91	38	49
35	6800	25×35	2.91	38	49
35	6800	30×25	2.91	38	49
35	8200	22×50	2.81	31	40
35	8200	25×40	2.81	31	40
35	8200	30×30	2.81	31	40
35	8200	35×25	2.91	31	40
35	10000	25×45	3.11	26	33
35	10000	30×35	3.21	26	33
35	12000	25×50	3.51	26	33
35	12000	30×40	3.51	26	33
35	12000	35×30	3.61	26	33
35	15000	30×45	4.11	20	27
35	15000	35×35	4.11	20	27
35	18000	30×50	4.61	17	22
35	18000	35×40	4.71	17	22
35	22000	35×45	5.31	14	18
35	27000	35×45	8.21	13	17
35	27000	40×40	8.21	13	17
35	33000	35×50	8.71	11	14
35	39000	35×60	10.31	9	12
35	39000	40×50	10.31	9	12
35	47000	35×80	11.41	8	10
35	47000	40×60	10.81	8	10
35	56000	40×70	12.11	6	8
35	68000	40×80	14.21	5	7
50	2200	22×25	1.71	92	120
50	2700	22×30	1.91	76	98
50	2700	25×25	1.91	76	98
50	3300	25×30	1.81	62	80
50	3900	22×35	2.11	52	68
50	3900	25×30	2.11	52	68
50	3900	30×25	2.41	52	68
50	4700	22×40	2.41	43	56
50	4700	25×35	2.41	43	56
50	5600	22×50	2.51	36	47
50	5600	25×40	2.51	36	47
50	5600	30×30	2.51	36	47
50	5600	35×25	2.61	36	47

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LD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
50	6800	25×45	3.21	30	39
50	6800	30×35	3.21	30	39
50	8200	25×50	3.01	25	32
50	8200	30×40	3.01	25	32
50	8200	35×30	3.01	25	32
50	10000	30×45	3.41	20	27
50	10000	35×35	3.41	20	27
50	12000	30×45	3.81	26	33
50	12000	35×35	3.81	26	33
50	15000	30×50	4.51	20	27
50	15000	35×40	7.71	20	27
50	15000	40×40	8.11	20	27
50	18000	35×45	8.31	17	22
50	18000	40×40	8.31	17	22
50	22000	35×50	9.11	14	18
50	22000	40×50	9.41	14	18
50	27000	35×80	11.21	11	15
50	27000	40×60	10.81	11	15
50	33000	35×80	13.41	9	12
50	33000	40×70	13.41	9	12
50	39000	40×80	15.51	8	10
63	1500	22×25	1.61	140	180
63	1800	22×25	1.81	120	150
63	2200	22×30	2.01	92	120
63	2200	25×25	2.01	92	120
63	2700	22×35	2.21	76	98
63	2700	25×30	2.31	76	98
63	3300	22×40	2.31	62	80
63	3300	25×35	2.31	62	80
63	3300	30×25	2.31	62	80
63	3900	22×45	2.51	52	68
63	3900	25×40	2.61	52	68
63	3900	30×30	2.61	52	68
63	3900	35×25	2.71	52	68
63	4700	30×30	2.91	43	56
63	5600	25×45	3.11	36	47
63	5600	30×35	3.21	36	47
63	5600	35×30	3.31	36	47
63	6800	30×40	3.61	30	39
63	6800	35×35	3.71	30	39
63	8200	30×50	3.71	25	32
63	8200	35×40	3.81	25	32
63	10000	35×45	4.31	20	27
63	12000	35×50	4.81	21	28
63	12000	35×50	8.71	21	28
63	12000	40×40	8.61	21	28
63	15000	35×70	10.21	17	22
63	15000	40×50	9.51	17	22
63	18000	35×80	11.21	14	18
63	18000	40×60	10.71	14	18
63	27000	40×80	12.71	9	12
80	1000	22×25	1.31	150	200
80	1200	22×30	1.51	130	170
80	1500	25×25	1.71	100	130
80	1800	22×35	1.91	85	110
80	1800	25×30	1.91	85	110
80	2200	22×40	2.11	70	90
80	2200	25×35	2.21	70	90
80	2200	30×25	2.21	70	90
80	2700	22×50	2.51	57	74

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
80	2700	25×40	2.51	57	74
80	2700	30×30	2.51	57	74
80	2700	35×25	2.51	57	74
80	3300	25×45	2.81	46	60
80	3300	30×35	2.81	46	60
80	3900	25×50	3.11	39	51
80	3900	30×40	3.21	39	51
80	3900	35×30	3.21	39	51
80	4700	30×45	3.61	33	42
80	4700	35×35	3.61	33	42
80	5600	30×50	3.81	27	36
80	5600	35×40	3.81	27	36
80	6800	35×50	4.11	23	29
80	8200	35×50	6.91	19	24
80	10000	35×60	8.71	15	20
80	12000	35×70	9.71	13	17
80	12000	40×50	9.01	13	17
80	15000	35×80	10.51	10	13
80	15000	40×60	10.21	10	13
80	18000	40×80	12.31	9	11
100	680	22×25	1.11	220	290
100	820	22×30	1.21	180	240
100	1000	25×25	1.41	150	200
100	1200	22×35	1.61	130	170
100	1200	25×30	1.61	130	170
100	1500	22×40	1.81	100	130
100	1500	25×35	1.81	100	130
100	1500	30×25	1.81	100	130
100	1800	22×50	2.11	85	110
100	1800	25×40	2.01	85	110
100	1800	30×30	2.11	85	110
100	1800	35×25	2.21	85	110
100	2200	25×45	2.21	70	90
100	2200	30×35	2.31	70	90
100	2200	35×30	2.51	70	90
100	2700	25×50	2.61	57	74
100	2700	30×40	2.71	57	74
100	3300	30×45	3.01	46	60
100	3300	35×35	3.11	46	60
100	3900	30×45	3.41	39	51
100	3900	35×35	3.41	39	51
100	4700	35×40	4.01	33	42
100	5600	35×45	7.01	27	36
100	5600	40×40	7.41	27	36
100	6800	35×50	8.01	23	29
100	6800	40×50	8.91	23	29
100	8200	35×70	9.61	19	24
100	8200	40×60	9.61	19	24
100	10000	35×80	10.41	15	20
100	10000	40×60	10.21	15	20
100	12000	40×80	12.31	13	17
160	220	22×20	1.01	500	900
160	270	22×25	1.11	410	740
160	330	22×25	1.51	330	600
160	390	22×30	1.51	280	510
160	390	25×25	1.61	280	510
160	470	22×35	1.81	230	420
160	470	25×25	1.71	230	420
160	560	22×35	2.11	200	360
160	560	25×30	2.21	200	360

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LD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	560	30×25	2.11	200	360
160	680	22×40	2.31	160	290
160	680	25×35	2.31	160	290
160	820	22×50	2.71	130	240
160	820	25×40	2.71	130	240
160	820	30×30	2.71	130	240
160	820	35×25	2.71	130	240
160	1000	25×45	3.31	110	200
160	1000	30×35	3.41	110	200
160	1000	35×30	3.41	110	200
160	1200	25×50	3.71	94	170
160	1200	30×40	3.81	94	170
160	1200	35×35	3.81	94	170
160	1500	30×45	4.41	72	130
160	1500	35×40	4.41	72	130
160	1800	35×40	4.41	61	110
160	2200	35×45	4.91	50	90
160	2700	35×50	5.31	41	74
160	3300	35×70	5.51	33	60
160	3300	40×60	5.51	33	60
160	3900	35×80	5.91	28	51
160	4700	40×80	7.31	24	42
180	270	22×25	1.21	410	740
180	330	22×30	1.51	330	600
180	390	25×25	1.68	280	510
180	470	22×35	1.71	230	420
180	470	25×30	1.71	230	420
180	470	30×25	1.81	230	420
180	560	22×40	2.12	200	360
180	560	25×35	2.12	200	360
180	680	22×50	2.41	160	290
180	680	25×40	2.41	160	290
180	680	30×30	2.41	160	290
180	680	35×25	2.41	160	290
180	820	25×45	2.71	130	240
180	820	30×35	2.71	130	240
180	820	35×30	2.71	130	240
180	1000	25×50	3.51	110	200
180	1000	30×40	3.51	110	200
180	1200	30×45	3.92	94	170
180	1200	35×35	3.92	94	170
180	1500	35×45	4.61	72	130
180	1800	35×50	4.11	61	110
200	220	22×25	1.21	500	900
200	270	22×25	1.32	410	740
200	330	22×25	1.54	330	600
200	330	22×30	1.61	330	600
200	330	25×25	1.64	330	600
200	390	22×30	1.75	280	510
200	390	25×25	1.68	280	510
200	390	25×30	1.87	280	510
200	390	30×25	2.06	280	510
200	470	22×30	1.95	230	420
200	470	22×35	2	230	420
200	470	25×25	1.95	230	420
200	470	25×30	2.05	230	420
200	470	30×25	2.28	230	420
200	560	22×35	2.25	200	360
200	560	22×40	2.32	200	360
200	560	25×30	2.24	200	360

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	560	25×35	2.34	200	360
200	560	30×25	2.34	200	360
200	560	30×30	2.59	200	360
200	560	35×25	2.58	200	360
200	680	22×40	2.6	160	290
200	680	22×45	2.57	160	290
200	680	25×35	2.49	160	290
200	680	25×40	2.68	160	290
200	680	30×25	2.42	160	290
200	680	30×30	2.87	160	290
200	680	35×25	2.9	160	290
200	820	22×45	2.99	130	240
200	820	25×35	2.76	130	240
200	820	25×40	2.99	130	240
200	820	25×45	3.06	130	240
200	820	30×30	2.99	130	240
200	820	30×35	3.28	130	240
200	820	35×25	3.06	130	240
200	820	35×30	3.3	130	240
200	1000	25×45	3.63	110	200
200	1000	25×50	3.8	110	200
200	1000	30×30	3.51	110	200
200	1000	30×35	3.63	110	200
200	1000	30×40	4	110	200
200	1000	35×25	3.51	110	200
200	1000	35×30	4.1	110	200
200	1200	25×50	4.03	94	170
200	1200	30×45	4.53	94	170
200	1200	35×35	4.53	94	170
200	1500	30×50	5.26	72	130
200	1500	35×35	4.8	72	130
200	1500	35×40	5.26	72	130
200	1800	30×50	5.31	61	110
200	1800	30×55	5.67	61	110
200	1800	35×40	5.31	61	110
200	1800	35×45	5.77	61	110
200	2200	35×45	5.81	50	90
200	2200	35×50	5.91	50	90
200	2700	35×55	6.03	41	74
200	2700	35×60	6.19	41	74
200	2700	40×50	6.19	41	74
200	3300	35×80	7.5	33	60
200	3300	40×60	7.5	33	60
200	3900	40×80	8	28	51
250	100	22×25	0.73	1110	1990
250	150	22×25	0.93	740	1330
250	180	22×25	1.12	620	1110
250	220	22×30	1.29	500	900
250	220	25×25	1.29	500	900
250	270	22×30	1.47	410	740
250	270	25×25	1.54	410	740
250	330	22×30	1.67	330	600
250	330	22×35	1.7	330	600
250	330	25×25	1.63	330	600
250	330	25×30	1.79	330	600
250	390	22×35	1.91	280	510
250	390	22×40	1.94	280	510
250	390	25×30	1.86	280	510
250	390	25×35	2.02	280	510
250	390	30×25	2.15	280	510

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LD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	470	22×40	2.19	230	420
250	470	22×45	2.22	230	420
250	470	25×30	2.06	230	420
250	470	25×35	2.23	230	420
250	470	30×30	2.45	230	420
250	560	22×40	2.46	200	360
250	560	22×50	2.54	200	360
250	560	25×35	2.46	200	360
250	560	25×40	2.53	200	360
250	560	30×30	2.7	200	360
250	560	35×25	2.73	200	360
250	680	22×50	2.9	160	290
250	680	25×40	2.72	160	290
250	680	25×45	2.9	160	290
250	680	30×35	3.09	160	290
250	680	35×25	2.9	160	290
250	680	35×30	3.35	160	290
250	820	25×45	3.28	130	240
250	820	25×50	3.36	130	240
250	820	25×55	3.48	130	240
250	820	30×35	3.3	130	240
250	820	30×40	3.39	130	240
250	820	35×30	3.44	130	240
250	820	35×35	3.81	130	240
250	1000	25×50	3.8	110	200
250	1000	30×40	4	110	200
250	1000	30×45	4.29	110	200
250	1000	35×30	4.1	110	200
250	1000	35×35	4.29	110	200
250	1000	35×40	4.38	110	200
250	1200	30×45	4.62	94	170
250	1200	30×50	4.74	94	170
250	1200	35×35	4.62	94	170
250	1200	35×40	4.76	94	170
250	1500	35×40	5.38	72	130
250	1500	35×45	5.48	72	130
250	1800	35×45	5.78	61	110
250	1800	35×55	6.35	61	110
250	2200	35×55	6.45	50	90
250	2200	35×65	6.8	50	90
315	100	22×25	0.73	1110	1990
315	120	22×30	0.76	920	1660
315	150	22×30	0.94	740	1330
315	150	25×25	0.94	740	1330
315	180	22×35	1.12	620	1110
315	180	25×30	1.12	620	1110
315	220	22×40	1.32	500	900
315	220	25×35	1.32	500	900
315	220	30×25	1.32	500	900
315	270	22×45	1.61	410	740
315	270	25×40	1.61	410	740
315	270	30×30	1.61	410	740
315	270	35×25	1.61	410	740
315	330	25×45	1.76	330	600
315	330	30×35	1.76	330	600
315	390	25×50	2.21	280	510
315	390	30×40	2.21	280	510
315	390	35×30	2.21	280	510
315	470	30×45	2.45	230	420
315	470	35×35	2.45	230	420

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
315	560	30×50	2.85	200	360
315	560	35×40	2.85	200	360
315	680	35×45	2.31	160	290
350	82	22×25	0.65	1350	2430
350	100	22×25	0.73	1110	1990
350	120	22×30	0.83	920	1660
350	120	25×25	0.83	920	1660
350	150	22×35	0.95	740	1330
350	150	25×30	0.95	740	1330
350	180	22×40	1.12	620	1110
350	180	30×25	1.12	620	1110
350	220	22×45	1.42	500	900
350	220	25×35	1.42	500	900
350	220	30×30	1.42	500	900
350	220	35×25	1.51	500	900
350	270	25×40	1.72	410	740
350	270	30×35	1.72	410	740
350	330	25×45	1.83	330	600
350	330	30×40	1.83	330	600
350	330	35×30	1.83	330	600
350	390	30×40	2.34	280	510
350	390	35×35	2.34	280	510
350	470	30×45	2.49	230	420
350	470	35×40	2.49	230	420
350	560	35×45	3.22	200	360
350	680	35×45	3.7	160	290
350	820	35×50	4.5	130	240
350	1000	35×55	5.2	110	200
350	1200	35×60	5.5	94	170
350	1200	40×50	5.6	94	170
350	1500	40×60	8.5	72	130
350	1800	40×70	7.9	61	110
350	2200	40×80	8.7	50	90
400	68	22×25	0.63	1630	2930
400	82	22×25	0.79	1350	2430
400	100	22×25	0.87	1110	1990
400	100	22×30	0.91	1110	1990
400	100	25×25	1.05	1110	1990
400	120	22×30	0.99	920	1660
400	120	22×35	1.1	920	1660
400	120	25×25	1.1	920	1660
400	120	25×30	1.2	920	1660
400	150	22×30	1.15	740	1330
400	150	22×35	1.19	740	1330
400	150	25×25	1.15	740	1330
400	150	25×30	1.22	740	1330
400	150	30×25	1.24	740	1330
400	180	22×35	1.31	620	1110
400	180	22×40	1.37	620	1110
400	180	25×30	1.3	620	1110
400	180	25×35	1.46	620	1110
400	180	30×30	1.46	620	1110
400	220	22×40	1.53	500	900
400	220	22×50	1.76	500	900
400	220	25×35	1.5	500	900
400	220	25×40	1.76	500	900
400	220	30×25	1.53	500	900
400	220	30×30	1.78	500	900
400	220	35×25	1.81	500	900
400	220	35×30	1.86	500	900

CapXon

LD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	270	22×45	1.79	410	740
400	270	25×40	1.83	410	740
400	270	25×45	1.97	410	740
400	270	30×30	1.89	410	740
400	270	30×35	2.04	410	740
400	270	35×25	2.17	410	740
400	270	35×30	2.04	410	740
400	330	25×45	2.03	330	600
400	330	25×50	2.2	330	600
400	330	30×35	2.15	330	600
400	330	30×40	2.47	330	600
400	330	35×30	2.37	330	600
400	390	25×50	2.33	280	510
400	390	30×35	2.35	280	510
400	390	30×45	2.59	280	510
400	390	35×30	2.32	280	510
400	390	35×35	2.55	280	510
400	470	25×55	2.66	230	420
400	470	30×40	2.61	230	420
400	470	30×50	2.75	230	420
400	470	35×35	2.58	230	420
400	470	35×40	2.79	230	420
400	560	30×55	3.36	200	360
400	560	35×35	3.15	200	360
400	560	35×45	3.43	200	360
400	560	40×40	3.48	200	360
400	680	30×55	3.5	160	290
400	680	35×40	3.85	160	290
400	680	35×50	3.93	160	290
400	680	35×55	4.16	160	290
400	680	40×50	4.38	160	290
400	820	35×50	4.5	130	240
400	820	35×55	4.6	130	240
400	820	40×50	4.6	130	240
400	1000	35×65	5.2	110	200
400	1000	40×60	5.3	110	200
400	1000	45×50	5.3	110	200
400	1200	35×70	5.9	94	170
400	1200	40×60	5.9	94	170
400	1500	40×70	6.7	72	130
400	1800	45×80	7.4	61	110
420	100	22×30	1.08	1470	2650
420	100	25×25	1.08	1470	2650
420	120	25×30	1.23	1230	2210
420	150	22×40	1.19	980	1770
420	150	25×35	1.24	980	1770
420	180	25×35	1.46	820	1470
420	180	30×30	1.46	820	1470
420	220	25×40	1.82	670	1210
420	220	30×35	1.87	670	1210
420	270	25×55	2.07	540	980
420	270	30×35	2.07	540	980
420	270	35×30	2.07	540	980
420	330	30×45	2.4	440	800
420	330	35×35	2.4	440	800
420	390	30×50	2.66	380	680
420	470	30×55	2.84	310	560
420	470	35×45	2.89	310	560
420	560	35×50	3.45	260	470
420	680	35×60	4.01	220	390
420	820	35×65	4.61	180	320
420	1000	35×80	5.61	150	270
420	1500	40×80	7.21	100	180
420	1800	45×80	7.81	83	150
450	47	22×25	0.53	3130	5640
450	56	22×25	0.61	2630	4740
450	68	22×30	0.69	2170	3900
450	68	25×25	0.72	2170	3900
450	82	25×25	0.82	1790	3230
450	82	25×30	0.93	1790	3230
450	100	22×35	1.1	1470	2650
450	100	25×30	1.12	1470	2650
450	100	30×25	1.13	1470	2650
450	120	22×40	1.24	1230	2210
450	120	25×30	1.24	1230	2210
450	120	30×25	1.24	1230	2210
450	150	22×45	1.33	980	1770
450	150	25×30	1.2	980	1770
450	150	25×35	1.3	980	1770
450	150	30×30	1.36	980	1770
450	150	35×25	1.43	980	1770
450	180	25×35	1.46	820	1470
450	180	25×40	1.48	820	1470
450	180	30×35	1.7	820	1470
450	180	35×25	1.55	820	1470
450	180	35×30	1.72	820	1470
450	220	22×50	1.84	670	1210
450	220	25×40	1.82	670	1210
450	220	25×50	1.93	670	1210
450	220	30×35	1.87	670	1210
450	220	30×40	1.93	670	1210
450	220	35×25	1.88	670	1210
450	220	35×30	1.94	670	1210
450	270	25×45	2.11	540	980
450	270	25×55	2.22	540	980
450	270	30×35	2.1	540	980
450	270	30×40	2.22	540	980
450	270	35×30	2.05	540	980
450	270	35×35	2.22	540	980
450	330	25×50	2.24	440	800
450	330	30×40	2.24	440	800
450	330	30×45	2.4	440	800
450	330	35×30	2.35	440	800
450	330	35×40	2.53	440	800
450	390	30×45	2.64	380	680
450	390	30×55	2.74	380	680
450	390	35×35	2.63	380	680
450	390	35×45	2.83	380	680
450	470	30×50	2.75	310	560
450	470	35×40	2.79	310	560
450	470	35×50	3.22	310	560
450	470	40×40	3.22	310	560
450	560	30×55	3.63	260	470
450	560	35×45	3.43	260	470
450	560	35×55	3.63	260	470
450	560	40×50	3.63	260	470
450	680	35×50	3.49	220	390
450	680	35×60	3.52	220	390
450	680	40×50	3.51	220	390
450	820	35×65	4.61	180	320

CapXon

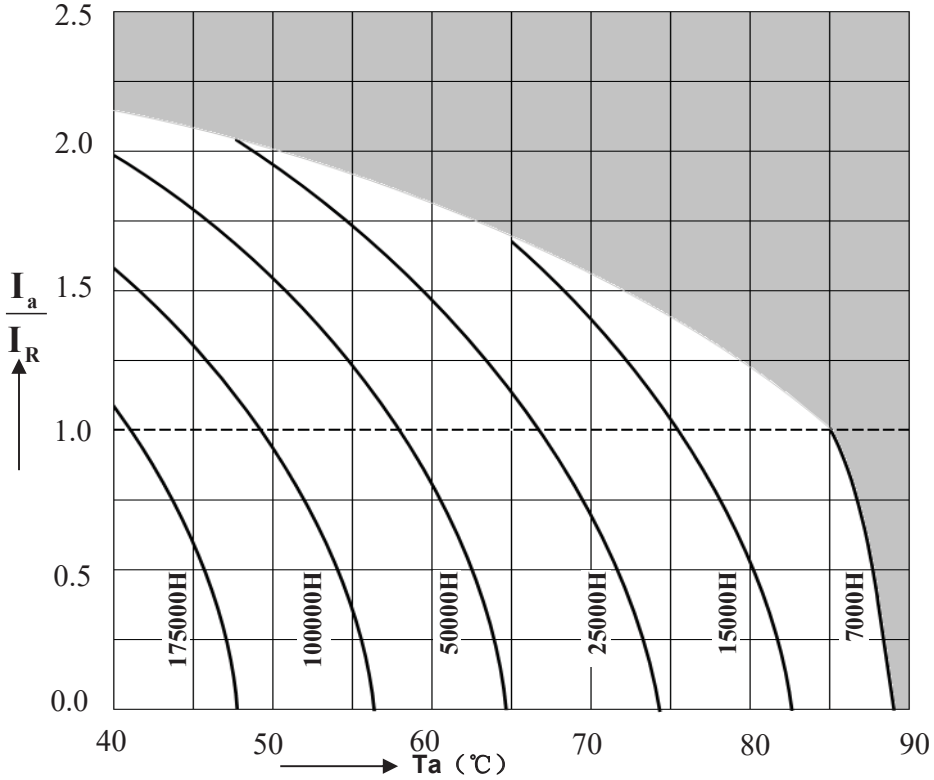
LD series

Case Size

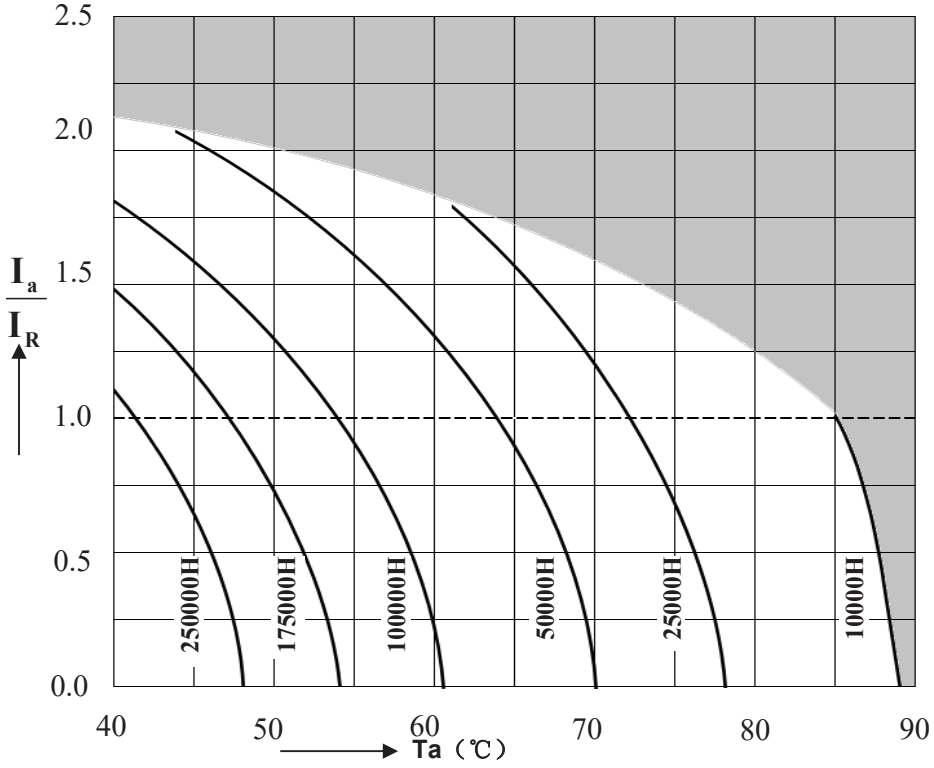
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	820	40×55	4.61	180	320
450	1000	35×70	5.71	150	270
450	1000	40×60	5.21	150	270
450	1200	35×80	5.91	120	220
450	1200	40×65	5.91	120	220
450	1500	40×80	7.31	100	180
450	1800	45×80	7.91	83	150
500	47	22×25	0.56	3130	5640
500	56	25×25	0.62	2630	4740
500	68	22×30	0.7	2170	3900
500	68	25×25	0.75	2170	3900
500	82	25×30	0.83	1790	3230
500	100	25×30	0.96	1470	2650
500	100	30×25	0.99	1470	2650
500	120	25×35	1.12	1230	2210
500	120	30×30	1.13	1230	2210
500	120	35×25	1.15	1230	2210
500	150	25×40	1.3	980	1770
500	150	30×30	1.32	980	1770
500	150	35×25	1.36	980	1770
500	180	25×45	1.58	820	1470
500	180	30×35	1.6	820	1470
500	180	35×30	1.63	820	1470
500	220	25×55	1.76	670	1210
500	220	30×40	1.73	670	1210
500	220	35×35	1.8	670	1210
500	270	30×45	2.15	540	980
500	270	35×35	2.15	540	980
500	330	30×50	2.41	440	800
500	330	35×40	2.32	440	800
500	390	35×45	2.71	380	680
500	470	35×55	2.99	310	560
500	560	35×60	3.11	260	470
500	560	40×50	3.13	260	470
500	680	35×70	3.21	220	390
500	680	40×60	3.22	220	390
500	820	35×80	4.61	180	320
500	820	40×70	4.43	180	320
500	1000	40×80	5.91	150	270
500	1200	40×80	5.98	120	220
500	1500	40×100	6.31	100	180

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions VR≤100V



depending on ambient temperature Ta versus under ripple current operating conditions VR≥160V



CapXon

HP series

HP Series 105℃

Features

Standard capacitors

Applications

- Switch-mode power supplies in industrial and entertainment electronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Specifications

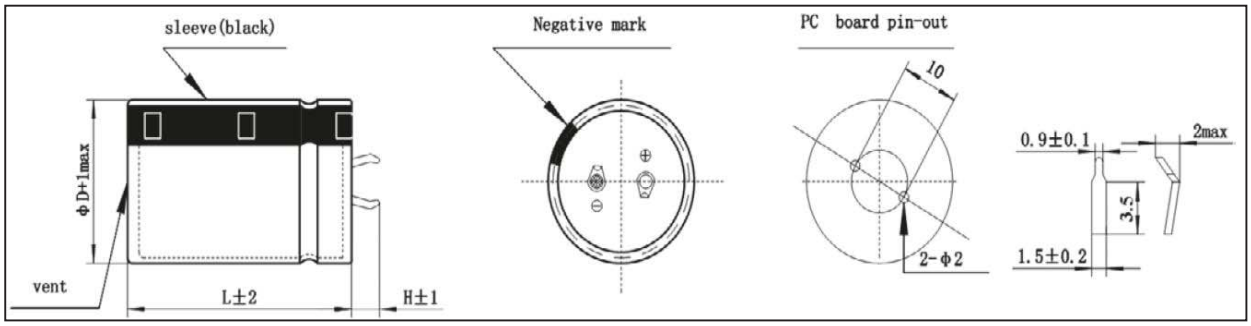
Item	Performance Characteristics											
Operating Temperature Range	-40 to +105℃						-25 to +105℃					
Rated voltage V_R	6.3 to 450 V DC						500 to 550 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	33 to 100000 μF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	I≤ $3\sqrt{CV}$ (μA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	μF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	-	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											
Useful life 105 °C; V_R,$I_{AC,R}$ 105 °C; V_R,$I_{AC,R}$	V_R≤100V: >3000 h VR>100V: >5000 h	Requirements: V_R≤100V DC/C ≤±30% of initial value ESR ≤3 times initial specified limit I_{leak} ≤ initial specified limit Failure rate :≤1%/1000 hour						V_R>100V DC/C ≤ ±20% of initial value ESR ≤ 2 times initial specified limit I_{leak} ≤ initial specified limit Failure rate :≤1%/1000 hour					
Voltage Endurance test 105 °C; V_R	2000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit						V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit					
Shelf Life 105 °C	1000 h	Post test requirements: V_R≤100V DC/C ≤ ±15% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit						V_R>100V DC/C ≤ ±10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit					
Vibration Resistance test	To IEC 60068-2-6, test Fc:											
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.											
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz											
	V_R(V)	6.3~16	25	35	50~100	160~250	315~450	500~600				
	$Z_{-25℃}$ / $Z_{20℃}$	4	3	3	3	3	8	8				
	$Z_{-40℃}$ / $Z_{20℃}$	15	10	8	6	7	10	-				
Sectional specification	IEC 60384-4 and JIS-C-5101											

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
6.3	12000	22×25	1.54	47	61
6.3	15000	22×25	1.72	37	49
6.3	18000	22×30	1.95	31	41
6.3	18000	25×25	1.96	31	41
6.3	22000	22×35	2.23	26	33
6.3	22000	25×30	2.25	26	33
6.3	22000	30×25	2.28	26	33
6.3	27000	22×40	2.54	23	29
6.3	27000	25×35	2.57	23	29
6.3	27000	30×25	2.59	23	29
6.3	33000	22×45	2.88	19	24
6.3	33000	25×40	2.93	19	24
6.3	33000	30×30	2.89	19	24
6.3	33000	35×25	2.93	19	24
6.3	39000	25×40	3.18	16	20
6.3	39000	30×35	3.26	16	20
6.3	39000	35×30	3.4	16	20
6.3	47000	25×50	3.69	13	17
6.3	47000	30×40	3.69	13	17
6.3	47000	35×30	3.73	13	17
6.3	56000	30×45	4.16	11	14
6.3	56000	35×35	4.17	11	14
6.3	68000	30×50	4.71	9	12
6.3	68000	35×40	4.71	9	12
6.3	82000	35×45	5.32	8	10
10	4700	22×25	1.24	76	99
10	6800	22×25	1.4	53	68
10	8200	22×25	1.65	44	57
10	10000	22×25	1.9	36	46
10	12000	22×30	2.48	34	44
10	12000	25×25	2.48	34	44
10	15000	22×35	2.71	27	35
10	15000	25×25	2.6	27	35
10	18000	22×35	2.89	23	29
10	18000	25×30	2.94	23	29
10	18000	30×25	2.94	23	29
10	22000	22×40	2.96	19	24
10	22000	25×30	2.96	19	24
10	22000	30×25	3.08	19	24
10	27000	22×50	3.12	19	25
10	27000	25×40	3.12	19	25
10	27000	30×30	3.13	19	25
10	27000	35×25	3.21	19	25
10	33000	25×45	3.32	15	20
10	33000	35×30	3.85	15	20
10	39000	30×40	3.85	13	17
10	47000	30×45	3.98	11	14
10	47000	35×35	4.05	11	14
10	56000	30×50	4.21	9	12
10	56000	35×40	4.32	9	12
10	68000	35×45	5.12	8	10
10	100000	35×50	6.14	5	7
16	4700	22×25	1.55	76	99
16	6800	22×25	1.78	53	68
16	8200	22×25	2.14	44	57
16	10000	22×30	2.48	36	46
16	10000	25×25	2.56	36	46
16	12000	22×35	2.8	34	44
16	12000	25×30	2.9	34	44
16	12000	30×25	2.97	34	44

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
16	15000	22×40	3.17	27	35
16	15000	25×35	3.29	27	35
16	15000	30×30	3.38	27	35
16	18000	22×45	3.5	23	29
16	18000	25×40	3.65	23	29
16	18000	30×30	3.65	23	29
16	22000	22×45	3.65	19	24
16	22000	25×40	3.71	19	24
16	22000	30×35	3.83	19	24
16	27000	25×40	3.95	15	20
16	27000	30×35	3.96	15	20
16	33000	25×45	4.32	12	16
16	33000	30×35	4.41	12	16
16	33000	35×30	4.43	12	16
16	39000	30×40	4.9	10	14
16	39000	35×35	5.1	10	14
16	47000	30×45	5.3	9	11
16	47000	35×40	5.52	9	11
16	56000	30×50	6	7	10
16	56000	35×40	6.05	7	10
16	68000	35×50	6.4	6	8
25	2200	22×25	1.03	140	180
25	3300	22×25	1.48	92	120
25	4700	22×25	1.73	65	85
25	5600	22×25	1.85	55	71
25	6800	22×30	2.05	45	59
25	6800	25×25	2.1	45	59
25	8200	22×30	2.31	37	49
25	8200	25×25	2.31	37	49
25	10000	22×35	2.65	31	40
25	10000	25×30	2.68	31	40
25	12000	22×40	2.92	30	39
25	12000	25×30	2.91	30	39
25	12000	30×25	2.93	30	39
25	15000	22×45	3.18	24	31
25	15000	25×35	3.1	24	31
25	15000	30×30	3.32	24	31
25	18000	22×45	3.51	20	26
25	18000	25×40	3.6	20	26
25	18000	30×30	3.8	20	26
25	22000	25×45	4.04	16	21
25	22000	30×35	4.04	16	21
25	22000	35×30	4.04	16	21
25	27000	30×40	4.74	13	17
25	27000	35×35	4.76	13	17
25	33000	30×45	5.5	11	14
25	33000	35×40	5.7	11	14
25	39000	35×45	5.8	9	12
25	47000	35×50	6.3	8	10
35	1500	22×25	1.26	170	220
35	2200	22×25	1.35	120	150
35	2700	22×25	1.36	92	120
35	3300	22×25	1.49	77	100
35	3900	22×30	1.82	65	85
35	4700	22×30	2.02	54	71
35	4700	25×25	2.12	54	71
35	5600	22×30	2.25	46	59
35	5600	25×25	2.35	46	59
35	6800	22×35	2.36	38	49
35	6800	25×30	2.41	38	49

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HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
35	6800	30×25	2.5	38	49
35	8200	22×40	2.55	31	40
35	8200	25×35	2.61	31	40
35	8200	30×25	2.65	31	40
35	10000	22×40	3	26	33
35	10000	25×35	3.15	26	33
35	10000	30×30	3.35	26	33
35	12000	22×45	3.47	26	33
35	12000	25×40	3.5	26	33
35	12000	30×35	3.52	26	33
35	12000	35×30	3.58	26	33
35	15000	25×45	3.65	20	27
35	15000	30×40	3.69	20	27
35	15000	35×35	3.75	20	27
35	18000	25×50	3.82	17	22
35	18000	30×40	3.95	17	22
35	18000	35×35	4.12	17	22
35	22000	30×45	4.38	14	18
35	22000	35×40	4.78	14	18
35	27000	30×50	4.86	13	17
35	27000	35×45	5.12	13	17
35	33000	35×50	5.9	11	14
50	1000	22×25	0.84	210	270
50	1500	22×25	1.27	140	180
50	1800	22×25	1.35	120	150
50	2200	22×25	1.48	92	120
50	2700	22×25	1.68	76	98
50	3300	22×30	1.75	62	80
50	3300	25×25	1.87	62	80
50	3900	22×30	2.12	52	68
50	3900	25×25	2.21	52	68
50	4700	22×35	2.25	43	56
50	4700	25×30	2.31	43	56
50	4700	30×25	2.33	43	56
50	5600	22×40	2.49	36	47
50	5600	25×35	2.76	36	47
50	5600	30×30	2.85	36	47
50	6800	22×50	3.1	30	39
50	6800	25×40	3.05	30	39
50	6800	30×35	3.34	30	39
50	6800	35×30	3.42	30	39
50	8200	25×45	3.48	25	32
50	8200	30×35	3.51	25	32
50	8200	35×30	3.6	25	32
50	10000	25×50	3.91	20	27
50	10000	30×40	3.98	20	27
50	10000	35×30	4.05	20	27
50	12000	30×45	4.31	26	33
50	12000	35×35	4.38	26	33
50	15000	35×50	4.8	20	27
50	18000	35×50	5.3	17	22
50	22000	35×60	5.5	14	18
63	680	22×25	0.7	300	390
63	1000	22×25	1	210	270
63	1200	22×25	1.21	170	220
63	1500	22×25	1.36	140	180
63	1800	22×30	1.41	120	150
63	1800	25×25	1.46	120	150
63	2200	22×30	1.54	92	120
63	2200	25×25	1.61	92	120

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	2700	22×35	2.02	76	98
63	2700	25×30	2.05	76	98
63	2700	30×25	2.1	76	98
63	3300	22×40	2.12	62	80
63	3300	25×35	2.2	62	80
63	3300	30×25	2.25	62	80
63	3300	35×25	2.32	62	80
63	3900	22×40	2.34	52	68
63	3900	25×35	2.42	52	68
63	3900	30×25	2.43	52	68
63	4700	22×45	2.59	43	56
63	4700	25×40	2.65	43	56
63	4700	30×30	2.71	43	56
63	5600	25×45	2.93	36	47
63	5600	30×35	3.05	36	47
63	5600	35×30	3.09	36	47
63	6800	30×40	3.72	30	39
63	6800	35×35	3.78	30	39
63	8200	30×40	3.82	25	32
63	8200	35×35	3.92	25	32
63	10000	30×45	4.05	20	27
63	10000	35×40	4.1	20	27
63	12000	35×45	4.76	21	28
63	15000	35×50	5.4	17	22
80	680	22×25	0.75	220	290
80	820	22×25	1.11	180	240
80	1000	22×25	1.22	150	200
80	1200	22×30	1.32	130	170
80	1200	25×25	1.39	130	170
80	1500	22×30	1.59	100	130
80	1500	25×25	1.6	100	130
80	1800	22×35	1.71	85	110
80	1800	25×30	1.75	85	110
80	1800	30×25	1.95	85	110
80	2200	22×40	2.12	70	90
80	2200	25×30	2.05	70	90
80	2700	22×45	2.41	57	74
80	2700	25×40	2.45	57	74
80	2700	30×30	2.49	57	74
80	3300	25×45	2.6	46	60
80	3300	30×35	2.64	46	60
80	3300	35×25	2.62	46	60
80	3900	30×35	2.95	39	51
80	3900	35×30	3.05	39	51
80	4700	30×45	3.21	33	42
80	4700	35×30	3.45	33	42
80	4700	35×35	3.51	33	42
80	5600	30×45	3.55	27	36
80	5600	35×35	3.65	27	36
80	6800	30×50	3.72	23	29
80	6800	35×45	3.9	23	29
80	8200	35×50	4.3	19	24
80	10000	35×50	4.4	15	20
100	330	22×25	0.55	460	600
100	470	22×25	0.79	320	420
100	560	22×25	1.06	280	360
100	680	22×25	1.16	220	290
100	680	22×30	1.18	220	290
100	680	25×25	1.2	220	290
100	680	30×25	1.25	220	290

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HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	820	22×25	1.41	180	240
100	820	22×30	1.46	180	240
100	820	25×25	1.51	180	240
100	820	30×25	1.55	180	240
100	1000	22×30	1.71	150	200
100	1000	25×30	1.77	150	200
100	1000	25×35	1.8	150	200
100	1000	30×25	1.81	150	200
100	1200	22×30	1.83	130	170
100	1200	25×25	1.85	130	170
100	1200	25×35	1.94	130	170
100	1200	30×25	1.95	130	170
100	1500	22×35	2.11	100	130
100	1500	25×30	2.15	100	130
100	1500	25×35	2.19	100	130
100	1500	30×25	2.2	100	130
100	1500	35×25	2.26	100	130
100	1800	22×40	2.31	85	110
100	1800	25×35	2.32	85	110
100	1800	25×40	2.38	85	110
100	1800	30×25	2.33	85	110
100	1800	30×30	2.36	85	110
100	1800	35×25	2.4	85	110
100	2200	22×45	2.62	70	90
100	2200	25×40	2.65	70	90
100	2200	30×35	2.75	70	90
100	2200	35×25	2.7	70	90
100	2700	25×45	2.91	57	74
100	2700	30×35	2.93	57	74
100	2700	35×35	3.25	57	74
100	3300	25×50	3.31	46	60
100	3300	30×40	3.37	46	60
100	3300	35×35	3.45	46	60
100	3300	35×40	3.56	46	60
100	3900	30×45	3.68	39	51
100	3900	35×35	3.7	39	51
100	4700	30×50	3.82	33	42
100	4700	35×40	3.84	33	42
100	4700	35×50	3.97	33	42
100	5600	35×45	4.11	27	36
100	6800	35×50	4.51	23	29
100	8200	40×60	4.95	19	24
100	10000	40×60	5.24	15	20
160	220	22×25	0.42	500	900
160	270	22×25	0.95	410	740
160	330	22×25	1.11	330	600
160	330	22×30	1.12	330	600
160	330	25×25	1.13	330	600
160	390	22×25	1.15	280	510
160	390	22×30	1.22	280	510
160	390	25×25	1.25	280	510
160	470	22×25	1.41	230	420
160	470	22×30	1.45	230	420
160	470	25×25	1.5	230	420
160	560	22×25	1.62	200	360
160	560	25×30	1.75	200	360
160	680	22×30	1.84	160	290
160	680	25×25	1.86	160	290
160	680	30×25	2.01	160	290
160	820	22×35	2	130	240

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	820	25×30	2.01	130	240
160	820	25×45	2.2	130	240
160	820	30×25	2.05	130	240
160	820	30×30	2.1	130	240
160	1000	22×40	2.34	110	200
160	1000	22×50	2.41	110	200
160	1000	25×35	2.36	110	200
160	1000	25×45	2.47	110	200
160	1000	30×25	2.06	110	200
160	1000	30×35	2.47	110	200
160	1200	22×45	2.62	94	170
160	1200	25×35	2.61	94	170
160	1200	30×30	2.66	94	170
160	1200	35×25	2.7	94	170
160	1500	25×40	2.83	72	130
160	1500	30×35	2.89	72	130
160	1500	35×25	2.88	72	130
160	1500	35×30	2.96	72	130
160	1800	25×50	3.25	61	110
160	1800	30×35	3.2	61	110
160	1800	35×30	3.25	61	110
160	2200	30×45	3.26	50	90
160	2200	35×35	3.32	50	90
160	2700	30×50	3.67	41	74
160	2700	35×40	3.68	41	74
160	3300	35×45	3.71	33	60
180	270	22×25	0.98	410	740
180	330	22×25	1.14	330	600
180	390	22×25	1.31	280	510
180	470	22×25	1.46	230	420
180	470	22×30	1.5	230	420
180	560	22×30	1.67	200	360
180	560	25×25	1.69	200	360
180	680	22×35	1.88	160	290
180	680	25×30	1.9	160	290
180	820	22×40	2.12	130	240
180	820	25×30	2.12	130	240
180	820	30×25	2.15	130	240
180	1000	22×45	2.39	110	200
180	1000	25×35	2.39	110	200
180	1000	30×25	2.36	110	200
180	1000	35×25	2.47	110	200
180	1200	22×50	2.7	94	170
180	1200	25×40	2.7	94	170
180	1200	30×35	2.75	94	170
180	1500	25×50	3	72	130
180	1500	30×40	3.05	72	130
180	1500	35×30	3.07	72	130
180	1800	30×45	3.2	61	110
180	1800	35×35	3.25	61	110
180	2200	30×50	3.33	50	90
180	2200	35×40	3.35	50	90
180	2700	35×45	3.69	41	74
180	3300	35×50	3.72	33	60
200	100	22×20	0.52	1110	1990
200	120	22×20	0.53	920	1660
200	150	22×20	0.7	740	1330
200	150	22×25	0.72	740	1330
200	150	25×20	0.72	740	1330
200	150	25×25	0.73	740	1330

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HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	180	22×25	0.84	620	1110
200	180	25×20	0.85	620	1110
200	180	30×20	0.87	620	1110
200	220	22×25	0.96	500	900
200	220	25×20	0.96	500	900
200	220	25×25	1.14	500	900
200	220	30×20	1.14	500	900
200	270	22×25	1.1	410	740
200	270	22×30	1.2	410	740
200	270	25×25	1.2	410	740
200	270	30×20	1.2	410	740
200	270	30×25	1.25	410	740
200	330	22×25	1.15	330	600
200	330	22×30	1.22	330	600
200	330	25×25	1.23	330	600
200	330	25×30	1.3	330	600
200	330	30×25	1.3	330	600
200	330	35×20	1.27	330	600
200	390	22×25	1.31	280	510
200	390	22×30	1.37	280	510
200	390	25×25	1.37	280	510
200	390	25×30	1.45	280	510
200	390	30×25	1.45	280	510
200	470	22×30	1.51	230	420
200	470	22×35	1.6	230	420
200	470	25×30	1.6	230	420
200	470	25×35	1.65	230	420
200	470	30×25	1.65	230	420
200	560	22×30	1.67	200	360
200	560	22×35	1.71	200	360
200	560	25×30	1.71	200	360
200	560	25×35	1.8	200	360
200	560	30×25	1.75	200	360
200	560	30×30	1.8	200	360
200	560	35×25	1.76	200	360
200	680	22×35	1.89	160	290
200	680	22×40	2	160	290
200	680	25×30	2	160	290
200	680	25×35	2.15	160	290
200	680	30×30	2.15	160	290
200	680	35×25	2.15	160	290
200	820	22×40	2.13	130	240
200	820	22×45	2.25	130	240
200	820	25×35	2.25	130	240
200	820	25×40	2.4	130	240
200	820	30×30	2.4	130	240
200	820	35×25	2.4	130	240
200	820	35×30	2.49	130	240
200	1000	22×50	2.45	110	200
200	1000	25×40	2.43	110	200
200	1000	25×45	2.56	110	200
200	1000	30×30	2.45	110	200
200	1000	30×35	2.58	110	200
200	1000	35×25	2.47	110	200
200	1000	35×30	2.58	110	200
200	1200	25×45	2.66	94	170
200	1200	25×50	2.78	94	170
200	1200	30×35	2.66	94	170
200	1200	30×40	2.8	94	170
200	1200	35×25	2.7	94	170

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	1200	35×30	2.83	94	170
200	1500	25×50	2.97	72	130
200	1500	30×40	3.06	72	130
200	1500	35×30	3.08	72	130
200	1500	35×45	3.2	72	130
200	1800	30×45	3.26	61	110
200	1800	35×35	3.26	61	110
200	1800	35×40	3.37	61	110
200	2200	30×50	3.51	50	90
200	2200	35×40	3.51	50	90
200	2200	35×45	3.63	50	90
200	2700	35×45	3.7	41	74
200	2700	35×50	3.83	41	74
220	150	22×25	0.73	740	1330
220	180	22×25	0.85	620	1110
220	180	25×25	0.9	620	1110
220	220	22×25	0.97	500	900
220	220	25×25	1.05	500	900
220	220	30×20	1.14	500	900
220	270	22×25	1.11	410	740
220	270	25×25	1.23	410	740
220	330	22×35	1.36	330	600
220	330	25×25	1.36	330	600
220	330	30×25	1.47	330	600
220	390	22×35	1.48	280	510
220	390	25×30	1.48	280	510
220	390	30×25	1.45	280	510
220	470	22×35	1.53	230	420
220	470	25×30	1.54	230	420
220	470	30×25	1.56	230	420
220	560	22×40	1.69	200	360
220	560	25×35	1.73	200	360
220	560	30×30	1.73	200	360
220	560	35×25	1.73	200	360
220	680	22×45	1.91	160	290
220	680	25×40	1.93	160	290
220	680	30×35	2.05	160	290
220	680	35×30	2.06	160	290
220	820	22×50	2.17	130	240
220	820	25×40	2.17	130	240
220	820	30×35	2.18	130	240
220	820	35×30	2.2	130	240
220	1000	25×45	2.46	110	200
220	1000	30×35	2.49	110	200
220	1000	35×30	2.51	110	200
220	1200	25×50	2.79	94	170
220	1200	30×40	2.8	94	170
220	1200	35×35	2.84	94	170
220	1500	30×45	3.07	72	130
220	1500	35×40	3.09	72	130
220	1800	30×50	3.27	61	110
220	1800	35×45	3.27	61	110
220	2200	35×50	3.54	50	90
250	68	22×25	0.38	1630	2930
250	82	22×25	0.48	1350	2430
250	100	22×25	0.53	1110	1990
250	100	25×25	0.65	1110	1990
250	120	22×25	0.75	920	1660
250	150	22×25	0.78	740	1330
250	150	25×25	0.85	740	1330

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HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	150	30×25	0.89	740	1330
250	180	22×25	0.89	620	1110
250	180	30×25	0.95	620	1110
250	220	22×25	1.01	500	900
250	220	22×30	1.07	500	900
250	220	25×25	1.07	500	900
250	220	30×25	1.15	500	900
250	270	22×25	1.15	410	740
250	270	22×30	1.2	410	740
250	270	25×25	1.2	410	740
250	270	25×30	1.25	410	740
250	270	30×25	1.25	410	740
250	270	30×30	1.32	410	740
250	330	22×35	1.26	330	600
250	330	25×25	1.27	330	600
250	330	25×30	1.38	330	600
250	330	30×25	1.38	330	600
250	330	35×25	1.45	330	600
250	390	22×35	1.42	280	510
250	390	25×30	1.45	280	510
250	390	30×25	1.45	280	510
250	390	30×30	1.54	280	510
250	390	35×25	1.56	280	510
250	470	22×35	1.57	230	420
250	470	22×40	1.7	230	420
250	470	25×30	1.67	230	420
250	470	25×35	1.72	230	420
250	470	30×25	1.72	230	420
250	470	30×30	1.79	230	420
250	470	35×25	1.79	230	420
250	560	22×40	1.87	200	360
250	560	22×45	1.97	200	360
250	560	25×35	1.88	200	360
250	560	25×40	1.97	200	360
250	560	30×25	1.88	200	360
250	560	30×30	1.97	200	360
250	560	35×25	1.98	200	360
250	560	35×30	2.1	200	360
250	680	22×45	2.15	160	290
250	680	25×40	2.2	160	290
250	680	30×35	2.24	160	290
250	680	35×30	2.25	160	290
250	820	25×45	2.56	130	240
250	820	30×35	2.56	130	240
250	820	35×30	2.57	130	240
250	1000	25×50	2.85	110	200
250	1000	30×40	2.85	110	200
250	1000	35×30	2.86	110	200
250	1200	30×45	3.2	94	170
250	1200	35×35	2.25	94	170
250	1500	30×50	3.83	72	130
250	1500	35×40	3.91	72	130
250	1800	35×45	4.3	61	110
250	1800	35×50	4.56	61	110
250	1800	35×55	4.88	61	110
250	2200	35×50	5	50	90
250	2200	35×55	5.19	50	90
315	120	22×25	0.76	920	1660
315	150	22×25	0.83	740	1330
315	180	22×30	0.92	620	1110

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
315	220	22×30	1.07	500	900
315	270	22×35	1.21	410	740
315	270	25×30	1.25	410	740
315	330	22×45	1.28	330	600
315	330	25×35	1.31	330	600
315	330	30×25	1.28	330	600
315	390	22×45	1.53	280	510
315	390	25×40	1.55	280	510
315	390	30×30	1.56	280	510
315	390	35×25	1.57	280	510
315	470	25×45	1.73	230	420
315	470	30×35	1.8	230	420
315	470	35×25	1.83	230	420
315	560	25×50	1.94	200	360
315	560	30×40	1.95	200	360
315	560	35×30	2.03	200	360
315	680	30×45	2.25	160	290
315	680	35×35	2.26	160	290
315	820	30×50	2.58	130	240
315	820	35×40	2.58	130	240
315	1000	35×45	2.87	110	200
315	1000	35×50	2.88	110	200
315	1200	35×45	2.92	94	170
315	1200	35×50	2.95	94	170
350	82	22×25	0.52	1350	2430
350	100	22×25	0.55	1110	1990
350	120	22×30	0.77	920	1660
350	150	22×30	0.82	740	1330
350	180	22×30	0.9	620	1110
350	180	25×30	0.97	620	1110
350	220	22×35	1.08	500	900
350	220	25×30	1.09	500	900
350	270	22×40	1.22	410	740
350	270	25×35	1.26	410	740
350	270	30×30	1.27	410	740
350	330	22×45	1.29	330	600
350	330	25×40	1.32	330	600
350	330	30×30	1.32	330	600
350	390	25×45	1.56	280	510
350	390	30×35	1.57	280	510
350	390	35×30	1.56	280	510
350	470	25×45	1.74	230	420
350	470	30×40	1.81	230	420
350	470	35×35	1.84	230	420
350	560	30×45	1.96	200	360
350	560	35×40	2.04	200	360
350	680	30×45	2.26	160	290
350	680	35×40	2.27	160	290
350	680	40×35	2.28	160	290
350	820	30×50	2.27	130	240
350	820	35×45	2.59	130	240
350	1000	35×50	2.89	110	200
350	1000	40×45	2.9	110	200
350	1200	35×50	2.87	94	170
350	1200	40×45	2.87	94	170
400	56	22×20	0.46	1970	3550
400	68	22×20	0.51	1630	2930
400	82	22×25	0.64	1350	2430
400	82	25×25	0.69	1350	2430
400	100	22×25	0.69	1110	1990

CapXon

HP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	100	25×25	0.75	1110	1990
400	120	22×25	0.78	920	1660
400	120	22×30	0.83	920	1660
400	120	25×25	0.83	920	1660
400	150	22×30	0.86	740	1330
400	150	25×25	0.86	740	1330
400	150	25×30	0.9	740	1330
400	150	30×25	0.89	740	1330
400	180	22×35	1	620	1110
400	180	25×30	1.05	620	1110
400	180	30×25	1.07	620	1110
400	220	22×40	1.09	500	900
400	220	25×30	1.1	500	900
400	220	30×25	1.1	500	900
400	220	30×30	1.16	500	900
400	270	25×35	1.26	410	740
400	270	30×30	1.28	410	740
400	330	22×45	1.46	330	600
400	330	25×40	1.48	330	600
400	330	30×35	1.52	330	600
400	330	35×30	1.52	330	600
400	390	25×45	1.69	280	510
400	390	30×40	1.72	280	510
400	390	35×35	1.74	280	510
400	470	25×50	1.84	230	420
400	470	30×40	1.92	230	420
400	470	35×35	1.95	230	420
400	560	30×45	2.32	200	360
400	560	35×40	2.33	200	360
400	680	30×50	2.68	160	290
400	680	35×45	2.75	160	290
400	820	35×45	2.92	130	240
400	820	35×50	2.97	130	240
400	1000	35×50	3.15	110	200
400	1200	35×60	3.29	94	170
400	1200	40×50	3.29	94	170
420	68	22×25	0.53	2170	3900
420	82	22×25	0.65	1790	3230
420	82	25×25	0.7	1790	3230
420	100	22×25	0.71	1470	2650
420	100	22×30	0.75	1470	2650
420	100	25×25	0.75	1470	2650
420	120	22×25	0.79	1230	2210
420	120	22×30	0.83	1230	2210
420	120	25×25	0.84	1230	2210
420	120	25×30	0.89	1230	2210
420	150	22×30	0.87	980	1770
420	150	22×35	0.93	980	1770
420	150	25×30	0.93	980	1770
420	150	30×25	0.93	980	1770
420	180	22×35	0.96	820	1470
420	180	22×40	1.02	820	1470
420	180	25×30	1.02	820	1470
420	180	30×25	1	820	1470
420	220	22×40	1.13	670	1210
420	220	22×45	1.19	670	1210
420	220	25×35	1.15	670	1210
420	220	30×25	1.16	670	1210
420	220	30×30	1.21	670	1210
420	220	35×25	1.23	670	1210

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
420	270	22×50	1.27	540	980
420	270	25×40	1.26	540	980
420	270	30×30	1.28	540	980
420	270	35×25	1.3	540	980
420	330	22×50	1.41	440	800
420	330	25×45	1.49	440	800
420	330	30×35	1.49	440	800
420	330	30×40	1.54	440	800
420	330	35×30	1.54	440	800
420	330	35×35	1.67	440	800
420	390	22×55	1.62	380	680
420	390	25×50	1.7	380	680
420	390	30×40	1.72	380	680
420	390	35×35	1.75	380	680
420	470	25×50	1.85	310	560
420	470	30×45	1.9	310	560
420	470	35×35	1.9	310	560
420	470	35×40	1.97	310	560
420	560	30×50	2.23	260	470
420	560	35×40	2.24	260	470
420	560	35×45	2.32	260	470
420	680	35×45	2.76	220	390
420	680	35×50	2.77	220	390
420	820	35×55	2.98	180	320
420	1000	35×60	3.15	150	270
420	1000	40×50	3.25	150	270
450	68	22×25	0.53	2170	3900
450	82	22×25	0.66	1790	3230
450	82	22×30	0.71	1790	3230
450	82	25×25	0.71	1790	3230
450	100	22×25	0.72	1470	2650
450	100	22×30	0.75	1470	2650
450	100	25×25	0.75	1470	2650
450	100	25×30	0.82	1470	2650
450	100	30×25	0.83	1470	2650
450	120	22×30	0.82	1230	2210
450	120	22×35	0.86	1230	2210
450	120	25×25	0.82	1230	2210
450	120	25×30	0.86	1230	2210
450	120	30×25	0.86	1230	2210
450	120	35×25	0.95	1230	2210
450	150	22×30	0.91	980	1770
450	150	22×35	0.93	980	1770
450	150	22×40	0.95	980	1770
450	150	25×30	0.94	980	1770
450	150	25×35	0.97	980	1770
450	150	30×25	0.98	980	1770
450	150	30×30	1.06	980	1770
450	150	35×25	1.08	980	1770
450	180	22×35	1.02	820	1470
450	180	22×40	1.05	820	1470
450	180	25×30	1.05	820	1470
450	180	25×35	1.1	820	1470
450	180	30×25	1.1	820	1470
450	180	30×30	1.19	820	1470
450	180	35×25	1.2	820	1470
450	180	35×30	1.28	820	1470
450	220	22×40	1.12	670	1210
450	220	22×45	1.2	670	1210
450	220	25×35	1.2	670	1210

CapXon

HP series

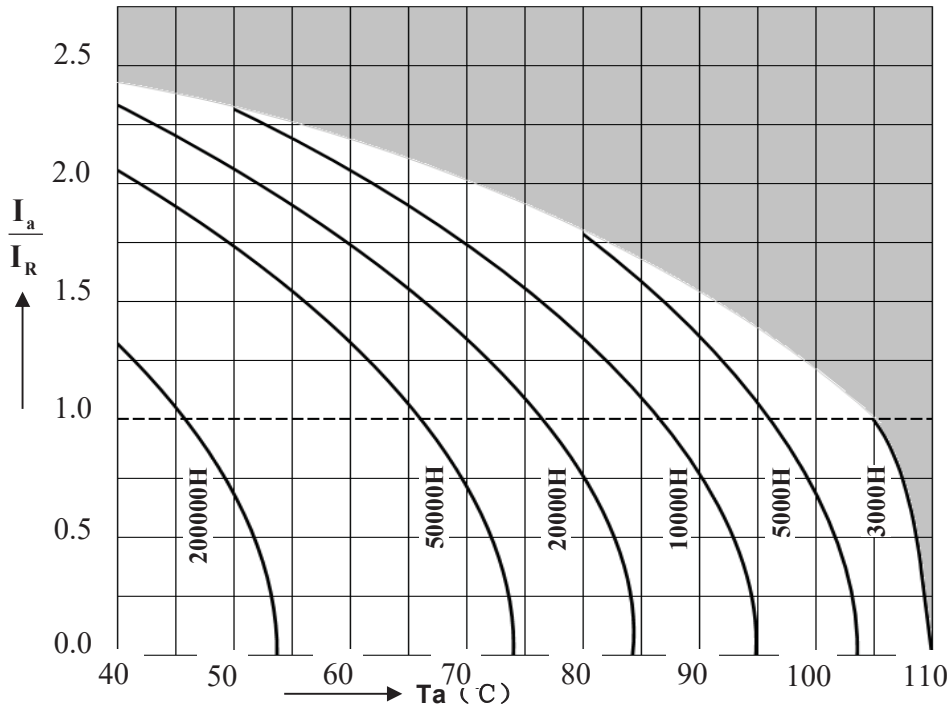
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	220	25×40	1.25	670	1210
450	220	30×25	1.17	670	1210
450	220	30×30	1.25	670	1210
450	220	35×25	1.24	670	1210
450	220	35×30	1.33	670	1210
450	270	22×50	1.3	540	980
450	270	25×40	1.3	540	980
450	270	30×30	1.29	540	980
450	270	30×35	1.42	540	980
450	270	35×25	1.35	540	980
450	270	35×30	1.42	540	980
450	330	25×50	1.68	440	800
450	330	30×35	1.54	440	800
450	330	30×40	1.69	440	800
450	330	35×30	1.7	440	800
450	330	35×35	1.87	440	800
450	390	25×50	1.71	380	680
450	390	30×40	1.69	380	680
450	390	30×45	1.9	380	680
450	390	35×35	1.91	380	680
450	390	35×40	2.07	380	680
450	470	30×45	1.94	310	560
450	470	30×50	2.23	310	560
450	470	35×35	1.97	310	560
450	470	35×40	2.1	310	560
450	470	35×45	2.5	310	560
450	560	30×50	2.44	260	470
450	560	35×40	2.4	260	470
450	560	35×45	2.5	260	470
450	560	35×50	2.79	260	470
450	680	35×45	2.77	220	390
450	680	35×50	2.9	220	390
450	820	35×55	3.08	180	320
450	820	35×60	3.22	180	320
450	1000	35×65	3.31	150	270
450	1000	40×60	3.4	150	270
450	1200	35×80	3.62	120	220
450	1200	40×70	3.67	120	220
500	47	22×25	0.42	3130	5640
500	56	22×30	0.5	2630	4740
500	56	25×25	0.51	2630	4740
500	68	22×30	0.55	2170	3900
500	68	25×25	0.55	2170	3900
500	82	22×35	0.73	1790	3230
500	82	25×30	0.75	1790	3230
500	82	30×25	0.76	1790	3230
500	100	22×40	0.9	1470	2650
500	100	22×45	0.94	1470	2650
500	100	25×35	0.92	1470	2650
500	100	30×25	0.93	1470	2650
500	100	30×30	0.96	1470	2650
500	120	22×50	0.94	1230	2210
500	120	25×35	0.93	1230	2210
500	120	25×40	0.94	1230	2210
500	120	30×30	0.94	1230	2210
500	120	35×25	0.94	1230	2210
500	150	22×50	1.1	980	1770
500	150	25×40	1.1	980	1770
500	150	30×35	1.13	980	1770
500	150	35×25	1	980	1770

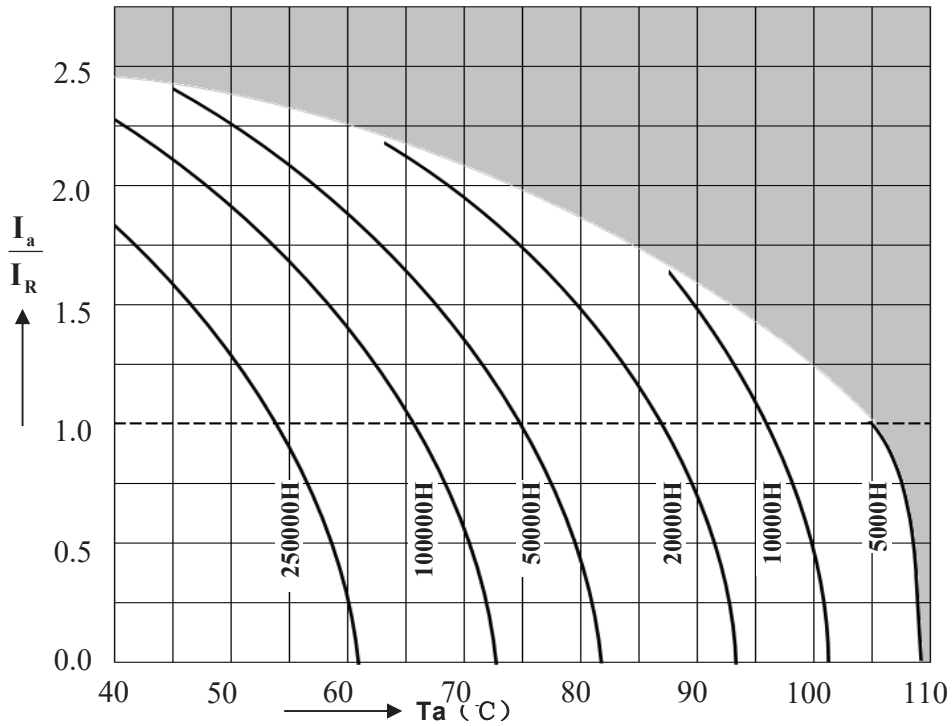
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	150	35×30	1.14	980	1770
500	180	25×50	1.39	820	1470
500	180	30×35	1.31	820	1470
500	180	30×40	1.4	820	1470
500	180	35×30	1.41	820	1470
500	220	25×55	1.62	670	1210
500	220	30×40	1.59	670	1210
500	220	30×45	1.63	670	1210
500	220	35×35	1.65	670	1210
500	270	30×50	1.75	540	980
500	270	35×40	1.76	540	980
500	330	30×55	2.03	440	800
500	330	35×45	2.05	440	800
500	390	35×50	2.47	380	680
500	470	35×55	2.63	310	560
500	680	35×65	3.19	220	390
500	820	35×75	3.85	180	320
500	820	40×65	3.85	180	320
500	1000	40×80	4.7	150	270
550	47	25×25	0.48	3130	5640
550	56	25×30	0.55	2630	4740
550	68	25×35	0.63	2170	3900
550	68	30×25	0.65	2170	3900
550	82	25×35	0.76	1790	3230
550	82	30×30	0.77	1790	3230
550	100	25×40	0.93	1470	2650
550	100	30×35	0.94	1470	2650
550	100	35×25	0.93	1470	2650
550	120	25×50	0.96	1230	2210
550	120	30×35	0.98	1230	2210
550	120	35×30	1.06	1230	2210
550	150	25×55	1.13	980	1770
550	150	30×45	1.18	980	1770
550	150	35×35	1.22	980	1770
550	180	30×50	1.35	820	1470
550	180	35×40	1.38	820	1470
550	220	30×55	1.56	670	1210
550	220	35×45	1.58	670	1210
550	270	35×50	1.8	540	980

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions $V_R \leqslant 100V$



depending on ambient temperature Ta versus under ripple current operating conditions $V_R \geqslant 160V$



HS Series Snap-in Type 105℃ Miniaturized

Features

- ◆ Highly reliable capacitors that withstand ripple current.
- ◆ Terminal spacing fixed at 10 mm for printed circuit doard plug in.
- ◆ Aluminum case designed explosion-proof vent.
- ◆ Best for switching power supplies.
- ◆ RoHS Compliant

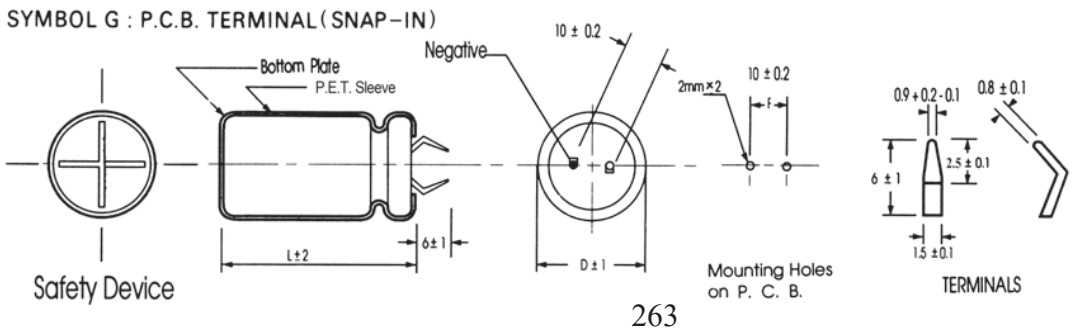
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Rated Voltage Range	160 to 450 V・DC
Capacitance Range	33 to 2700 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I ≦ 0.02CV After 5 minutes with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	Less than the value under table (%) μF＼VDC: 160~250: 15; 315~450: 20 47~390: 15; 20 470~2700: 15; 20
Low Temperature Characteristics (at 120Hz)	Impedance ratio Max Working voltage (VDC): 160; 200~250; 400~450 Z -25℃／Z +20℃: 4; 4; 8
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Snap-in

Case Size

ϕ DxL(mm)

WV / Cap (μF) / ϕ D	160								200							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
100									22x20	0.38						
150	22x20	0.37							22x20	0.54	25x20	0.54				
220	22x20	0.65							22x25	0.92	25x20	0.92	30x20	0.92		
270	22x20	0.74							22x25	1.03	25x20	1.03	30x20	1.03		
330	22x25	0.98	25x20	0.98	30x20	0.98			22x30	1.21	25x25	1.21	30x20	1.21		
									22x25	1.10	25x20	1.10				
390	22x25	1.10	25x25	1.10	30x20	1.10			22x30	1.39	25x25	1.39	30x25	1.39		
			25x20	1.00									30x20	1.27		
470	22x30	1.21	25x25	1.21	30x20	1.21			22x35	1.45	25x30	1.45	30x25	1.45	35x20	1.45
									22x30	1.35	25x25	1.35				
560	22x35	1.40	25x30	1.40	30x25	1.40			22x40	1.60	25x35	1.60	30x25	1.60	35x20	1.60
	22x30	1.30	25x25	1.30					22x35	1.50	25x30	1.50				
680	22x40	1.64	25x30	1.64	30x25	1.64	35x25	1.64	22x45	1.80	25x35	1.80	30x30	1.80	35x25	1.80
	22x35	1.53							22x40	1.70						
820			25x35	1.85	30x30	1.85	35x25	1.85	22x45	1.79	25x40	2.00	30x30	2.00	35x30	2.00
	22x50	1.70							22x50	1.88	25x35	1.88			35x25	1.88
1000			25x45	2.15	30x30	2.15	35x25	2.15			25x50	2.30	30x35	2.30	35x30	2.30
	22x55	2.03	25x40	2.03							25x45	2.20				
1200			25x50	2.46	30x40	2.46	35x30	2.46					30x40	2.70	35x35	2.70
1500					30x45	2.46	35x35	2.46					30x50	3.10	35x40	3.10
1800					30x50	3.13	35x40	3.13					30x70	3.75	35x45	3.75
2200					30x70	3.39	35x45	3.39							35x55	3.82
2700							35x50	3.90							35x70	4.00

WV / Cap (μF) / ϕ D	220								250							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
68									22x20	0.27						
82									22x20	0.34						
100									22x20	0.44	25x20	0.44				
120									22x25	0.48	25x20	0.48				
150	22x20	0.57							22x25	0.60	25x20	0.60	30x20	0.60		
180	22x25	0.61	25x25	0.61					22x25	0.69	25x25	0.69	30x20	0.69		
			25x20	0.55							25x20	0.63				
220	22x25	0.81	25x25	0.81					22x30	1.00	25x25	1.00	30x20	1.00		
									22x25	0.92	25x20	0.92				
270	22x30	1.01	25x25	1.01	30x25	1.01			22x35	1.16	25x30	1.16	30x25	1.16		
	22x25	0.93			30x20	0.93			22x30	1.05	25x25	1.05	30x20	1.05		
330	22x30	1.09	25x25	1.09	30x25	1.09			22x40	1.28	25x30	1.28	30x25	1.28		
									22x35	1.20	25x25	1.20				
390	22x35	1.18	25x30	1.18	30x25	1.18			22x40	1.48	25x30	1.48	30x30	1.48		
			25x25	1.08					22x35	1.38			30x25	1.38		
470	22x40	1.28	25x35	1.28	30x25	1.28			22x45	1.65	25x35	1.65	30x30	1.65	35x25	1.65
	22x35	1.2	25x30	1.2					22x40	1.55						
560	22x45	1.52	25x40	1.52	30x30	1.52	35x25	1.52			25x45	1.85	30x35	1.85	35x25	1.85
	22x40	1.4	25x35	1.4	30x25	1.4			22x50	1.75	25x40	1.75	30x30	1.75		
680	22x50	1.66	25x45	1.66	30x35	1.66	35x25	1.66					30x40	2.00	35x30	2.00
	22x45	1.56	25x40	1.56	30x30	1.56					25x50	1.85				
820			25x50	1.9	30x40	1.9	35x30	1.9					30x45	2.30	35x35	2.30
			25x45	1.8	30x35	1.8										
1000					30x45	2.28	35x35	2.28					30x55	2.50	35x40	2.60
			25x55	2.15	30x40	2.15							30x61	2.60		
1200					30x50	2.32	35x40	2.32							35x45	2.85
1500					30x70	2.35	35x45	2.35							35x60	2.92
1800							35x50	2.40							35x70	2.95
2200							35x60	2.45								

Ripple Current (A, rms) at 105℃ 120Hz

ϕ DxL(mm)

WV / Cap (μF) / ϕ D	350								400							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
33									22x20	0.39						
47									22x20	0.56	25x20	0.56				
56									22x20	0.60	25x20	0.60				
68	22x20	0.45							22x20	0.62	25x20	0.65				
									22x25	0.65						
82	22x25	0.53							22x25	0.75	25x25	0.75				
											25x20	0.71				
100	22x25	0.65							22x30	0.78	25x25	0.78	30x20	0.78		
									22x25	0.72						
120	22x30	0.74	25x25	0.74					22x30	0.85	25x25	0.85	30x20	0.85		
	22x25	0.68							22x25	0.79						
150	22x35	0.80	25x30	0.80					22x35	0.98	25x30	0.98	30x25	0.98		
	22x30	0.74	25x25	0.74					22x30	0.91	25x25	0.91				
180	22x40	0.95	25x30	0.95	30x25	0.95			22x40	1.14	25x35	1.14	30x30	1.14	35x25	1.14
	22x35	0.89	25x25	0.89					22x35	1.05	25x30	1.05	30x25	1.05		
220	22x45	1.10	25x35	1.10	30x30	1.10			22x50	1.21	25x40	1.21	30x35	1.21	35x25	1.21
	22x40	1.00	25x30	1.00	30x25	1.00			22x45	1.1	25x35	1.10	30x30	1.10		
									22x40	1.05	25x30	1.05				
270	22x50	1.20	25x40	1.20	30x30	1.20	35x25	1.20	22x50	1.40	25x45	1.40	30x40	1.40	35x30	1.40
	22x45	1.10	25x35	1.10	30x25	1.10			22x45	1.30	25x40	1.30	30x35	1.30	35x25	1.30
330			25x45	1.30	30x35	1.30	35x30	1.30					30x40	1.57	35x35	1.57
	22x50	1.20	25x40	1.20	30x30	1.20	35x25	1.20	22x50	1.40	25x45	1.40	30x35	1.40	35x30	1.40
390					30x40	1.45	35x35	1.45							35x35	1.74
	22x55	1.30	25x45	1.30	30x35	1.30	35x30	1.30	22x55	1.60	25x50	1.60	30x40	1.60	35x30	1.60
470					30x45	1.70	35x35	1.70							35x40	1.98
			25x50	1.60	30x40	1.60	35x30	1.60					30x45	1.80	35x35	1.80
560					30x45	1.70	35x40	1.85					30x55	2.23	35x45	2.23
							35x35	1.70					30x50	2.14	35x40	2.10
													30x45	2.10		
680							35x45	1.98							35x50	2.40
							35x40	1.80								
820							35x50	1.82							35x55	2.42
1000							35x60	1.84							35x70	2.45

WV / Cap (μF) / ϕ D	420								450							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
33	22x20	0.34							22x20	0.24						
47	22x20	0.45	25x20	0.45					22x25	0.35	25x20	0.35				
									22x20	0.32						
56	22x20	0.5	25x20	0.5	30x20	0.5			22x25	0.41	25x20	0.41				
68	22x25	0.58	25x20	0.58	30x20	0.58			22x30	0.55	25x25	0.55	30x20	0.55		
									22x25	0.51	25x20	0.51				
82	22x25	0.68	25x25	0.68	30x20	0.68			22x30	0.64	25x25	0.64	30x20	0.64		
			25x20	0.62												
100	22x30	0.75	25x30	0.75	30x25	0.75			22x35	0.74	25x25	0.74	30x25	0.74		
			25x25	0.69	30x20	0.69			22x30	0.69			30x20	0.69		
120	22x35	0.83	25x30	0.83	30x25	0.83			22x40	0.82	25x30	0.82	30x25	0.82		
	22x30	0.77	25x25	0.77	30x20	0.77			22x35	0.77	25x25	0.77				
150	22x40	0.97	25x35	0.97	30x25	0.97			22x45	0.96	25x35	0.96	30x30	0.96		
	22x35	0.91	25x30	0.91					22x40	0.91	25x30	0.91	30x25	0.91		
									22x35	0.86						
180			25x40	1.08	30x30	1.08			22x45	0.99	25x40	1.05	30x30	1.05	35x25	1.05
	22x40	1.02	25x35	1.02	30x25	1.02			22x40	0.94	25x35	0.99	30x25	0.99		
											25x30	0.93				
220	22x50	1.18	25x45	1.18	30x35	1.18	35x25	1.18	22x50	1.15			30x35	1.15	35x30	1.15
			25x40	1.10	30x30	1.10			22x45	1.08	25x40	1.08	30x30	1.08	35x25	1.08
270			25x45	1.30	30x40	1.42	35x30	1.42					30x45	1.48	35x35	1.48
			25x40	1.24	30x35	1.30					25x45	1.38	30x40	1.38	35x30	1.38
													30x35	1.31		
330			25x50	1.45	30x45	1.56	35x35	1.56					30x45	1.45	35x40	1.55
			25x45	1.39	30x40	1.45	35x30	1.45					30x40	1.38	35x35	1.45
390					30x45	1.65	35x40	1.76							35x45	1.75
							35x35	1.65							35x40	1.65
470					30x50	1.68	35x45	1.78					30x50	1.68	35x50	1.85
					30x45	1.61	35x40	1.68							35x45	1.75
560					30x50	1.64	35x50	1.80							35x50	1.86
							35x45	1.72								
680							35x55	1.82							35x60	1.85
820							35x60	1.84							35x70	1.87

Ripple Current (A, rms) at 105℃ 120Hz

HW Series Snap-in Type 105℃ 15mm Height

Features

HS **Low Profile** HW

- ◆ Endurance 2000 hours 105℃ with hight 15mm
- ◆ ROHS compliant

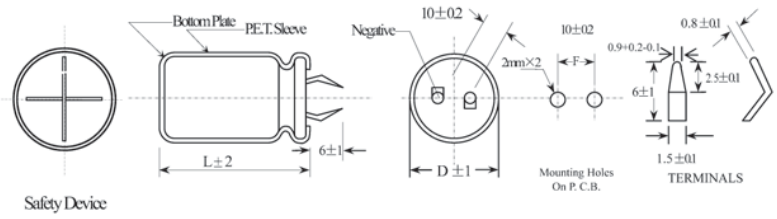
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Capacitance Range	39 to 390uF
Rated Voltage Range	160 to 400VDC
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦3 $\sqrt{CV}$ (μA) (After 5 minute with rated working voltage applied.) I= Leakage Current(μA) C= Rated Capacitance V= Rated voltage(V)
Dissipation Factor (tan δ) (+20℃, at 120Hz)	Cap(μF)) / W.V.(V) | 160~250 | 315~450 D.F. | 20% | 20%
Low Temperature Characteristics (120Hz)	Impedance ratio max Rated voltage | 160~250 | 315~450 Z-25℃/Z+20℃ | 4 | 8
Endurance	Test condition Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change : ≦±20% of the initial measured value Dissipation factor : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	Test condition Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP (μF) \ Hz	50(60)	120	1K	10K	50K-100K
10<CAP≦100	0.8	1	1.36	1.48	1.53
100<CAP≦1000	0.8	1	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Snap-in

Case Size

ϕ DxL(mm)

WV (V) / Cap(uF)	160		180		200		250		315		400	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
39											22x15	0.30
47											25x15	0.35
56									22x15	0.35	30x15	0.40
68									25x15	0.4	30x15	0.45
82									30x15	0.45	35x15	0.50
100					20x15	0.45	22x15	0.50	30x15	0.5	35x15	0.55
120			20x15	0.50	22x15	0.55	25x15	0.60	35x15	0.55		
150	20x15	0.55	22x15	0.60	25x15	0.65	30x15	0.70	35x15	0.6		
180	22x15	0.65	25x15	0.75	25x15	0.75	30x15	0.75				
					30x15	0.80						
220	25x15	0.80	30x15	0.85	30x15	0.90	35x15	0.90				
270	30x15	0.95	30x15	1.00	30x15	1.00	35x15	1.00				
330	30x15	1.00	35x15	1.10	35x15	1.10						
390	35x15	1.20	35x15	1.20								

Ripple Current(A rms) at 105℃ /120Hz

CapXon

HU series

HU Series 105℃

Features

Standard capacitors

Applications

- Switch-mode power supplies in industrial and entertainmentelectronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Specifications

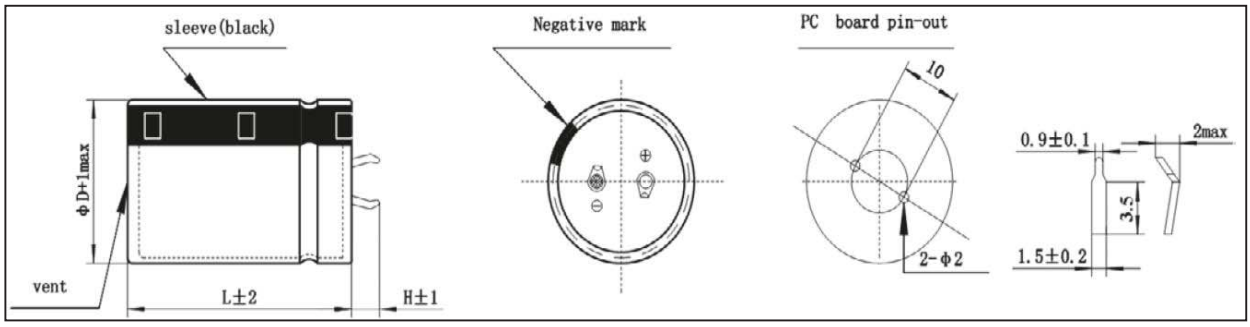
Item	Performance Characteristics											
Operating Temperature Range	-40 to +105℃						-25 to +105℃					
Rated voltage V_R	10 to 450 V DC						500 to 550 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	39 to 82000 μF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	$3\sqrt{CV}$ (μA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	μF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	-	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											
Useful life 105 °C; V_R,$I_{AC,R}$ 105 °C; V_R,$I_{AC,R}$	V_R≤100V:	Requirements:										
		V_R≤100V							V_R>100V			
>5000 h		DC/C	≤±30% of initial value						DC/C	≤ ±20% of initial value		
		ESR	≤3 times initial specified limit						ESR	≤ 2 times initial specified limit		
VR>100V:		I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
>8000 h		Failure rate :≤1%/1000 hour							Failure rate :≤1%/1000 hour			
Voltage Endurance test 105 °C; V_R	3000 h	Post test requirements:										
		V_R≤100V							V_R>100V			
		DC/C	≤ ±15% of initial value						DC/C	≤ ±10% of initial value		
		ESR	≤ 1.3 times initial specified limit						ESR	≤ 1.3 times initial specified limit		
		I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
Shelf Life 105 °C	1000 h	Post test requirements:										
		V_R≤100V							V_R>100V			
		DC/C	≤ ±15% of initial value						DC/C	≤ ±10% of initial value		
		ESR	≤ 1.3 times initial specified limit						ESR	≤ 1.3 times initial specified limit		
		I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
Vibration Resistance test	To IEC 60068-2-6, test Fc:											
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.											
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz											
	V_R(V)	6.3~16	25	35	50~100	160~250	315~450	500~600				
	$Z_{-25℃}$ / $Z_{20℃}$	4	3	3	3	3	8	8				
	$Z_{-40℃}$ / $Z_{20℃}$	15	10	8	6	7	10	-				
Sectional specification	IEC 60384-4 and JIS-C-5101											

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

HU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	4700	22×25	0.86	76	99
10	6800	22×25	1.31	53	68
10	8200	25×20	1.6	44	57
10	10000	25×20	1.81	36	46
10	12000	22×30	2.11	34	44
10	15000	22×35	2.31	27	35
10	18000	22×40	2.4	23	29
10	22000	25×35	2.6	19	24
10	27000	35×25	3.11	19	25
10	33000	35×30	3.42	15	20
10	39000	35×30	3.7	13	17
10	47000	35×35	4.21	11	14
10	56000	35×40	5.1	9	12
10	68000	35×50	5.51	8	10
16	3300	22×25	1.3	110	140
16	4700	22×25	1.52	76	99
16	6800	22×25	1.81	53	68
16	8200	22×30	2.05	44	57
16	10000	22×30	2.15	36	46
16	10000	25×25	2.2	36	46
16	12000	22×35	2.31	34	44
16	12000	25×30	2.32	34	44
16	12000	30×25	2.4	34	44
16	15000	22×40	2.7	27	35
16	15000	25×35	2.71	27	35
16	15000	30×30	2.73	27	35
16	18000	22×45	2.98	23	29
16	18000	25×40	3.17	23	29
16	18000	30×30	3.2	23	29
16	22000	25×45	3.41	19	24
16	22000	30×35	3.42	19	24
16	22000	35×30	3.43	19	24
16	27000	25×50	3.85	15	20
16	27000	30×40	3.86	15	20
16	27000	35×30	3.87	15	20
16	33000	30×45	4.4	12	16
16	33000	35×35	4.42	12	16
16	39000	30×50	4.82	10	14
16	39000	35×40	4.83	10	14
16	47000	35×45	5.54	9	11
16	56000	35×50	5.9	7	10
16	68000	35×60	6.6	6	8
16	82000	40×60	7.66	5	7
25	2200	22×25	1.3	140	180
25	3300	22×25	1.31	92	120
25	4700	22×25	1.62	65	85
25	5600	22×30	1.8	55	71
25	6800	25×25	1.92	45	59
25	8200	22×35	2.15	37	49
25	8200	30×25	2.3	37	49
25	10000	22×40	2.5	31	40
25	10000	25×30	2.5	31	40
25	10000	30×30	2.68	31	40
25	12000	22×45	2.76	30	39
25	12000	25×40	2.81	30	39
25	12000	30×30	2.82	30	39
25	15000	25×45	3.28	24	31
25	15000	30×35	3.29	24	31
25	15000	35×30	3.3	24	31
25	18000	25×50	3.55	20	26
25	18000	30×40	3.56	20	26
25	22000	30×45	4.25	16	21
25	22000	35×35	4.26	16	21
25	27000	35×45	4.76	13	17
25	33000	35×50	5.5	11	14
35	2200	25×25	1.52	120	150
35	3300	22×25	1.53	77	100
35	3900	22×30	1.7	65	85
35	4700	22×35	2.03	54	71
35	4700	25×25	2.04	54	71
35	5600	22×35	2.13	46	59
35	5600	25×30	2.14	46	59
35	5600	30×25	2.15	46	59
35	6800	22×40	2.6	38	49
35	6800	25×35	2.6	38	49
35	6800	30×25	2.55	38	49
35	8200	22×50	2.85	31	40
35	8200	25×40	2.86	31	40
35	8200	30×30	2.87	31	40
35	10000	25×45	3.07	26	33
35	10000	30×35	3.08	26	33
35	12000	25×50	3.37	26	33
35	12000	30×40	3.38	26	33
35	12000	35×30	3.4	26	33
35	15000	30×45	3.75	20	27
35	15000	35×35	3.76	20	27
35	18000	35×40	4.37	17	22
35	22000	35×50	4.95	14	18
50	1500	25×20	1.15	140	180
50	1800	22×25	1.35	120	150
50	2200	22×25	1.55	92	120
50	2700	22×30	1.75	76	98
50	2700	25×25	1.76	76	98
50	3300	22×35	1.99	62	80
50	3300	25×30	2	62	80
50	3900	22×40	2.25	52	68
50	3900	30×25	2.26	52	68
50	4700	22×45	2.56	43	56
50	4700	25×35	2.62	43	56
50	4700	30×30	2.63	43	56
50	5600	22×50	2.89	36	47
50	5600	25×40	2.9	36	47
50	5600	30×30	2.95	36	47
50	6800	25×45	3.37	30	39
50	6800	30×35	3.39	30	39
50	6800	35×32	3.4	30	39
50	8200	30×40	3.71	25	32
50	8200	35×35	3.72	25	32
50	10000	30×50	4.09	20	27
50	10000	35×40	4.1	20	27
50	12000	35×45	4.56	26	33
50	15000	35×50	4.77	20	27
63	1000	22×25	1.17	210	270
63	1200	22×25	1.25	170	220
63	1500	22×30	1.48	140	180
63	1500	25×25	1.5	140	180
63	1800	22×30	1.59	120	150
63	1800	25×25	1.6	120	150
63	2200	22×35	1.83	92	120
63	2200	25×30	1.84	92	120

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HU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	2700	22×40	2.05	76	98
63	2700	25×35	2.05	76	98
63	2700	30×25	2.03	76	98
63	3300	22×45	2.33	62	80
63	3300	30×30	2.4	62	80
63	3900	25×40	2.54	52	68
63	3900	30×35	2.57	52	68
63	4700	25×50	2.98	43	56
63	4700	30×40	3.02	43	56
63	4700	35×30	3.05	43	56
63	5600	30×40	3.28	36	47
63	5600	35×35	3.31	36	47
63	6800	30×50	3.73	30	39
63	6800	35×40	3.75	30	39
63	8200	35×45	4.2	25	32
63	10000	35×50	4.7	20	27
80	680	22×25	1	220	290
80	820	22×25	1.15	180	240
80	1000	22×25	1.29	150	200
80	1200	22×30	1.63	130	170
80	1200	25×25	1.65	130	170
80	1500	22×30	1.75	100	130
80	1500	25×25	1.76	100	130
80	1800	22×35	1.83	85	110
80	1800	25×30	1.86	85	110
80	1800	30×25	1.87	85	110
80	2200	22×40	2.09	70	90
80	2200	25×35	2.1	70	90
80	2200	30×25	2.11	70	90
80	2700	25×40	2.43	57	74
80	2700	30×30	2.44	57	74
80	3300	25×45	2.76	46	60
80	3300	30×35	2.79	46	60
80	3300	35×30	2.8	46	60
80	3900	25×50	3.09	39	51
80	3900	30×40	3.12	39	51
80	3900	35×30	3.13	39	51
80	4700	30×45	3.52	33	42
80	4700	35×35	3.53	33	42
80	5600	30×50	3.8	27	36
80	5600	35×40	3.87	27	36
80	6800	35×45	4.19	23	29
100	330	22×20	0.8	460	600
100	470	22×25	0.92	320	420
100	470	25×20	1	320	420
100	560	22×25	1.1	280	360
100	680	22×30	1.22	220	290
100	680	25×25	1.24	220	290
100	820	22×30	1.88	180	240
100	820	25×25	1.96	180	240
100	1000	22×30	1.93	150	200
100	1000	25×25	1.92	150	200
100	1200	22×40	2.08	130	170
100	1200	25×30	2.08	130	170
100	1200	30×25	2.08	130	170
100	1500	22×45	2.15	100	130
100	1500	25×35	2.15	100	130
100	1500	30×30	2.15	100	130
100	1500	35×25	2.15	100	130
100	1800	25×40	2.37	85	110

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	1800	30×35	2.37	85	110
100	2200	25×50	2.65	70	90
100	2200	30×35	2.61	70	90
100	2200	35×30	2.75	70	90
100	2700	25×50	2.76	57	74
100	2700	30×45	2.96	57	74
100	2700	35×35	2.96	57	74
100	3300	30×50	3.34	46	60
100	3300	35×40	3.34	46	60
100	3900	35×45	3.69	39	51
100	4700	35×50	4.15	33	42
160	220	20×25	0.81	470	900
160	220	22×20	0.78	470	900
160	270	22×25	1.01	390	740
160	270	25×20	1.01	390	740
160	330	22×25	1.17	320	600
160	330	25×20	1.17	320	600
160	390	22×30	1.43	270	510
160	390	25×25	1.43	270	510
160	470	22×30	1.52	220	420
160	470	25×25	1.52	220	420
160	470	30×20	1.53	220	420
160	680	22×40	1.53	150	290
160	680	25×30	1.53	150	290
160	680	30×25	1.53	150	290
160	680	35×20	1.56	150	290
160	820	22×45	1.96	130	240
160	820	25×35	1.96	130	240
160	820	30×30	1.96	130	240
160	820	35×25	1.96	130	240
160	1000	25×40	2.23	110	200
160	1200	25×45	2.4	89	170
160	1200	30×35	2.4	89	170
160	1200	35×30	2.4	89	170
160	1500	25×50	2.6	68	130
160	1500	30×40	2.6	68	130
160	1500	35×30	2.6	68	130
160	1800	30×45	2.82	58	110
160	1800	35×35	2.82	58	110
160	2200	30×50	3.32	48	90
160	2200	35×45	3.5	48	90
160	2700	35×50	3.78	39	74
160	3300	35×55	3.86	32	60
180	180	22×20	0.76	580	1110
180	220	25×20	0.9	470	900
180	270	22×25	1.02	390	740
180	270	25×20	1.03	390	740
180	330	20×30	1.2	320	600
180	330	22×25	1.2	320	600
180	330	25×20	1.22	320	600
180	390	22×30	1.32	270	510
180	390	25×25	1.35	270	510
180	390	30×20	1.35	270	510
180	470	22×35	1.53	220	420
180	470	25×30	1.54	220	420
180	470	30×25	1.55	220	420
180	560	22×40	1.67	190	360
180	560	25×30	1.67	190	360
180	560	30×25	1.67	190	360
180	560	35×20	1.67	190	360

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HU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
180	680	22×45	1.78	150	290
180	680	25×35	1.78	150	290
180	680	30×30	1.78	150	290
180	680	35×25	1.78	150	290
180	820	22×50	2.09	130	240
180	820	25×40	2.09	130	240
180	820	30×30	2.09	130	240
180	820	35×25	2.09	130	240
180	1000	22×50	2.15	110	200
180	1000	25×45	2.15	110	200
180	1000	30×35	2.15	110	200
180	1000	35×30	2.15	110	200
180	1200	22×60	2.22	89	170
180	1200	25×50	2.22	89	170
180	1200	30×40	2.22	89	170
180	1200	35×30	2.22	89	170
180	1500	25×50	2.24	68	130
180	1500	30×45	2.24	68	130
180	1500	35×35	2.24	68	130
180	1800	30×50	2.88	58	110
180	1800	35×35	2.88	58	110
180	1800	35×40	2.94	58	110
180	2200	30×55	3.12	48	90
180	2200	35×45	3.12	48	90
180	2200	35×50	3.23	48	90
180	2200	35×55	3.32	48	90
180	2700	35×50	3.81	39	74
200	150	20×20	0.74	700	1330
200	180	22×20	0.76	580	1110
200	220	20×25	1.01	470	900
200	220	22×25	1.05	470	900
200	220	25×20	1.06	470	900
200	270	20×25	1.07	390	740
200	270	22×25	1.11	390	740
200	330	20×30	1.21	320	600
200	330	22×30	1.26	320	600
200	330	25×25	1.27	320	600
200	390	20×35	1.35	270	510
200	390	22×25	1.35	270	510
200	390	22×30	1.36	270	510
200	390	25×25	1.37	270	510
200	470	20×40	1.55	220	420
200	470	22×30	1.56	220	420
200	470	22×35	1.57	220	420
200	470	25×30	1.58	220	420
200	470	30×25	1.59	220	420
200	560	20×45	1.73	190	360
200	560	22×35	1.73	190	360
200	560	22×40	1.77	190	360
200	560	25×30	1.77	190	360
200	560	30×25	1.77	190	360
200	680	22×40	2.12	150	290
200	680	22×45	2.15	150	290
200	680	25×35	2.15	150	290
200	680	30×30	2.15	150	290
200	680	35×25	2.15	150	290
200	820	22×50	2.19	130	240
200	820	25×45	2.19	130	240
200	820	30×25	2.2	130	240
200	820	30×30	2.24	130	240

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	820	35×25	2.24	130	240
200	1000	25×40	2.24	110	200
200	1000	30×30	2.24	110	200
200	1000	30×35	2.5	110	200
200	1000	35×30	2.5	110	200
200	1200	25×50	2.95	89	170
200	1200	30×35	2.7	89	170
200	1200	30×40	2.95	89	170
200	1200	35×30	2.95	89	170
200	1200	35×35	3.13	89	170
200	1500	30×50	3.2	68	130
200	1500	35×40	3.2	68	130
200	1800	30×50	3.3	58	110
200	1800	35×40	3.3	58	110
200	1800	35×45	3.55	58	110
200	2200	35×45	3.85	48	90
200	2200	35×50	4	48	90
200	2700	35×55	4.3	39	74
220	150	20×20	0.71	700	1330
220	180	22×20	0.77	580	1110
220	220	20×30	1.07	470	900
220	220	22×25	1.07	470	900
220	270	20×35	1.16	390	740
220	270	22×30	1.17	390	740
220	270	25×25	1.18	390	740
220	330	20×35	1.27	320	600
220	330	22×35	1.28	320	600
220	330	25×25	1.28	320	600
220	330	30×20	1.3	320	600
220	390	20×40	1.35	270	510
220	390	22×35	1.41	270	510
220	390	25×30	1.42	270	510
220	470	20×45	1.63	220	420
220	470	22×40	1.65	220	420
220	470	25×35	1.65	220	420
220	470	30×25	1.64	220	420
220	560	22×40	1.79	190	360
220	560	22×45	1.81	190	360
220	560	25×40	1.83	190	360
220	560	30×30	1.84	190	360
220	680	25×45	2.23	150	290
220	680	30×35	2.23	150	290
220	680	35×25	2.23	150	290
220	820	25×50	2.25	130	240
220	820	30×40	2.25	130	240
220	820	35×30	2.25	130	240
220	1000	25×55	2.28	110	200
220	1000	30×45	2.28	110	200
220	1000	35×35	2.28	110	200
220	1200	30×50	2.32	89	170
220	1200	35×40	2.32	89	170
220	1500	30×55	3.13	68	130
220	1500	35×45	3.23	68	130
220	1800	35×50	3.89	58	110
220	2200	35×60	3.95	48	90
250	150	20×20	0.67	700	1330
250	150	22×25	0.76	700	1330
250	150	25×20	0.77	700	1330
250	180	22×25	0.79	580	1110
250	180	25×25	0.91	580	1110

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HU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	220	22×25	1.11	470	900
250	220	25×25	1.12	470	900
250	270	22×30	1.22	390	740
250	270	25×30	1.25	390	740
250	270	30×25	1.25	390	740
250	330	22×35	1.44	320	600
250	330	25×25	1.43	320	600
250	330	25×30	1.45	320	600
250	330	30×25	1.45	320	600
250	390	22×35	1.72	270	510
250	390	22×40	1.75	270	510
250	390	25×35	1.77	270	510
250	390	30×25	1.78	270	510
250	470	22×40	1.85	220	420
250	470	22×45	1.86	220	420
250	470	25×40	1.87	220	420
250	470	30×35	1.88	220	420
250	470	35×30	1.89	220	420
250	560	22×45	2.16	190	360
250	560	25×45	2.17	190	360
250	560	30×30	2.18	190	360
250	560	35×25	2.19	190	360
250	680	22×50	2.25	150	290
250	680	25×40	2.25	150	290
250	680	30×30	2.25	150	290
250	680	30×35	2.4	150	290
250	680	35×30	2.4	150	290
250	820	25×50	2.52	130	240
250	820	30×40	2.52	130	240
250	820	35×35	2.52	130	240
250	1000	30×40	2.75	110	200
250	1000	30×50	2.88	110	200
250	1000	35×40	2.88	110	200
250	1200	30×50	3.15	89	170
250	1200	30×60	3.35	89	170
250	1200	35×45	3.28	89	170
250	1500	35×45	3.76	68	130
250	1800	35×50	4.06	58	110
315	68	22×20	0.48	1540	2930
315	82	22×20	0.52	1280	2430
315	100	25×20	0.58	1050	1990
315	120	22×25	0.76	870	1660
315	120	30×20	0.77	870	1660
315	150	22×30	0.83	700	1330
315	150	25×25	0.85	700	1330
315	150	30×20	0.86	700	1330
315	180	22×30	0.93	580	1110
315	180	25×25	0.95	580	1110
315	220	22×40	1.17	470	900
315	220	25×30	1.14	470	900
315	220	30×25	1.14	470	900
315	270	22×45	1.28	390	740
315	270	25×35	1.26	390	740
315	270	30×25	1.27	390	740
315	330	22×50	1.49	320	600
315	330	25×40	1.49	320	600
315	330	30×30	1.49	320	600
315	330	35×25	1.49	320	600
315	390	25×45	1.86	270	510
315	390	30×35	1.86	270	510

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
315	390	35×30	1.86	270	510
315	470	25×50	1.96	220	420
315	470	30×40	1.97	220	420
315	470	35×35	1.99	220	420
315	560	30×45	2.35	190	360
315	560	35×35	2.36	190	360
315	680	30×50	2.37	150	290
315	680	35×40	2.37	150	290
315	820	35×45	2.38	130	240
315	1000	35×45	2.46	110	200
350	56	22×20	0.42	1870	3550
350	68	25×20	0.52	1540	2930
350	82	25×20	0.55	1280	2430
350	100	22×30	0.71	1050	1990
350	120	25×25	0.77	870	1660
350	120	30×20	0.77	870	1660
350	150	22×30	0.87	700	1330
350	150	25×25	0.87	700	1330
350	150	30×20	0.89	700	1330
350	180	22×35	0.95	580	1110
350	180	25×30	0.96	580	1110
350	180	30×25	1.05	580	1110
350	220	22×45	1.25	470	900
350	220	25×35	1.26	470	900
350	220	35×25	1.28	470	900
350	270	22×50	1.3	390	740
350	270	25×40	1.31	390	740
350	270	30×30	1.31	390	740
350	270	35×25	1.32	390	740
350	330	25×45	1.52	320	600
350	330	30×35	1.54	320	600
350	330	35×30	1.55	320	600
350	390	25×50	1.94	270	510
350	390	30×35	1.88	270	510
350	390	35×30	1.88	270	510
350	470	25×50	2.1	220	420
350	470	30×40	2.1	220	420
350	470	35×40	2.1	220	420
350	560	30×45	2.39	190	360
350	560	35×40	2.39	190	360
350	680	30×50	2.4	150	290
350	680	35×40	2.41	150	290
350	820	35×45	2.45	130	240
385	33	22×20	0.2	3170	6030
385	39	20×20	0.35	2680	5100
385	56	22×20	0.43	1870	3550
385	68	22×25	0.52	1540	2930
385	68	25×20	0.52	1540	2930
385	82	22×25	0.64	1280	2430
385	82	25×20	0.64	1280	2430
385	100	22×25	0.69	1050	1990
385	100	22×30	0.75	1050	1990
385	100	25×25	0.75	1050	1990
385	120	22×35	0.8	870	1660
385	120	25×25	0.8	870	1660
385	120	30×20	0.8	870	1660
385	150	22×35	0.92	700	1330
385	150	25×35	0.92	700	1330
385	150	30×30	0.92	700	1330
385	180	22×35	1.22	580	1110

CapXon

HU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
385	180	22×40	1.25	580	1110
385	180	25×30	1.32	580	1110
385	180	30×30	1.34	580	1110
385	180	35×25	1.34	580	1110
385	270	30×30	1.47	390	740
385	270	35×30	1.48	390	740
385	390	25×50	1.95	270	510
385	390	30×40	1.95	270	510
385	390	35×30	1.95	270	510
385	470	30×50	2.32	220	420
385	470	35×35	2.32	220	420
385	680	30×55	2.55	150	290
385	680	35×50	2.55	150	290
385	820	35×55	2.65	130	240
400	47	22×20	0.44	2230	4230
400	56	22×20	0.45	1870	3550
400	68	22×25	0.53	1540	2930
400	68	25×20	0.53	1540	2930
400	82	22×25	0.7	1280	2430
400	82	25×20	0.7	1280	2430
400	82	25×25	0.8	1280	2430
400	100	22×25	1.03	1050	1990
400	100	22×30	1.08	1050	1990
400	100	25×25	1.08	1050	1990
400	120	22×30	1.15	870	1660
400	120	22×35	1.2	870	1660
400	120	25×25	1.2	870	1660
400	120	25×30	1.25	870	1660
400	120	30×20	1.2	870	1660
400	120	30×25	1.25	870	1660
400	150	22×35	1.25	700	1330
400	150	22×40	1.3	700	1330
400	150	25×25	1.25	700	1330
400	150	25×30	1.3	700	1330
400	150	30×20	1.25	700	1330
400	150	30×25	1.3	700	1330
400	180	22×35	1.39	580	1110
400	180	22×40	1.41	580	1110
400	180	22×45	1.45	580	1110
400	180	25×30	1.41	580	1110
400	180	25×35	1.45	580	1110
400	180	30×30	1.41	580	1110
400	180	35×25	1.41	580	1110
400	220	22×45	1.56	470	900
400	220	22×50	1.58	470	900
400	220	25×35	1.55	470	900
400	220	25×40	1.58	470	900
400	220	25×45	1.62	470	900
400	220	30×25	1.55	470	900
400	220	30×30	1.58	470	900
400	220	30×35	1.62	470	900
400	220	35×25	1.58	470	900
400	270	22×50	1.68	390	740
400	270	25×40	1.68	390	740
400	270	25×45	1.71	390	740
400	270	25×50	1.74	390	740
400	270	30×30	1.68	390	740
400	270	30×35	1.71	390	740
400	270	35×30	1.74	390	740
400	330	25×45	1.77	320	600

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	330	25×50	1.82	320	600
400	330	30×35	1.8	320	600
400	330	30×40	1.92	320	600
400	330	35×30	1.92	320	600
400	330	35×35	1.98	320	600
400	390	25×45	2.04	270	510
400	390	30×40	2.15	270	510
400	390	30×45	2.25	270	510
400	390	35×30	2.15	270	510
400	390	35×35	2.25	270	510
400	390	35×40	2.35	270	510
400	470	30×45	2.46	220	420
400	470	30×50	2.49	220	420
400	470	35×30	2.15	220	420
400	470	35×35	2.46	220	420
400	470	35×40	2.5	220	420
400	560	30×50	2.79	190	360
400	560	35×40	2.79	190	360
400	560	35×45	2.82	190	360
400	560	35×50	2.88	190	360
400	680	30×55	2.86	150	290
400	680	35×40	2.86	150	290
400	680	35×50	2.9	150	290
400	820	35×55	2.9	130	240
420	820	35×60	2.95	170	320
420	1000	35×60	3	140	270
420	1200	35×70	3.12	120	220
420	47	22×20	0.45	2970	5640
420	56	22×20	0.46	2490	4740
420	68	22×25	0.54	2050	3900
420	68	25×20	0.54	2050	3900
420	82	22×25	0.81	1700	3230
420	82	25×25	0.85	1700	3230
420	100	22×25	0.95	1390	2650
420	100	22×30	1.05	1390	2650
420	100	25×25	1.05	1390	2650
420	100	30×20	1.05	1390	2650
420	120	22×30	1.07	1160	2210
420	120	22×35	1.12	1160	2210
420	120	25×25	1.12	1160	2210
420	120	25×30	1.15	1160	2210
420	120	30×25	1.15	1160	2210
420	120	35×20	1.15	1160	2210
420	150	22×35	1.22	930	1770
420	150	22×40	1.25	930	1770
420	150	25×30	1.25	930	1770
420	150	25×35	1.28	930	1770
420	150	30×25	1.28	930	1770
420	180	25×35	1.42	770	1470
420	180	30×30	1.45	770	1470
420	180	35×25	1.45	770	1470
420	220	22×45	1.44	640	1210
420	220	22×50	1.5	640	1210
420	220	25×35	1.44	640	1210
420	220	25×45	1.52	640	1210
420	220	30×30	1.48	640	1210
420	220	30×35	1.53	640	1210
420	220	35×25	1.53	640	1210
420	270	25×40	1.71	520	980
420	270	30×30	1.71	520	980

CapXon

HU series

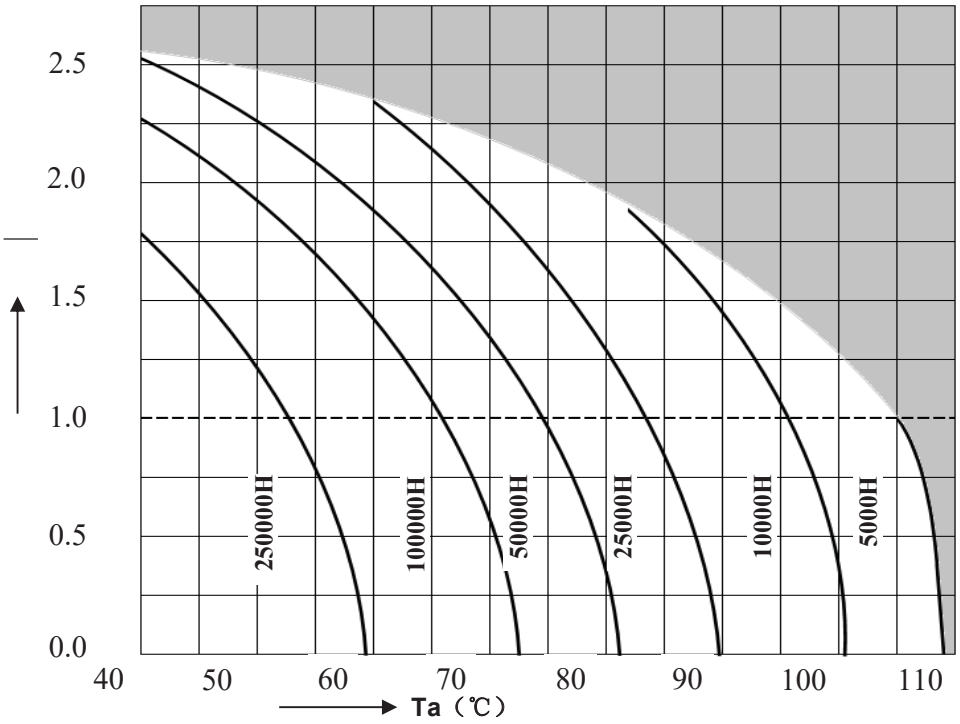
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
420	270	30×35	1.75	520	980
420	270	30×40	1.82	520	980
420	270	35×25	1.75	520	980
420	270	35×30	1.82	520	980
420	330	25×50	1.92	420	800
420	330	30×35	1.9	420	800
420	330	30×40	1.92	420	800
420	330	30×45	1.93	420	800
420	330	35×30	1.93	420	800
420	330	35×35	2	420	800
420	390	30×40	2.29	360	680
420	390	30×45	2.33	360	680
420	390	30×50	2.38	360	680
420	390	35×35	2.34	360	680
420	390	35×40	2.38	360	680
420	470	30×50	2.51	290	560
420	470	30×60	2.6	290	560
420	470	35×40	2.52	290	560
420	470	35×45	2.6	290	560
420	560	35×45	2.8	250	470
420	560	35×50	2.88	250	470
420	680	35×50	2.88	210	390
420	680	35×55	2.93	210	390
420	820	30×60	2.9	170	320
420	820	35×55	2.95	170	320
420	820	35×60	3	170	320
450	56	22×25	0.67	2490	4740
450	68	22×25	0.93	2050	3900
450	68	22×30	0.98	2050	3900
450	68	25×25	0.99	2050	3900
450	82	22×25	0.95	1700	3230
450	82	22×30	1.01	1700	3230
450	82	25×25	1.01	1700	3230
450	100	22×30	1.05	1390	2650
450	100	22×35	1.1	1390	2650
450	100	25×25	1.1	1390	2650
450	100	25×30	1.15	1390	2650
450	100	30×25	1.15	1390	2650
450	120	22×35	1.16	1160	2210
450	120	22×40	1.18	1160	2210
450	120	25×30	1.18	1160	2210
450	120	25×35	1.23	1160	2210
450	120	30×25	1.23	1160	2210
450	150	22×40	1.3	930	1770
450	150	22×45	1.35	930	1770
450	150	25×30	1.3	930	1770
450	150	25×35	1.35	930	1770
450	150	25×40	1.38	930	1770
450	150	30×25	1.35	930	1770
450	150	30×30	1.38	930	1770
450	150	35×25	1.38	930	1770
450	180	25×35	1.55	770	1470
450	180	25×40	1.6	770	1470
450	180	25×45	1.65	770	1470
450	180	30×30	1.61	770	1470
450	180	30×35	1.65	770	1470
450	180	35×25	1.65	770	1470
450	220	22×50	1.63	640	1210
450	220	25×40	1.63	640	1210
450	220	25×45	1.68	640	1210

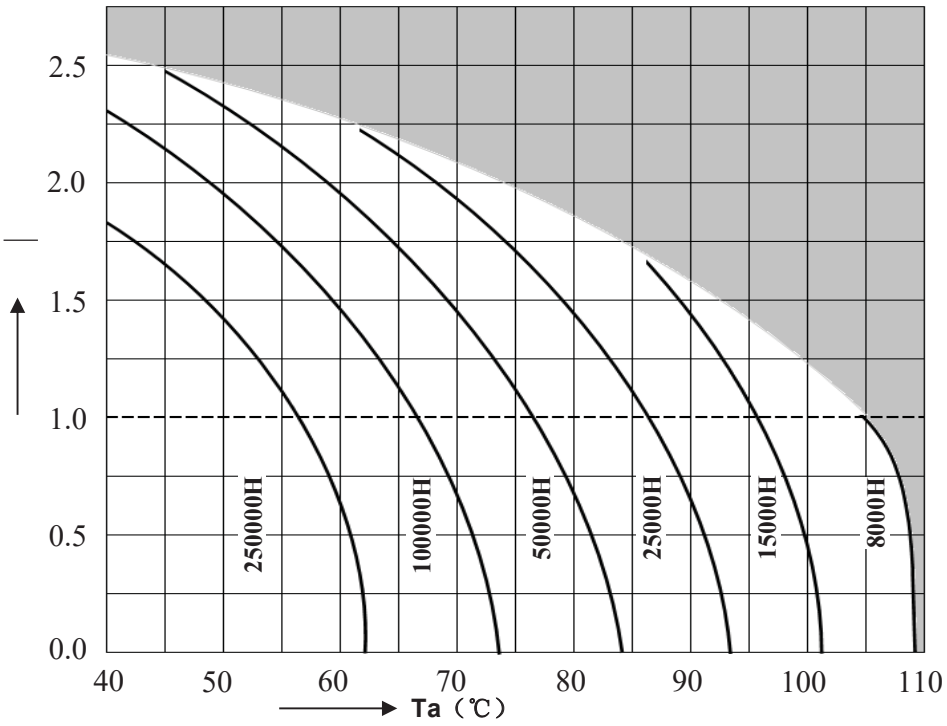
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	220	25×50	1.73	640	1210
450	220	30×30	1.63	640	1210
450	220	30×35	1.68	640	1210
450	220	30×40	1.73	640	1210
450	220	35×25	1.68	640	1210
450	220	35×30	1.73	640	1210
450	270	25×50	1.91	520	980
450	270	30×30	1.66	520	980
450	270	30×35	1.86	520	980
450	270	30×40	1.91	520	980
450	270	30×45	1.95	520	980
450	270	35×30	1.92	520	980
450	270	35×35	1.97	520	980
450	330	30×40	2.15	420	800
450	330	30×45	2.23	420	800
450	330	30×50	2.3	420	800
450	330	35×35	2.24	420	800
450	330	35×40	2.33	420	800
450	390	30×50	2.41	360	680
450	390	35×40	2.43	360	680
450	390	35×45	2.5	360	680
450	470	35×40	2.63	290	560
450	470	35×45	2.68	290	560
450	560	30×60	2.76	250	470
450	560	35×50	2.86	250	470
450	560	35×55	2.89	250	470
450	680	35×50	2.92	210	390
450	680	35×55	2.98	210	390
500	39	22×25	0.52	3580	6800
500	47	22×25	0.54	2970	5640
500	56	22×30	0.61	2490	4740
500	68	22×30	0.71	2050	3900
500	68	25×25	0.73	2050	3900
500	82	22×35	0.8	1700	3230
500	82	25×30	0.81	1700	3230
500	82	30×25	0.84	1700	3230
500	100	22×40	0.92	1390	2650
500	100	25×35	0.94	1390	2650
500	100	30×25	0.95	1390	2650
500	120	22×45	0.95	1160	2210
500	120	25×35	0.95	1160	2210
500	120	30×30	1.02	1160	2210
500	120	35×30	1.05	1160	2210
500	150	22×50	1.08	930	1770
500	150	25×45	1.22	930	1770
500	150	30×35	1.23	930	1770
500	150	35×30	1.24	930	1770
500	180	25×50	1.31	770	1470
500	180	30×40	1.35	770	1470
500	180	35×30	1.36	770	1470
500	220	30×45	1.51	640	1210
500	220	35×35	1.52	640	1210
500	270	30×50	1.55	520	980
500	270	35×40	1.63	520	980
500	330	35×45	1.83	420	800
500	390	35×50	1.88	360	680
500	470	35×55	2.2	290	560

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions $V_R \leqslant 100V$



depending on ambient temperature Ta versus under ripple current operating conditions $V_R \geqslant 160V$



CapXon

HL series

HL Series 105℃ 5000H

Features

Extremely Long useful life

Applications

- Switch-mode power supplies in industrial and entertainmentelectronics
- Uninterruptible power supplies

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-boar

Specifications

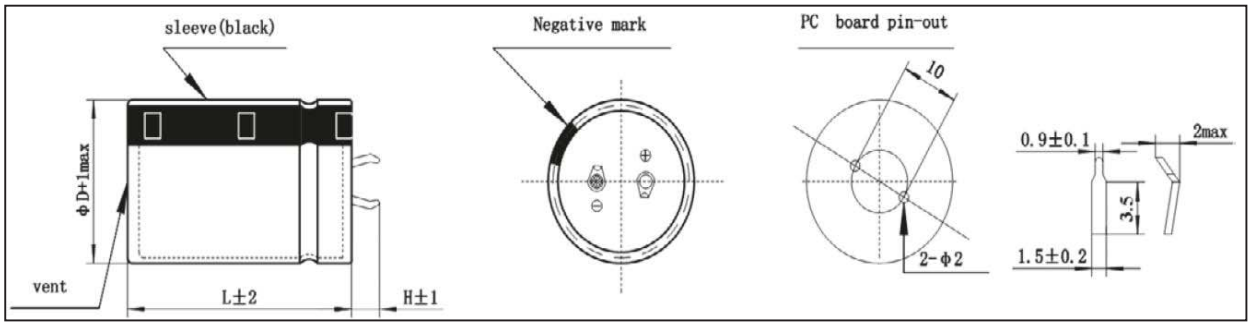
Item	Performance Characteristics											
Operating Temperature Range	-40 to +105℃						-25 to +105℃					
Rated voltage V_R	10 to 450 V DC						500 to 550 V DC					
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR											
Rated capacitance C_R	39 to 56000 μF											
Capacitance tolerance	±20%(120Hz,+20℃)											
Leakage Current I_{leak} (+20℃.max.)	I≤ $3\sqrt{CV}$ (μA)After 5minutes with rated working voltage applied											
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)											
	μF/Vdc	6.3	10	16	25	35	50	63	80	100	160~420	450~600
	≦8200	-	35	35	30	25	20	20	15	15	15	20
	10000 to 22000	55	40	40	35	30	30	25	15	-	-	-
	≧27000	60	50	40	35	35	30	25	-		-	-
Self-inductance ESL	approx. 20 nH											
Useful life	V_R≤100V:	Requirements:										
105 °C; V_R,$I_{AC,R}$		V_R≤100V							V_R>100V			
105 °C; V_R,$I_{AC,R}$	>7000 h	DC/C	≤±30% of initial value						DC/C	≤ ±20% of initial value		
		ESR	≤3 times initial specified limit						ESR	≤ 2 times initial specified limit		
	VR>100V:	I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
	>10000 h	Failure rate :≤1%/1000 hour							Failure rate :≤1%/1000 hour			
Voltage Endurance test		Post test requirements:										
		V_R≤100V							V_R>100V			
105 °C; V_R	5000 h	DC/C	≤ ±15% of initial value						DC/C	≤ ±10% of initial value		
		ESR	≤ 1.3 times initial specified limit						ESR	≤ 1.3 times initial specified limit		
		I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
Shelf Life		Post test requirements:										
		V_R≤100V							V_R>100V			
105 °C	1000 h	DC/C	≤ ±15% of initial value						DC/C	≤ ±10% of initial value		
		ESR	≤ 1.3 times initial specified limit						ESR	≤ 1.3 times initial specified limit		
		I_{leak}	≤ initial specified limit						I_{leak}	≤ initial specified limit		
Vibration Resistance test	To IEC 60068-2-6, test Fc:											
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 ´ 2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.											
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz											
	V_R(V)	6.3~16	25	35	50~100	160~250	315~450	500~600				
	$Z_{-25℃}$ / $Z_{20℃}$	4	3	3	3	3	8	8				
	$Z_{-40℃}$ / $Z_{20℃}$	15	10	8	6	7	10	-				
Sectional specification	IEC 60384-4 and JIS-C-5101											

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10≤V_R≤100	0.88	1	1.07	1.15	1.15	1.15
160≤V_R≤250	0.81	1	1.17	1.32	1.45	1.5
315≤V_R≤600	0.77	1	1.16	1.30	1.41	1.43

Dimensional drawings

Standard 2 terminals



Standard snap-in terminals:length(6.0±1)mm
Also available with length of(4.0±1)mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

HL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	4700	22×25	0.86	76	99
10	6800	22×25	1.31	53	68
10	8200	25×20	1.6	44	57
10	10000	25×20	1.81	36	46
10	12000	22×30	2.11	34	44
10	15000	22×35	2.31	27	35
10	18000	22×40	2.4	23	29
10	22000	25×35	2.6	19	24
10	27000	35×25	3.11	19	25
10	33000	35×30	3.42	15	20
10	39000	35×30	3.7	13	17
10	47000	35×35	4.21	11	14
10	56000	35×40	5.1	9	12
10	68000	35×50	5.51	8	10
16	3300	22×25	1.3	110	140
16	4700	22×25	1.52	76	99
16	6800	22×25	1.81	53	68
16	8200	22×30	2.05	44	57
16	10000	22×30	2.15	36	46
16	10000	25×25	2.2	36	46
16	12000	22×35	2.31	34	44
16	12000	25×30	2.32	34	44
16	12000	30×25	2.4	34	44
16	15000	22×40	2.7	27	35
16	15000	25×35	2.71	27	35
16	15000	30×30	2.73	27	35
16	18000	22×45	2.98	23	29
16	18000	25×40	3.17	23	29
16	18000	30×30	3.2	23	29
16	22000	25×45	3.41	19	24
16	22000	30×35	3.42	19	24
16	22000	35×30	3.43	19	24
16	27000	25×50	3.85	15	20
16	27000	30×40	3.86	15	20
16	27000	35×30	3.87	15	20
16	33000	30×45	4.4	12	16
16	33000	35×35	4.42	12	16
16	39000	30×50	4.82	10	14
16	39000	35×40	4.83	10	14
16	47000	35×45	5.54	9	11
16	56000	35×50	5.9	7	10
16	68000	35×60	6.6	6	8
16	82000	40×60	7.66	5	7
25	2200	22×25	1.3	140	180
25	3300	22×25	1.31	92	120
25	4700	22×25	1.62	65	85
25	5600	22×30	1.8	55	71
25	6800	25×25	1.92	45	59
25	8200	22×35	2.15	37	49
25	8200	30×25	2.3	37	49
25	10000	22×40	2.5	31	40
25	10000	25×30	2.5	31	40
25	10000	30×30	2.68	31	40
25	12000	22×45	2.76	30	39
25	12000	25×40	2.81	30	39
25	12000	30×30	2.82	30	39
25	15000	25×45	3.28	24	31
25	15000	30×35	3.29	24	31
25	15000	35×30	3.3	24	31
25	18000	25×50	3.55	20	26
25	18000	30×40	3.56	20	26
25	22000	30×45	4.25	16	21
25	22000	35×35	4.26	16	21
25	27000	35×45	4.76	13	17
25	33000	35×50	5.5	11	14
35	2200	25×25	1.52	120	150
35	3300	22×25	1.53	77	100
35	3900	22×30	1.7	65	85
35	4700	22×35	2.03	54	71
35	4700	25×25	2.04	54	71
35	5600	22×35	2.13	46	59
35	5600	25×30	2.14	46	59
35	5600	30×25	2.15	46	59
35	6800	22×40	2.6	38	49
35	6800	25×35	2.6	38	49
35	6800	30×25	2.55	38	49
35	8200	22×50	2.85	31	40
35	8200	25×40	2.86	31	40
35	8200	30×30	2.87	31	40
35	10000	25×45	3.07	26	33
35	10000	30×35	3.08	26	33
35	12000	25×50	3.37	26	33
35	12000	30×40	3.38	26	33
35	12000	35×30	3.4	26	33
35	15000	30×45	3.75	20	27
35	15000	35×35	3.76	20	27
35	18000	35×40	4.37	17	22
35	22000	35×50	4.95	14	18
50	1500	25×20	1.15	140	180
50	1800	22×25	1.35	120	150
50	2200	22×25	1.55	92	120
50	2700	22×30	1.75	76	98
50	2700	25×25	1.76	76	98
50	3300	22×35	1.99	62	80
50	3300	25×30	2	62	80
50	3900	22×40	2.25	52	68
50	3900	30×25	2.26	52	68
50	4700	22×45	2.56	43	56
50	4700	25×35	2.62	43	56
50	4700	30×30	2.63	43	56
50	5600	22×50	2.89	36	47
50	5600	25×40	2.9	36	47
50	5600	30×30	2.95	36	47
50	6800	25×45	3.37	30	39
50	6800	30×35	3.39	30	39
50	6800	35×30	3.4	30	39
50	8200	30×40	3.71	25	32
50	8200	35×35	3.72	25	32
50	10000	30×50	4.09	20	27
50	10000	35×40	4.1	20	27
50	12000	35×45	4.56	26	33
50	15000	35×50	4.77	20	27
63	1000	22×25	1.17	210	270
63	1200	22×25	1.25	170	220
63	1500	22×30	1.48	140	180
63	1500	25×25	1.5	140	180
63	1800	22×30	1.59	120	150
63	1800	25×25	1.6	120	150
63	2200	22×35	1.83	92	120
63	2200	25×30	1.84	92	120

CapXon

HL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	2700	22×40	2.05	76	98
63	2700	25×35	2.05	76	98
63	2700	30×25	2.03	76	98
63	3300	22×45	2.33	62	80
63	3300	30×30	2.4	62	80
63	3900	25×40	2.54	52	68
63	3900	30×35	2.57	52	68
63	4700	25×50	2.98	43	56
63	4700	30×40	3.02	43	56
63	4700	35×30	3.05	43	56
63	5600	30×40	3.28	36	47
63	5600	35×35	3.31	36	47
63	6800	30×50	3.73	30	39
63	6800	35×40	3.75	30	39
63	8200	35×45	4.2	25	32
63	10000	35×50	4.7	20	27
80	680	22×25	1	220	290
80	820	22×25	1.15	180	240
80	1000	22×25	1.29	150	200
80	1200	22×30	1.63	130	170
80	1200	25×25	1.65	130	170
80	1500	22×30	1.75	100	130
80	1500	25×25	1.76	100	130
80	1800	22×35	1.83	85	110
80	1800	25×30	1.86	85	110
80	1800	30×25	1.87	85	110
80	2200	22×40	2.09	70	90
80	2200	25×35	2.1	70	90
80	2200	30×25	2.11	70	90
80	2700	25×40	2.43	57	74
80	2700	30×30	2.44	57	74
80	3300	25×45	2.76	46	60
80	3300	30×35	2.79	46	60
80	3300	35×30	2.8	46	60
80	3900	25×50	3.09	39	51
80	3900	30×40	3.12	39	51
80	3900	35×30	3.13	39	51
80	4700	30×45	3.52	33	42
80	4700	35×35	3.53	33	42
80	5600	30×50	3.8	27	36
80	5600	35×40	3.87	27	36
80	6800	35×45	4.19	23	29
100	330	22×20	0.8	460	600
100	470	22×25	0.92	320	420
100	470	25×20	1	320	420
100	560	22×25	1.1	280	360
100	680	22×30	1.22	220	290
100	680	25×25	1.24	220	290
100	820	22×30	1.88	180	240
100	820	25×25	1.96	180	240
100	1000	22×30	1.93	150	200
100	1000	25×25	1.92	150	200
100	1200	22×40	2.08	130	170
100	1200	25×30	2.08	130	170
100	1200	30×25	2.08	130	170
100	1500	22×45	2.15	100	130
100	1500	25×35	2.15	100	130
100	1500	30×30	2.15	100	130
100	1500	35×25	2.15	100	130
100	1800	25×40	2.37	85	110

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	1800	30×35	2.37	85	110
100	2200	25×50	2.65	70	90
100	2200	30×35	2.61	70	90
100	2200	35×30	2.75	70	90
100	2700	25×50	2.76	57	74
100	2700	30×45	2.96	57	74
100	2700	35×35	2.96	57	74
100	3300	30×50	3.34	46	60
100	3300	35×40	3.34	46	60
100	3900	35×45	3.69	39	51
100	4700	35×50	4.15	33	42
160	220	20×25	0.81	470	900
160	220	22×20	0.78	470	900
160	270	22×25	1.01	390	740
160	270	25×20	1.01	390	740
160	330	22×25	1.17	320	600
160	330	25×20	1.17	320	600
160	390	22×30	1.43	270	510
160	390	25×25	1.43	270	510
160	470	22×30	1.52	220	420
160	470	25×25	1.52	220	420
160	470	30×20	1.53	220	420
160	680	22×40	1.53	150	290
160	680	25×30	1.53	150	290
160	680	30×25	1.53	150	290
160	680	35×20	1.56	150	290
160	820	22×45	1.96	130	240
160	820	25×35	1.96	130	240
160	820	30×30	1.96	130	240
160	820	35×25	1.96	130	240
160	1000	25×40	2.23	110	200
160	1200	25×45	2.4	89	170
160	1200	30×35	2.4	89	170
160	1200	35×30	2.4	89	170
160	1500	25×50	2.6	68	130
160	1500	30×40	2.6	68	130
160	1500	35×30	2.6	68	130
160	1800	30×45	2.82	58	110
160	1800	35×35	2.82	58	110
160	2200	30×50	3.32	48	90
160	2200	35×45	3.5	48	90
160	2700	35×50	3.78	39	74
160	3300	35×55	3.86	32	60
180	180	22×20	0.76	580	1110
180	220	25×20	0.9	470	900
180	270	22×25	1.02	390	740
180	270	25×20	1.03	390	740
180	330	20×30	1.2	320	600
180	330	22×25	1.2	320	600
180	330	25×20	1.22	320	600
180	390	22×30	1.32	270	510
180	390	25×25	1.35	270	510
180	390	30×20	1.35	270	510
180	470	22×35	1.53	220	420
180	470	25×30	1.54	220	420
180	470	30×25	1.55	220	420
180	560	22×40	1.67	190	360
180	560	25×30	1.67	190	360
180	560	30×25	1.67	190	360
180	560	35×20	1.67	190	360

CapXon

HL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
180	680	22×45	1.78	150	290
180	680	25×35	1.78	150	290
180	680	30×30	1.78	150	290
180	680	35×25	1.78	150	290
180	820	22×50	2.09	130	240
180	820	25×40	2.09	130	240
180	820	30×30	2.09	130	240
180	820	35×25	2.09	130	240
180	1000	22×50	2.15	110	200
180	1000	25×45	2.15	110	200
180	1000	30×35	2.15	110	200
180	1000	35×30	2.15	110	200
180	1200	22×60	2.22	89	170
180	1200	25×50	2.22	89	170
180	1200	30×40	2.22	89	170
180	1200	35×30	2.22	89	170
180	1500	25×50	2.24	68	130
180	1500	30×45	2.24	68	130
180	1500	35×35	2.24	68	130
180	1800	30×50	2.88	58	110
180	1800	35×35	2.88	58	110
180	1800	35×40	2.94	58	110
180	2200	30×55	3.12	48	90
180	2200	35×45	3.12	48	90
180	2200	35×50	3.23	48	90
180	2200	35×55	3.32	48	90
180	2700	35×50	3.81	39	74
200	150	20×20	0.74	700	1330
200	180	22×20	0.76	580	1110
200	220	20×25	1.01	470	900
200	220	22×25	1.05	470	900
200	220	25×20	1.06	470	900
200	270	20×25	1.07	390	740
200	270	22×25	1.11	390	740
200	330	20×30	1.21	320	600
200	330	22×30	1.26	320	600
200	330	25×25	1.27	320	600
200	390	20×35	1.35	270	510
200	390	22×25	1.35	270	510
200	390	22×30	1.36	270	510
200	390	25×25	1.37	270	510
200	470	20×40	1.55	220	420
200	470	22×30	1.56	220	420
200	470	22×35	1.57	220	420
200	470	25×30	1.58	220	420
200	470	30×25	1.59	220	420
200	560	20×45	1.73	190	360
200	560	22×35	1.73	190	360
200	560	22×40	1.77	190	360
200	560	25×30	1.77	190	360
200	560	30×25	1.77	190	360
200	680	22×40	2.12	150	290
200	680	22×45	2.15	150	290
200	680	25×35	2.15	150	290
200	680	30×30	2.15	150	290
200	680	35×25	2.15	150	290
200	820	22×50	2.19	130	240
200	820	25×45	2.19	130	240
200	820	30×25	2.2	130	240
200	820	30×30	2.24	130	240

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	820	35×25	2.24	130	240
200	1000	25×40	2.24	110	200
200	1000	30×30	2.24	110	200
200	1000	30×35	2.5	110	200
200	1000	35×30	2.5	110	200
200	1200	25×50	2.95	89	170
200	1200	30×35	2.7	89	170
200	1200	30×40	2.95	89	170
200	1200	35×30	2.95	89	170
200	1200	35×35	3.13	89	170
200	1500	30×50	3.2	68	130
200	1500	35×40	3.2	68	130
200	1800	30×50	3.3	58	110
200	1800	35×40	3.3	58	110
200	1800	35×45	3.55	58	110
200	2200	35×45	3.85	48	90
200	2200	35×50	4	48	90
200	2700	35×55	4.3	39	74
220	150	20×20	0.71	700	1330
220	180	22×20	0.77	580	1110
220	220	20×30	1.07	470	900
220	220	22×25	1.07	470	900
220	270	20×35	1.16	390	740
220	270	22×30	1.17	390	740
220	270	25×25	1.18	390	740
220	330	20×35	1.27	320	600
220	330	22×35	1.28	320	600
220	330	25×25	1.28	320	600
220	330	30×20	1.3	320	600
220	390	20×40	1.35	270	510
220	390	22×35	1.41	270	510
220	390	25×30	1.42	270	510
220	470	20×45	1.63	220	420
220	470	22×40	1.65	220	420
220	470	25×35	1.65	220	420
220	470	30×25	1.64	220	420
220	560	22×40	1.79	190	360
220	560	22×45	1.81	190	360
220	560	25×40	1.83	190	360
220	560	30×30	1.84	190	360
220	680	25×45	2.23	150	290
220	680	30×35	2.23	150	290
220	680	35×25	2.23	150	290
220	820	25×50	2.25	130	240
220	820	30×40	2.25	130	240
220	820	35×30	2.25	130	240
220	1000	25×55	2.28	110	200
220	1000	30×45	2.28	110	200
220	1000	35×35	2.28	110	200
220	1200	30×50	2.32	89	170
220	1200	35×40	2.32	89	170
220	1500	30×55	3.13	68	130
220	1500	35×45	3.23	68	130
220	1800	35×50	3.89	58	110
220	2200	35×60	3.95	48	90
250	150	20×20	0.67	700	1330
250	150	22×25	0.76	700	1330
250	150	25×20	0.77	700	1330
250	180	22×25	0.79	580	1110
250	180	25×25	0.91	580	1110

CapXon

HL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	220	22×25	1.11	470	900
250	220	25×25	1.12	470	900
250	270	22×30	1.22	390	740
250	270	25×30	1.25	390	740
250	270	30×25	1.25	390	740
250	330	22×35	1.44	320	600
250	330	25×25	1.43	320	600
250	330	25×30	1.45	320	600
250	330	30×25	1.45	320	600
250	390	22×35	1.72	270	510
250	390	22×40	1.75	270	510
250	390	25×35	1.77	270	510
250	390	30×25	1.78	270	510
250	470	22×40	1.85	220	420
250	470	22×45	1.86	220	420
250	470	25×40	1.87	220	420
250	470	30×35	1.88	220	420
250	470	35×30	1.89	220	420
250	560	22×45	2.16	190	360
250	560	25×45	2.17	190	360
250	560	30×30	2.18	190	360
250	560	35×25	2.19	190	360
250	680	22×50	2.25	150	290
250	680	25×40	2.25	150	290
250	680	30×30	2.25	150	290
250	680	30×35	2.4	150	290
250	680	35×30	2.4	150	290
250	820	25×50	2.52	130	240
250	820	30×40	2.52	130	240
250	820	35×35	2.52	130	240
250	1000	30×40	2.75	110	200
250	1000	30×50	2.88	110	200
250	1000	35×40	2.88	110	200
250	1200	30×50	3.15	89	170
250	1200	30×60	3.35	89	170
250	1200	35×45	3.28	89	170
250	1500	35×45	3.76	68	130
250	1800	35×50	4.06	58	110
315	68	22×20	0.48	1540	2930
315	82	22×20	0.52	1280	2430
315	100	25×20	0.58	1050	1990
315	120	22×25	0.76	870	1660
315	120	30×20	0.77	870	1660
315	150	22×30	0.83	700	1330
315	150	25×25	0.85	700	1330
315	150	30×20	0.86	700	1330
315	180	22×30	0.93	580	1110
315	180	25×25	0.95	580	1110
315	220	22×40	1.17	470	900
315	220	25×30	1.14	470	900
315	220	30×25	1.14	470	900
315	270	22×45	1.28	390	740
315	270	25×35	1.26	390	740
315	270	30×25	1.27	390	740
315	330	22×50	1.49	320	600
315	330	25×40	1.49	320	600
315	330	30×30	1.49	320	600
315	330	35×25	1.49	320	600
315	390	25×45	1.86	270	510
315	390	30×35	1.86	270	510

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
315	390	35×30	1.86	270	510
315	470	25×50	1.96	220	420
315	470	30×40	1.97	220	420
315	470	35×35	1.99	220	420
315	560	30×45	2.35	190	360
315	560	35×35	2.36	190	360
315	680	30×50	2.37	150	290
315	680	35×40	2.37	150	290
315	820	35×45	2.38	130	240
315	1000	35×45	2.46	110	200
350	56	22×20	0.42	1870	3550
350	68	25×20	0.52	1540	2930
350	82	25×20	0.55	1280	2430
350	100	22×30	0.71	1050	1990
350	120	25×25	0.77	870	1660
350	120	30×20	0.77	870	1660
350	150	22×30	0.87	700	1330
350	150	25×25	0.87	700	1330
350	150	30×20	0.89	700	1330
350	180	22×35	0.95	580	1110
350	180	25×30	0.96	580	1110
350	180	30×25	1.05	580	1110
350	220	22×45	1.25	470	900
350	220	25×35	1.26	470	900
350	220	35×25	1.28	470	900
350	270	22×50	1.3	390	740
350	270	25×40	1.31	390	740
350	270	30×30	1.31	390	740
350	270	35×25	1.32	390	740
350	330	25×45	1.52	320	600
350	330	30×35	1.54	320	600
350	330	35×30	1.55	320	600
350	390	25×50	1.94	270	510
350	390	30×35	1.88	270	510
350	390	35×30	1.88	270	510
350	470	25×50	2.1	220	420
350	470	30×40	2.1	220	420
350	470	35×40	2.1	220	420
350	560	30×45	2.39	190	360
350	560	35×40	2.39	190	360
350	680	30×50	2.4	150	290
350	680	35×40	2.41	150	290
350	820	35×45	2.45	130	240
385	33	22×20	0.2	3170	6030
385	39	20×20	0.35	2680	5100
385	56	22×20	0.43	1870	3550
385	68	22×25	0.52	1540	2930
385	68	25×20	0.52	1540	2930
385	82	22×25	0.64	1280	2430
385	82	25×20	0.64	1280	2430
385	100	22×25	0.69	1050	1990
385	100	22×30	0.75	1050	1990
385	100	25×25	0.75	1050	1990
385	120	22×35	0.8	870	1660
385	120	25×25	0.8	870	1660
385	120	30×20	0.8	870	1660
385	150	22×35	0.92	700	1330
385	150	25×35	0.92	700	1330
385	150	30×30	0.92	700	1330
385	180	22×35	1.22	580	1110

CapXon

HL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
385	180	22×40	1.25	580	1110
385	180	25×30	1.32	580	1110
385	180	30×30	1.34	580	1110
385	180	35×25	1.34	580	1110
385	270	30×30	1.47	390	740
385	270	35×30	1.48	390	740
385	390	25×50	1.95	270	510
385	390	30×40	1.95	270	510
385	390	35×30	1.95	270	510
385	470	30×50	2.32	220	420
385	470	35×35	2.32	220	420
385	680	30×55	2.55	150	290
385	680	35×50	2.55	150	290
385	820	35×55	2.65	130	240
400	47	22×20	0.44	2230	4230
400	56	22×20	0.45	1870	3550
400	68	22×25	0.53	1540	2930
400	68	25×20	0.53	1540	2930
400	82	22×25	0.7	1280	2430
400	82	25×20	0.7	1280	2430
400	82	25×25	0.8	1280	2430
400	100	22×25	1.03	1050	1990
400	100	22×30	1.08	1050	1990
400	100	25×25	1.08	1050	1990
400	120	22×30	1.15	870	1660
400	120	22×35	1.2	870	1660
400	120	25×25	1.2	870	1660
400	120	25×30	1.25	870	1660
400	120	30×20	1.2	870	1660
400	120	30×25	1.25	870	1660
400	150	22×35	1.25	700	1330
400	150	22×40	1.3	700	1330
400	150	25×25	1.25	700	1330
400	150	25×30	1.3	700	1330
400	150	30×20	1.25	700	1330
400	150	30×25	1.3	700	1330
400	180	22×35	1.39	580	1110
400	180	22×40	1.41	580	1110
400	180	22×45	1.45	580	1110
400	180	25×30	1.41	580	1110
400	180	25×35	1.45	580	1110
400	180	30×30	1.41	580	1110
400	180	35×25	1.41	580	1110
400	220	22×45	1.56	470	900
400	220	22×50	1.58	470	900
400	220	25×35	1.55	470	900
400	220	25×40	1.58	470	900
400	220	25×45	1.62	470	900
400	220	30×25	1.55	470	900
400	220	30×30	1.58	470	900
400	220	30×35	1.62	470	900
400	220	35×25	1.58	470	900
400	270	22×50	1.68	390	740
400	270	25×40	1.68	390	740
400	270	25×45	1.71	390	740
400	270	25×50	1.74	390	740
400	270	30×30	1.68	390	740
400	270	30×35	1.71	390	740
400	270	35×30	1.74	390	740
400	330	25×45	1.77	320	600

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	330	25×50	1.82	320	600
400	330	30×35	1.8	320	600
400	330	30×40	1.92	320	600
400	330	35×30	1.92	320	600
400	330	35×35	1.98	320	600
400	390	25×45	2.04	270	510
400	390	30×40	2.15	270	510
400	390	30×45	2.25	270	510
400	390	35×30	2.15	270	510
400	390	35×35	2.25	270	510
400	390	35×40	2.35	270	510
400	470	30×45	2.46	220	420
400	470	30×50	2.49	220	420
400	470	35×30	2.15	220	420
400	470	35×35	2.46	220	420
400	470	35×40	2.5	220	420
400	560	30×50	2.79	190	360
400	560	35×40	2.79	190	360
400	560	35×45	2.82	190	360
400	560	35×50	2.88	190	360
400	680	30×55	2.86	150	290
400	680	35×40	2.86	150	290
400	680	35×50	2.9	150	290
400	820	35×55	2.9	130	240
420	820	35×60	2.95	170	320
420	1000	35×60	3	140	270
420	1200	35×70	3.12	120	220
420	47	22×20	0.45	2970	5640
420	56	22×20	0.46	2490	4740
420	68	22×25	0.54	2050	3900
420	68	25×20	0.54	2050	3900
420	82	22×25	0.81	1700	3230
420	82	25×25	0.85	1700	3230
420	100	22×25	0.95	1390	2650
420	100	22×30	1.05	1390	2650
420	100	25×25	1.05	1390	2650
420	100	30×20	1.05	1390	2650
420	120	22×30	1.07	1160	2210
420	120	22×35	1.12	1160	2210
420	120	25×25	1.12	1160	2210
420	120	25×30	1.15	1160	2210
420	120	30×25	1.15	1160	2210
420	120	35×20	1.15	1160	2210
420	150	22×35	1.22	930	1770
420	150	22×40	1.25	930	1770
420	150	25×30	1.25	930	1770
420	150	25×35	1.28	930	1770
420	150	30×25	1.28	930	1770
420	180	25×35	1.42	770	1470
420	180	30×30	1.45	770	1470
420	180	35×25	1.45	770	1470
420	220	22×45	1.44	640	1210
420	220	22×50	1.5	640	1210
420	220	25×35	1.44	640	1210
420	220	25×45	1.52	640	1210
420	220	30×30	1.48	640	1210
420	220	30×35	1.53	640	1210
420	220	35×25	1.53	640	1210
420	270	25×40	1.71	520	980
420	270	30×30	1.71	520	980

CapXon

HL series

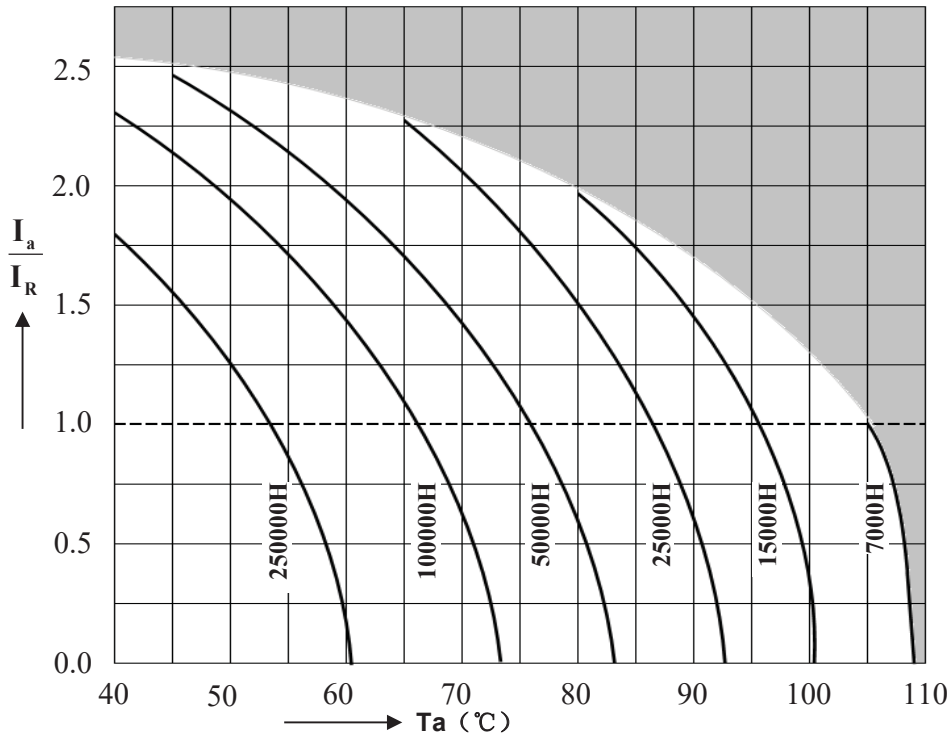
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
420	270	30×35	1.75	520	980
420	270	30×40	1.82	520	980
420	270	35×25	1.75	520	980
420	270	35×30	1.82	520	980
420	330	25×50	1.92	420	800
420	330	30×35	1.9	420	800
420	330	30×40	1.92	420	800
420	330	30×45	1.93	420	800
420	330	35×30	1.93	420	800
420	330	35×35	2	420	800
420	390	30×40	2.29	360	680
420	390	30×45	2.33	360	680
420	390	30×50	2.38	360	680
420	390	35×35	2.34	360	680
420	390	35×40	2.38	360	680
420	470	30×50	2.51	290	560
420	470	30×60	2.6	290	560
420	470	35×40	2.52	290	560
420	470	35×45	2.6	290	560
420	560	35×45	2.8	250	470
420	560	35×50	2.88	250	470
420	680	35×50	2.88	210	390
420	680	35×55	2.93	210	390
420	820	30×60	2.9	170	320
420	820	35×55	2.95	170	320
420	820	35×60	3	170	320
450	56	22×25	0.67	2490	4740
450	68	22×25	0.93	2050	3900
450	68	22×30	0.98	2050	3900
450	68	25×25	0.99	2050	3900
450	82	22×25	0.95	1700	3230
450	82	22×30	1.01	1700	3230
450	82	25×25	1.01	1700	3230
450	100	22×30	1.05	1390	2650
450	100	22×35	1.1	1390	2650
450	100	25×25	1.1	1390	2650
450	100	25×30	1.15	1390	2650
450	100	30×25	1.15	1390	2650
450	120	22×35	1.16	1160	2210
450	120	22×40	1.18	1160	2210
450	120	25×30	1.18	1160	2210
450	120	25×35	1.23	1160	2210
450	120	30×25	1.23	1160	2210
450	150	22×40	1.3	930	1770
450	150	22×45	1.35	930	1770
450	150	25×30	1.3	930	1770
450	150	25×35	1.35	930	1770
450	150	25×40	1.38	930	1770
450	150	30×25	1.35	930	1770
450	150	30×30	1.38	930	1770
450	150	35×25	1.38	930	1770
450	180	25×35	1.55	770	1470
450	180	25×40	1.6	770	1470
450	180	25×45	1.65	770	1470
450	180	30×30	1.61	770	1470
450	180	30×35	1.65	770	1470
450	180	35×25	1.65	770	1470
450	220	22×50	1.63	640	1210
450	220	25×40	1.63	640	1210
450	220	25×45	1.68	640	1210

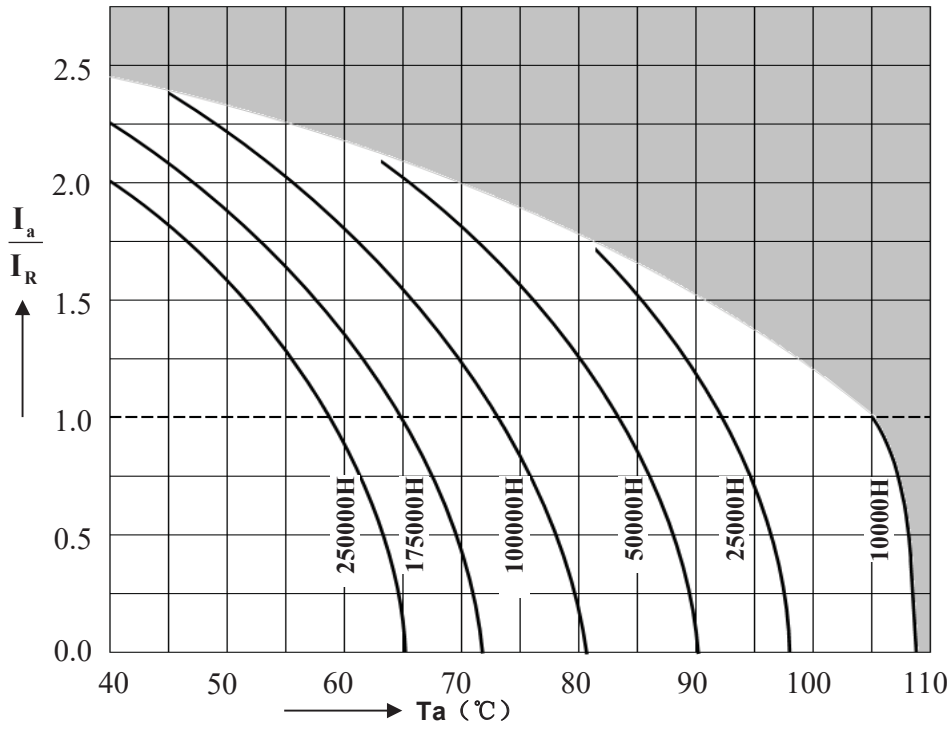
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105 ℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	220	25×50	1.73	640	1210
450	220	30×30	1.63	640	1210
450	220	30×35	1.68	640	1210
450	220	30×40	1.73	640	1210
450	220	35×25	1.68	640	1210
450	220	35×30	1.73	640	1210
450	270	25×50	1.91	520	980
450	270	30×30	1.66	520	980
450	270	30×35	1.86	520	980
450	270	30×40	1.91	520	980
450	270	30×45	1.95	520	980
450	270	35×30	1.92	520	980
450	270	35×35	1.97	520	980
450	330	30×40	2.15	420	800
450	330	30×45	2.23	420	800
450	330	30×50	2.3	420	800
450	330	35×35	2.24	420	800
450	330	35×40	2.33	420	800
450	390	30×50	2.41	360	680
450	390	35×40	2.43	360	680
450	390	35×45	2.5	360	680
450	470	35×40	2.63	290	560
450	470	35×45	2.68	290	560
450	560	30×60	2.76	250	470
450	560	35×50	2.86	250	470
450	560	35×55	2.89	250	470
450	680	35×50	2.92	210	390
450	680	35×55	2.98	210	390
500	39	22×25	0.52	3580	6800
500	47	22×25	0.54	2970	5640
500	56	22×30	0.61	2490	4740
500	68	22×30	0.71	2050	3900
500	68	25×25	0.73	2050	3900
500	82	22×35	0.8	1700	3230
500	82	25×30	0.81	1700	3230
500	82	30×25	0.84	1700	3230
500	100	22×40	0.92	1390	2650
500	100	25×35	0.94	1390	2650
500	100	30×25	0.95	1390	2650
500	120	22×45	0.95	1160	2210
500	120	25×35	0.95	1160	2210
500	120	30×30	1.02	1160	2210
500	120	35×30	1.05	1160	2210
500	150	22×50	1.08	930	1770
500	150	25×45	1.22	930	1770
500	150	30×35	1.23	930	1770
500	150	35×30	1.24	930	1770
500	180	25×50	1.31	770	1470
500	180	30×40	1.35	770	1470
500	180	35×30	1.36	770	1470
500	220	30×45	1.51	640	1210
500	220	35×35	1.52	640	1210
500	270	30×50	1.55	520	980
500	270	35×40	1.63	520	980
500	330	35×45	1.83	420	800
500	390	35×50	1.88	360	680
500	470	35×55	2.2	290	560

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions $V_R \leqslant 100V$



depending on ambient temperature Ta versus under ripple current operating conditions $V_R \geqslant 160V$



LT Series 4 Terminals Snap-in Type 85℃

Features

- Highly capacitors values and compact size.
- Two vent construction.
- 4 sanp-in terminals for printed circuit board mounting.
- RoHS Compliant

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to 85 ℃	-25 ~ +85℃
Rated Voltage Range	16 ~ 100 VDC	160 ~ 450 VDC
Capacitance Range	4700 ~ 82000 μF	330 ~ 3300 μF
Capacitance Tolerance	±20% (120Hz, +20℃)	
Leakage Current (+20℃,max.)	I≦0.02 CV (μA) After 5 minutes with rated working voltage applied.	
Dissipation Factor (tan δ ，at 20℃，120Hz)	Less than the value under table (%)	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max.	
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+85℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 175% of the initial specified value Leakage current :≦ The initial specified value	
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+85℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.	

Dissipation Factor (tan δ ，at 20℃，120Hz)

φ／VDC	16	25	35	50	63	80	100	160 ~ 250	350 ~ 450
φ35 D.F. (%) max.	45	40	35	30	25	25	20	15	20
φ40 D.F. (%) max.	50	45	40	35	30	25	20	15	20

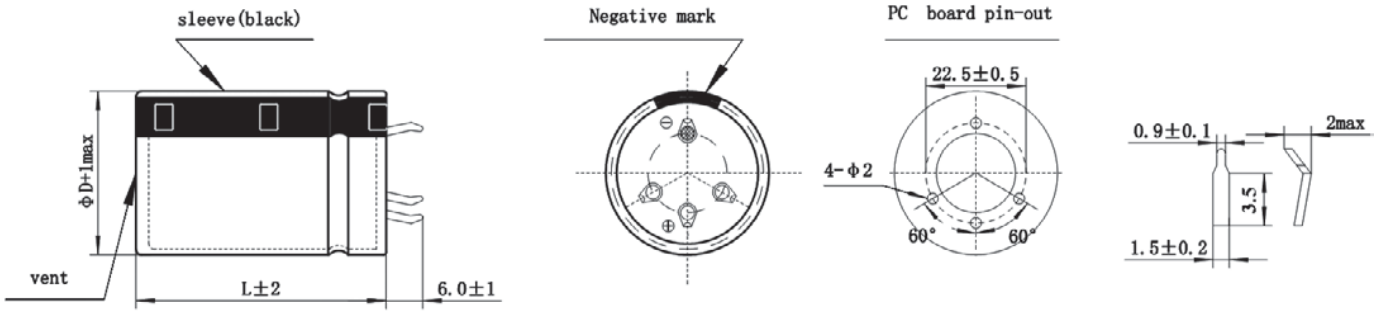
Low Temperature Characteristics (at 120Hz)

Working voltage (VDC)	16	25	35 ~ 100	160 ~ 250	400 ~ 450
Z-25℃／Z+20℃	5	3	3	7	15

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Snap-in

Case Size

ϕ DxL(mm)

WV / ϕD / Cap(μF)	16				25			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
33000					35x50	5.76		
39000					35x60	6.24	40x50	6.24
47000	35x30	5.88			35x80	7.08	40x60	7.08
56000	35x60	6.48	40x50	6.48			40x80	7.40
68000	35x80	7.20	40x60	7.20			40x80	8.55
82000			40x80	8.16				

WV / ϕD / Cap(μF)	35				50			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
15000					35x50	4.53		
18000					35x60	5.07	40x50	5.07
22000	35x50	4.98			35x80	5.74	40x60	5.74
27000	35x60	5.82					40x60	6.16
33000	35x80	6.00	40x60	6.38				
39000	35x80	6.91	40x60	7.00				
47000			40x80	7.52				

WV / ϕD / Cap(μF)	63				80			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4700					35x50	3.20		
6800					35x50	3.62		
8200					35x60	3.92	40x50	3.92
10000					35x80	4.42	40x60	4.42
12000	35x60	4.65	40x50	4.80			40x80	5.10
15000	35x80	4.90	40x60	5.00			40x80	5.58
18000	35x80	5.86						
22000			40x80	6.00				

WV / ϕD / Cap(μF)	100				160			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1800					35x50	2.46		
2200					35x60	2.77	40x50	2.77
2700					35x80	3.00	40x60	3.00
3300							40x80	3.26
5600	35x60	3.64	40x50	3.64				
6800	35x80	3.94	40x60	3.94				
8200			40x80	4.47				

WV / ϕD / Cap(μF)	220				250			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
390					35x50	1.18		
1000	35x50	2.02			35x60	2.10		
1200	35x50	2.24			35x60	2.24	40x50	2.24
1500	35x60	2.44			35x80	2.37	40x60	2.37
1800	35x80	2.65	40x60	2.65			40x80	2.79
2700			40x80	3.03				

WV / ϕD / Cap(μF)	400				450			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
330					35x50	1.16		
390					35x60	1.22		
470	35x60	1.36			35x80	1.38	40x50	1.38
560	35x80	1.44	40x50	1.44	35x80	1.50	40x60	1.50
680	35x80	1.59	40x60	1.59			40x80	1.64
820			40x80	1.78				

Ripple Current (A, rms) at 85℃ 120Hz

HT Series 4 Terminals Snap-in Type 105℃

Features

- Premium industrial grade.
- Long life 2000 Hrs at +105℃ with ripple current applied.
- Expected life : 75000 hrs at +65℃ with ripple current applied.
- Various case sizes and vent construction.
- RoHS Compliant

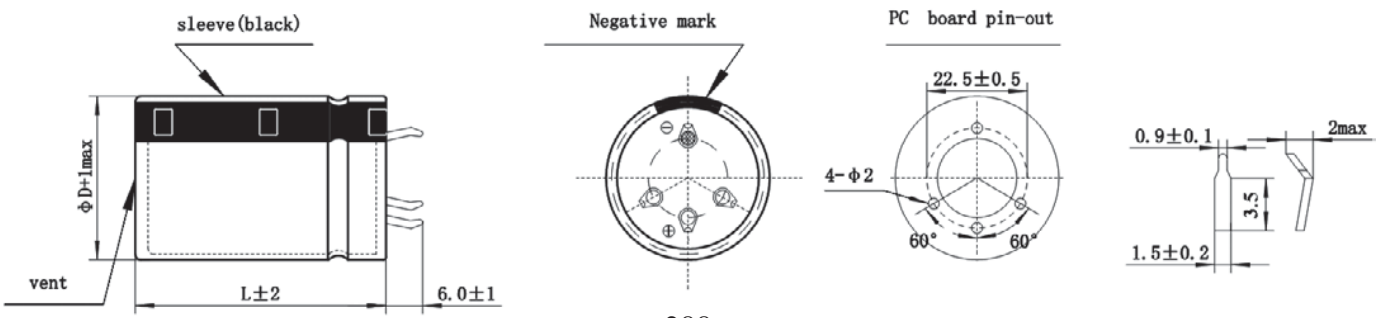
Specifications

Item	Performance Characteristics
Operating Temperature Range	-25 to +105℃
Rated Voltage Range	160 ~ 400 VDC
Capacitance Range	82 ~ 1200 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current (+20℃,max.)	I ≦ 0.02CV After 5 minutes with rated working voltage applied.
Dissipation Factor (tan δ ，at 20℃，120Hz)	15% max.
Low Temperature Characteristics (at 120Hz)	Impedane ratio max Working voltage (VDC) 160 200 250 400 Z -25℃ / Z +20℃ 4 4 4 8
Endurance	Test conditions Duration time :2000 Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 200% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃ : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
10＜CAP≦100	0.8	1	1.23	1.36	1.48	1.53
100＜CAP≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Snap-in

Case Size

ϕ DxL(mm)

WV / ϕ D / Cap(μF)	160				200			
	30		35		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
220					30x25	1.15		
270					30x25	1.22		
330	30x25	1.39			30x30	1.33		
390	30x25	1.47			30x30	1.47	35x25	1.47
470	30x30	1.64			30x35	1.54	35x30	1.54
560	30x30	1.76			30x40	1.69	35x30	1.69
680	30x35	1.98	35x30	1.98	30x45	1.90	35x35	1.90
820	30x40	2.36	35x30	2.36	30x50	2.24	35x40	2.24
1000	30x50	2.60	35x35	2.60				
1200	30x55	2.73						

WV / ϕ D / Cap(μF)	250				400			
	30		35		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
82					30x25	0.73		
100					30x30	0.82		
120					30x35	0.87	35x25	0.87
150					30x40	1.00	35x30	1.00
180	30x25	0.98			30x45	1.06	35x35	1.06
220	30x30	1.10			30x50	1.18	35x40	1.18
270	30x30	1.22						
330	30x35	1.36	35x30	1.36				
390	30x40	1.47	35x30	1.47				
470	30x40	1.58	35x35	1.58				
560	30x50	1.76	35x40	1.76				

Ripple Current (A, rms) at 105℃ 120Hz

1 Guide of Aluminum Electrolytic Capacitors.

1.1 Construction of Capacitors.

When voltage V is applied between both conducting electrodes place, a certain amount charge Q will be stored in dielectric surface by a proportional relative voltage. The proportional constant C is designating the ability of the capacitor store energy in electric field. The basic construction is as Figure 1:

C=Q / V

C: Capacitance (F)

Q: Charge (C)

V: Voltage (V)

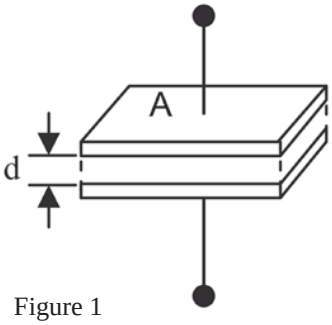


Figure 1

Formula of Capacitance of Capacitor

C =ε0 *ε* A/d

C : Capacitance (F)

ε0: Absolutely Permittivity (=8.85*10^ -12 F/m)

ε : Relative Permittivity

A : Surface of Capacitor Electrode (m^2)

d : Space of Electrode (m)

The relative dielectric constant of the aluminum oxide membrane is 7 to 8, in order to obtain a larger capacitance, A surface area A can be increased or decreased thickness B.

Electrolytic capacitor comprising of two conductive electrodes, an anode (positive foil) and cathode (negative foil) electrodes. An insulating layer is requested to separate both electrodes. Anode if formed by an enlarged surface area of aluminum foil, Oxide membrane (Al_2O_3) will become an insulating layer on the foil Surface. Compared with other material of capacitors, cathode electrode is in charge of conductive liquid, so called electrolyte. Cathode foil is in charge of passing current to the electrolyte.

Figure 2 Cutting Construction of Aluminum Electrolytic Capacitor.

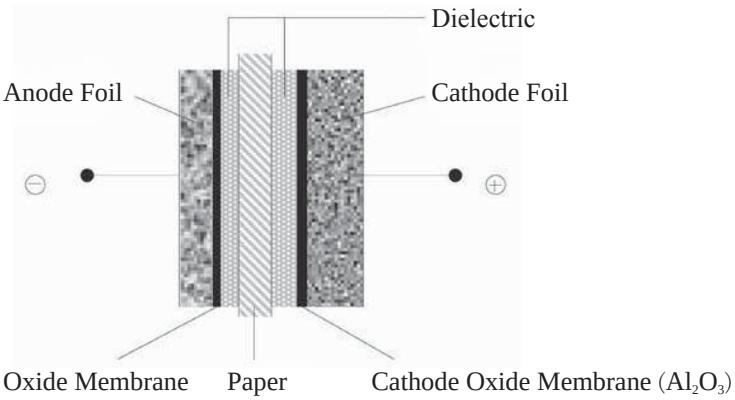


Figure 2

1.2 Equivalent Circuit of Capacitor

Figure 3: Electrical Equivalent Circuit of Aluminum Electrolytic Capacitor

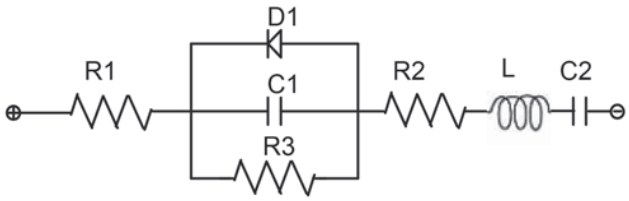


Figure 3

R1: Resistance of Terminal and Electrode

R2: Resistance of Anode Oxide Layer and Electrolyte

R3: Insulation Resistance of Defective Cathode Oxide Membrane

D1: Oxide Semiconductor of Cathode Oxide Membrane

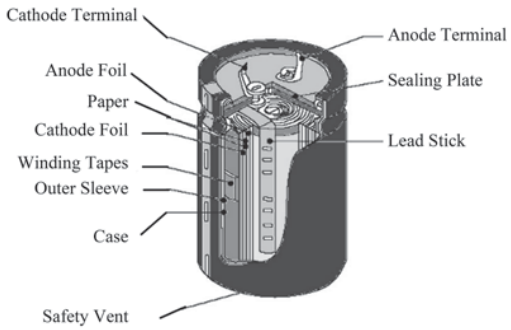
C1: Anode Foil Capacitance

C2: Cathode Foil Capacitance

L: Inductance by Terminals and Electrodes.

1.3 Structure of Aluminum Electrolytic capacitor

Winding of Element



Snap-in Type

2 Definitions of Electrical Parameters

2.1 Voltage

2.1.1 Rated Voltage

Rated voltage means DC voltage and covering the peak voltage value (including pulse voltage) which may be applied continuously to a capacitor in the specified temperature range.

2.1.2 Operating Voltage

Operating voltage is covering applied continuously rated voltage to a capacitor (including superimposed AC voltage) within specified temperature range.

2.1.3 Surge Voltage

Surge voltage is the maximum voltage which applied to the capacitor value in a short period. Surge voltage is defined by JIS C 5101 as below:

$V_R \leq 315$ V : VS= 1.15 multiple V_R

$V_R > 315$ V : VS = 1.10 multiple V_R

2.1.4 Ripple Voltage

Voltage applied is a combination of DC and AC voltage in many product applications. Please note the following:

DC and AC voltage superimposed voltage value must less than rated voltage

Reverse voltage is not allowed. Applied ripple current must less than rated ripple current

2.1.5 Recovery Voltage

Recovery voltage is after the capacitor be discharging, a voltage between 2 terminals will be appear after some times. Once recovery voltage is present, sparking may scare the operators during assembly, and low voltage components may also be affected. To prevent this kind of affection, use a 100Ω~1KΩ resistor to discharge the voltage and covered with a tin foil with short-circuit on 2 terminals.

2.2 Capacitance

2.2.1 AC/DC Capacitance

In most product applications (e.g. filtering or coupling), is typically measuring AC impedance (considering the amplitude and phase) to get the AC capacitance value.

AC capacitor is considering with frequency and temperature, JIS C 5101 defined the test frequency of 100 Hz or 120 Hz, test temperature at 20 °C.

2.2.2 Calculation of Capacitance

The capacitance of anode foil dielectric portion can be calculated by the following formula:

$$Ca = 8.854 \times 10^{-12} \frac{\varepsilon A}{d} \quad (F)$$

ε: Relative Permittivity

A: Anode Surface of Capacitor (m^2)

d: Space of Electrode(m)

Cc of the cathode foil is determined by the characteristics of oxide membrane. And it can be generated from a forming voltage or generated by natural growth during storage. (Typically the cathode foil oxide membrane acceptance voltage is less than 1V). The structure of aluminum electrolytic capacitors, Ca and Cc are connected together by series, so the total capacitance of the capacitor can be calculated by the following formula:

$$C = \frac{Ca \times Cc}{Ca + Cc}$$

2.2.3 Rated Capacitance

Rated capacitance is a value by designed and marked on the capacitor.

2.2.4 Tolerance of Capacitance

Capacitance tolerance is the deviation from the scope of the actual rated capacitance distribution of the capacitor. Usually the tolerance of the standard is +20% (M), however, a tolerances +10% (K), and other special requirements of the capacitor tolerance can be also manufactured.

2.2.5 Temperature Characteristics of Capacitance

The capacitance of aluminum electrolytic capacitor will be affect with different temperature, the viscosity of electrolyte increased thus reducing the conductivity and capacitance when the temperature is decrease. The typical characteristic is as Figure 4:

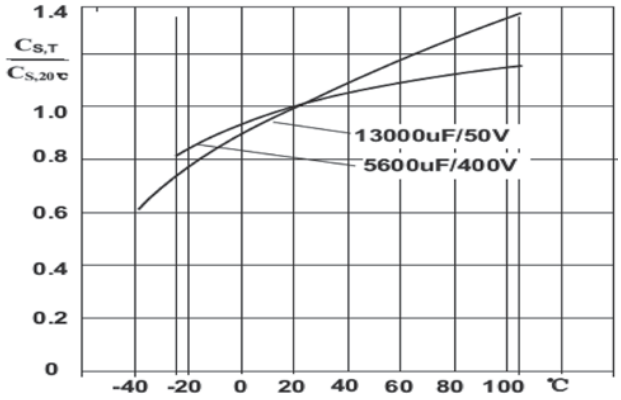
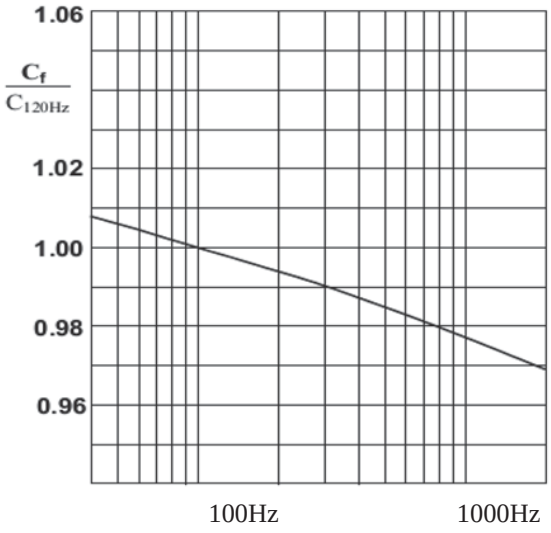


Figure 4

Cs Reference value by temperature characteristic at 20°C and 120 Hz

2.2.6 Frequency Characteristics of Capacitance

Capacitance is about to the temperature and the test frequency. As the test frequency increases, the capacity decreases. Typically frequency characteristic curve is as Figure 5.



$$C = \frac{1}{2\pi f Z}$$

C: Capacitance Unit : F
f : Frequency Unit : Hz
Z : Impedance Unit : Ω

Figure 5

Capacitance C: Versus Frequency f: Typical Behavior

2.3 Dissipation Factor (Tan δ), DF Value

Dissipation factor is the ratio of equivalent series resistance (ESR) to the capacitive reactance (1/ωC) in the equivalent series circuit. Aluminum electrolytic capacitors simplified equivalent circuit is as Figure 6.

Tan δ and 1/ωC, ESR series connection is as Figure 7 and by the following formula:

Figure 6

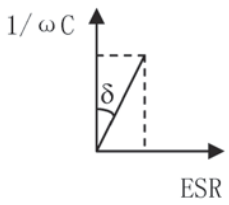


Figure 7

$$\text{Tan}\delta = ESR/(1/\omega C) = \omega * C * ESR$$

Where: ESR at 120Hz

ω=2πf

f =120HZ

C: Series Capacitance (F)

DF (Tanδ) measured at 120Hz and 20 °C.

Tanδ becomes larger by measuring frequency increase (Figure 8), and test temperature decrease (Figure 9).

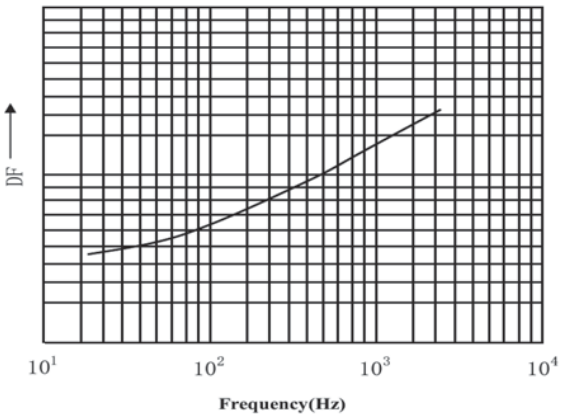


Figure 8

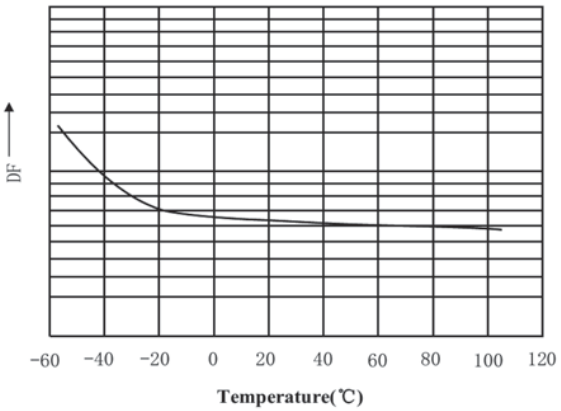


Figure 9

2.4 Equivalent Series Inductance - ESL

Equivalent series inductance represents the inductive part of the capacitors (lead terminal and internal foil). ESL is mainly affective by the frequency. The equivalent series circuit is as Figure 6.

2.5 Equivalent Series Resistance - ESR

ESR represents the losses of the capacitors. The equivalent series circuit is as figure 6. ESR is connected in series with the capacitance in the equivalent circuit. The ohm resistance of ESR is come from of electrode foil, electrolyte, the lead resistance and each internal resistance connection.

ESR decreases with increasing temperature, and also decreases with increasing frequency at low frequency.

2.6 Impedance Z

The impedance Z is the resistance which opposes the flow of alternating current in the particular frequency. It is related to capacitance and inductance which corresponds to the capacitive and inductive reactance, and also relevant with equivalent series resistance (ESR). Specific expression is as following.

$$Z = \sqrt{ESR^2+(X_L-X_C)^2}$$

X_C: Capacitance CS Capacitive Reactance of 1/ωCS: 1/2πf*C

X_L: Inductive Reactance ωESL of Capacitor Winding and Terminals: 2πf*ESL

A typical impedance versus frequency curve is as following. The minimum impedance appears at resonant frequency and it will be equal to the ESR at same frequency.

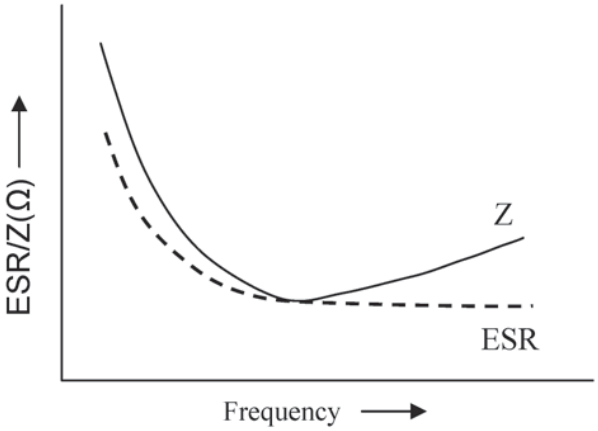


Figure 10 Impedance vs ESR vs Frequency

2.7 Leakage Current

When a DC voltage is applied through 2 terminals of the electrolytic capacitor, a small amount of current is allowed to flow into dielectric of oxide membrane. This small amount of current is called leakage current (LC).

2.7.1 Time and Temperature Characteristics of Leakage Current

As figure 11, there is a big leakage current (inrush current) flow through when capacitor is applied with voltage. With time extend, the leakage current will decrease into a stable leakage current. Thus, the leakage current (LC) is presented after a few minutes when a rated voltage is applied at temperature 20°C.

Leakage current temperature characteristics is as figure 12, larger LC at high temperature; smaller LC at low temperature.

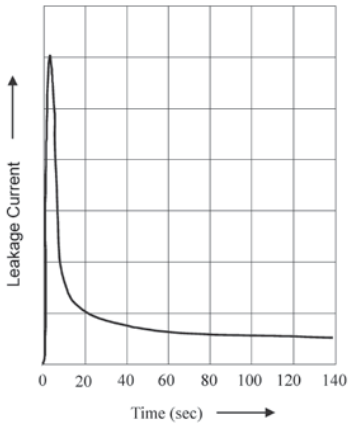


Figure 11 Time vs Leakage Current

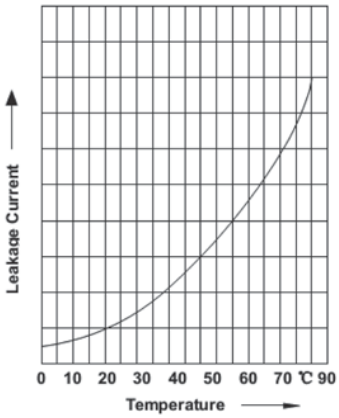


Figure 12 Temperature vs Leakage Current

2.7.2 Voltage Characteristics of Leakage Current

The effective value between leakage current and voltage of ambient temperature as figure 13.

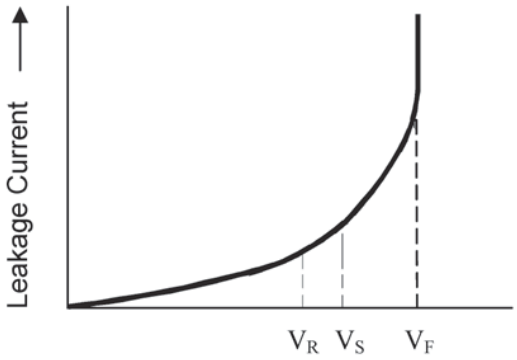


Figure 13 Leakage Current vs Voltage

2.7.3 Acceptance Test of Leakage Current

According to JIS-C-5101, following is the formula of leakage current test value after 5 minutes rated voltage applied at temperature 20 °C.

$$I_{leak} \leq 0.3\mu A * (C*V)^{0.7} + 4\mu A$$

2.7.4 The behavior of leakage current without voltage applied (non voltage storage)

Oxide membrane will be not recover thus performance reduce in a high temperature when voltage is not applied to the 2 terminals of aluminum electrolytic capacitors due to no leakage flow oxygen ions into anode foil.

The leakage current will be rise back when a long time store with non voltage applied.

Please operate of capacitors over than 1 hour after an expired storage (6 months) before using in the circuit.

This action will help oxide membrane recover and can be stored again.

3 Ripple Current

3.1 General

Ripple current is alternating current which flowing through the capacitors. Each capacitor is designed by a rated ripple current which operated under a rated operating temperature to control internal temperature of capacitors. The maximum allowable ripple current depends on the ambient temperature, capacitor surface area (thermal area), dissipation factor tanδ (or ESR) and alternating current frequency.

3.2 Frequency Dependence of Ripple Current

ESR of aluminum electrolytic capacitor will effect with frequency in a fixed voltage. Thus, ripple current is also effective with frequency.

In the most product applications, more than one frequency of ripple current could be found. In this case, we have to consider RMS of ripple current because of self-heating of capacitors is come from the combination of all ripple current of frequency as formula below:

$$Ir = \sqrt{\left(\frac{I_{f1}}{F_{f1}}\right)^2 + \left(\frac{I_{f2}}{F_{f2}}\right)^2 + \cdots + \left(\frac{I_{fn}}{F_{fn}}\right)^2}$$

Ir: RMS Value of Ripple Current

I_{f1}…I_{fn}: RMS Value of Ripple Current at Frequency f1…fn

F_{f1}…F_{fn}: Correction Factor of Ripple Current at Frequency f1….fn

$F_{fi} = \sqrt{\frac{ESR(f_o)}{ESR(fi)}}$ Where fo= Reference Frequency of Nominal Ripple Current

3.3 Temperature Dependence of Ripple Current

Capacitance of each series is given the maximum allowable ripple current under the rated temperature in category.

4 Useful Life

Useful Life (also referred to service life and operating life) is defined as the life achieved by the capacitor without exceeding the specified failure rate. The total failure or failure due parametric variation is considered to constitute the end of the useful life. Depending on the circuit design, as a failure result does not mean device failure due to parameters variation. Instead, it may consider the actual useful life will longer than the specified useful life.

Useful life is given by operating experience and accelerated aging test result. If the load is less than the rated value, useful life can be extended (E.g., lower operating voltage, current, and ambient temperature). In addition to the specified life range in category, CapXon is able to offer special useful life according to customer requested.

4.1 Load Conditions

Conditions of load useful life

Rated Voltage (the peak value of AC voltage superimposed on DC voltage should not be higher than rated voltage)

Rated Ripple Current

Rated Temperature

4.2 Operating Useful Life

Capacitor's operating useful life is calculated from each series expectation useful life.

To learn more about useful life information as below:

To calculate the ratio.

To find the intersection of calculated ratio and operating temperature.

To see the useful life value from the intersection of graph curve.

Above process does not consider the frequency characteristic of ripple current. Equivalent ripple current is calculated from the frequency corresponding to the conversion factor.

The following example illustrates the calculation procedure to use the data of a capacitor of RH series

VR	CR	Case	I_R max 120Hz 105°C (A)
450	2200	63.5X120	9.2

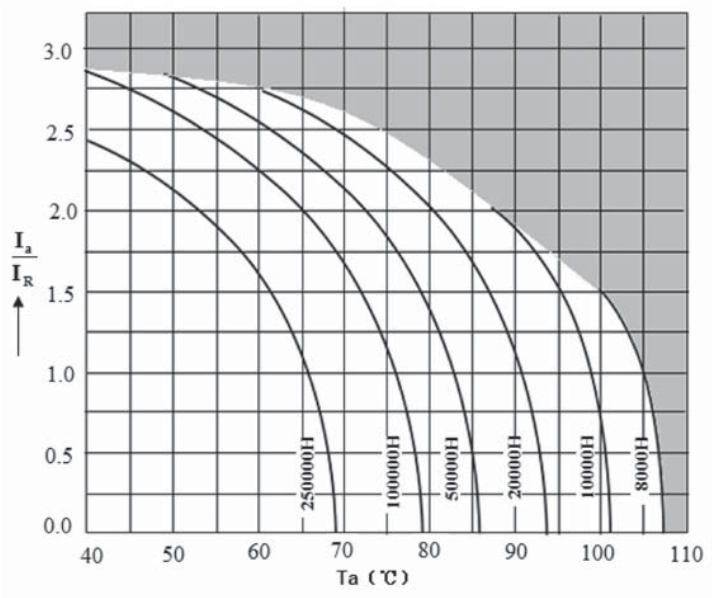


Figure 14

E.g. 1- Calculation of Useful Life

The following values are used to determine the frequency conversion. The corresponding useful life can be calculated.

Ripple Current: 25 A

Frequency: 400 Hz

Ambient: 60°C

Equivalent ripple current at 120Hz frequency converts calculations (see RH series allowable ripple current IRC frequency)

$$\frac{25A}{1.25} = 20A$$

To calculate the ratio of the actual value of the ripple current and specification values.

$$\frac{I_a}{I_R} = \frac{20A}{9.2A} = 2.2$$

Ripple current ratio and ambient temperature (60°C) on the intersection of the graph says the useful life is 100,000 hours (Figure14).

E.g. 2- Calculation of Ripple Current on Aluminum Electrolytic Capacitor

In many applications, Aluminum Electrolytic Capacitors are subjected to the ripple currents of varying frequency.

Current 1: I_{a1}, at 400Hz RMS=20A

Current 2: I_{a2}, at 4 kHz RMS=16A

Ambient: 60°C

Requested Useful Life 100000 Hours

The first step is calculating equivalent 120Hz values for the 2 current values (Frequency factors given on series RH-Frequency factor of permissible ripple current IRC) and the RMS value)

Current I1: $\frac{20A}{1.25} = 16A$

Current I2: $\frac{16A}{1.32} \approx 12.12A$

$$I_{total.RMS} = \sqrt{I_1^{\,2} + I_2^{\,2}} = \sqrt{(16)^2 + (12.12)^2} \approx 20.07A$$

Calculation of Ripple Current Factor:

$$\frac{I_{total.RMS}}{I_{RC.R}} = \frac{20.07A}{9.5A} \approx 2.11$$

Ripple current ratio and ambient temperature (60°C) on the intersection of the graph says the useful life is 100,000 hours (Figure14).

5 Connection of Aluminum Electrolytic Capacitor

In some applications of Aluminum Electrolytic Capacitor, parallel connection and series connections and combination of parallel and series connections will be used.

5.1 Parallel Connection

Parallel connection: Current flows in equally through each unit are a necessary when parallel connection.

5.2 Series Connection

Series connection: Using balancing resistors to equally control the voltage distribution across each unit.

Operating voltage may exceed the specification value because of each single capacitors insulation is quite different and

voltage distribution may quite irregularly. Therefore, forced balancing of voltage distribution is recommended. The balancing resistance must be equal to each other, and the resistance is requested much less than insulation resistance of capacitors. As Figure15:

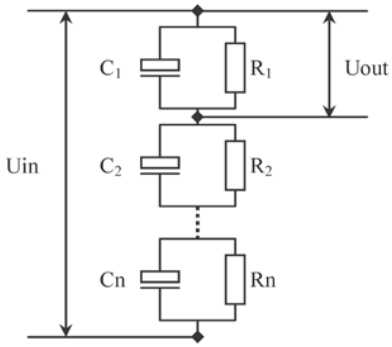


Figure 15

Formula of Equation Resistance Value:

$$R_{\text{balancing resistance}} = 50M\Omega * \mu F * (1/C_R)$$

5.3 Combination of Parallel and Series Connection

Above recommended combination gives apply both in Parallel and Series circuit. It is recommended to allocate balancing resistors to each capacitor if use balancing resistors is a must. (as Figure 16)

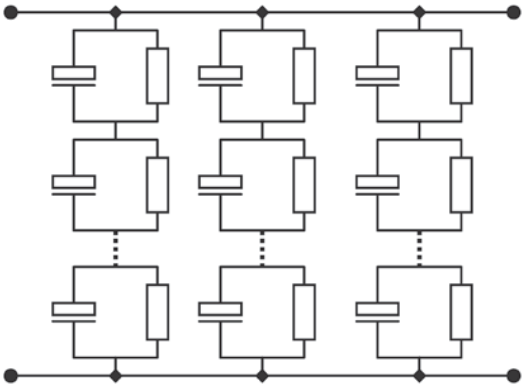


Figure 16

6 Climatic Conditions

6.1 Minimum Permissible Operation Temperature (Lower Temperature)

Aluminum Electrolytic Capacitors will increase DF values (or ESR values) when the operation temperature is decrease. Aluminum Electrolytic Capacitors will define the minimum operating temperature due to both of DF and ESR values are limited in a range for most product applications.

6.2 Maximum Permissible Operation Temperature (Upper Temperature)

Maximum permissible operation temperature is meaning the capacitors maximum operation environment temperature. Capacitors will be un-useful if operation environment is higher than category defined.

Useful life and reliability will both increase if capacitors can be used in lower operation temperature environment.

6.3 Storage Temperature

Aluminum Electrolytic Capacitors can be stored in voltage-free under category said temperature. However, it must reduce useful life and reliability easier and accelerate leakage current value if Capacitors stored in higher temperature. The oxide membrane getting worst is the mainly reason to cause abnormal circuit when Oxide membrane repaired by a larger current suddenly. Therefore, the storage temperature should not exceed 40 °C, and suggested stored at temperature 5 °C ~ 35 °C The effective valid date of capacitors is for 1 year, please use a series resistor in 1000Ω and rated voltage to charge for 30 minutes continuously to let inside oxide membrane regeneration if storage in a long time (over 12 months) is a necessary..

7 Maintenance

A regular inspection is recommended when screw capacitors use in industrial applications. Before inspection, make sure to turn off the power and discharge screw capacitors carefully, and do not force pressure to the terminal to avoid damage.

Inspection items as below:

7.1 Outer damage, deformation and electrolyte leakage checking.

7.2 Electrical Performance: leakage current, capacitance, DF values and other product specifications subject times.

If there is an abnormal detected, make sure the capacitor specifications to replacement and handled properly.

8 Mounting

8.1 Installation

Make sure capacitor's rated capacitance, rated voltage and polarity before installation.

Please confirmed capacitors and circuit board terminal pitch is consistent before installation. It may cause stress to internal capacitor through the terminal to cause short if the pitch is different.

Robotic force pressure and lead bending strength has to be controlled properly when automatically mounting.

Mounting Position of Screw Capacitors

To avoid screw capacitor explosion when capacitance safety vent is opened while capacitance reached a certain exhaust gas pressure, the screw capacitors should not be mounted with the safety vent upside down. Recommended mounting method is shown as Figiure17 to avoid safety vent down installation.

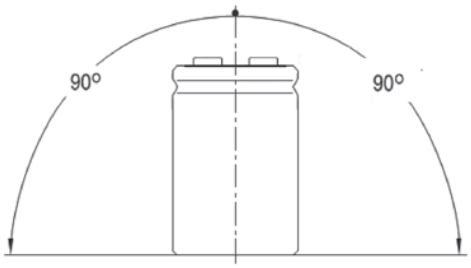


Figure 17
Recommended range of mounting positions

Horizontal Mounting Request

Anode terminal in upper side with safety vent in horizontal as Figure18.

Safety vent in upper side with Anode and Cathode terminal in horizontal as Figure19.

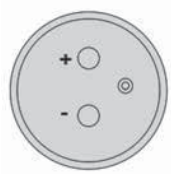


Figure 18

Figure 19

It may not damage capacitors directly but an electrolyte leakage may happen if install by other mounting methods.

8.2 Soldering

8.2.1 Before Soldering

Soldering conditions (preheat, solder temperature and immersion time, frequency) must be completed in the limited range to prevent the performance of capacitors.

When circuit board terminal pitch does not match with capacitors terminal pitch, please do not force extra pressure to capacitor when an extra treatment is necessary.

To avoid treating capacitor body with a soldering iron to prevent sleeve holes and other damage;

To avoid capacitor body dipped in soldering, solder heat will cause the capacitor damage due to internal pressure arise.

8.2.2 After Soldering

After soldering into PCB, do not external forces or pull capacitor body, to prevent the extra pressure to damage the part through the terminal into internal body to cause part short.

8.3 Cleaning Agents

Please use available cleaning agents to clean circuit boards under temperature 50°C within 5 minutes after soldering

Cleaning agent must be strictly managed, such as pollution, chlorine concentration may be increased, result to an internal capacitor corrosion.

After cleaning, must be dry immediately, to avoid cleaning agent remains between sealing portion and circuit board.

Do not use below solvents to clean the capacitance:

Halogen-containing solvents: halogen solvents penetrate (diffuse) into the internal capacitance, will cause cleaning agent decomposition reaction of free chlorine ions, react with the aluminum to cause capacitor corrosion.

Alkaline solvent: corrosion aluminum case

Xylene: sealing rubber oxidation

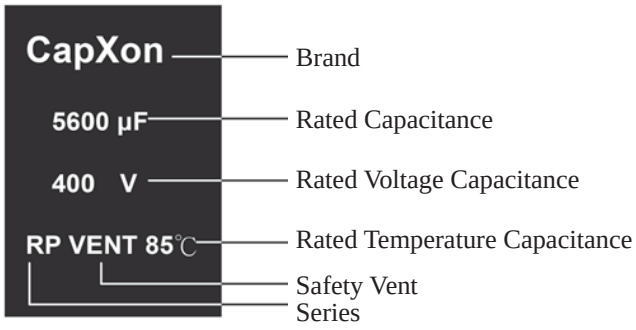
Acetone: description words blur or disappear

9 Outer Sleeve of Capacitors

Outer sleeve and outer plate does not guarantee electrical insulation function, description only.

10. Marking of Capacitors

Marking Content of Screw Type:solvent.



Corporate goals

We adhere to the tenet of "QUALITY FIRST", and offer satisfying products and service to the customer. This aim is shared by the CapXon quality and environment management system:

1 CapXon quality system

1.1 CapXon quality policy and entironment policy

We adhere to the tenet of "QUALITY FIRST", and offer satisfying products and service to the customer.

1.2 Quality management system

The quality management system to ISO/TS 16949:2009 is applied throughout the company and is used to implement the CapXon quality policy.

The implications include:

As a rule, product and process developments follow the rules of APQP),

Quality tools such as FMEA), MSA) and SPC) minimize risks and ensure continuous improvements in conjunction with regular internal audits and QM reviews.

1.3 Certification

The CapXon quality management system forms the basis for the company certification to ISO 9001-2008 and ISO/TS16949:2009 that comprises the CapXon plants and sales organizations.

1.4 Delivery quality

“Delivery quality” means compliance with the agreed data at the time of delivery.

1.5 Failure criteria

A component is defective if one of its features does not correspond to the specification of the data sheet or an agreed delivery specification. Failure criteria please refer to Defective degree evaluation and handling method of reliability experiment.

1.6 Incoming goods inspection at the customer

We recommend the use of a random sampling plan according to ANSI-ASQC Z 1.4 (contents compliant with MIL STD 105 D and IEC 60410) for incoming goods inspection. The test methods to be used are laid down in the relevant standards. Deviations must be agreed by the customer and the supplier.

1.7 Duration of use

The service life in terms of reliability is the time period during which random failures occur, i.e. the range in the product operating life in which the failure rate remains largely constant (early failures and end of operating life excepted). The value depends strongly on conditions of use.

1.7.1 Failure rate (long-term failure rate)

The failure rate is defined as the failure percentage divided by a specified operating period. The failure rate is expressed in fit (failures in 10^9 component hours) or as percentage of failures in1000 hours.

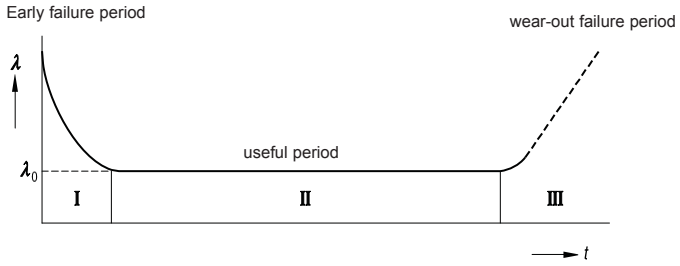
1 fit = 1 $\times 10^{-9}$/h (fit = failure in time)

Example of a failure rate test determined by a useful life test:

1. Number of components tested N = 10000
2. Operating hours tb = 20000 h
3. Number of failures n = 2

$$\lambda_{test} = \frac{n}{N} * \frac{1}{t_b} = \frac{2}{10000} * \frac{1}{20000H} = 10FIT = 0.001\%/1000H$$

Failure rate specifications must include failure criteria, operating conditions and ambient conditions. Usually the failure rate of components, when plotted against time, shows a characteristic curve with the following three periods: I: early failure period, II: useful period, III: wear-out failure period



Unless otherwise specified, the failure rate refers to the useful period (II). During this period, an approximately constant failure rate 0 can be assumed.

1.8 AQL values

The AQL (AQL= acceptable quality level) figures are based on a random sampling plan to ANSI-ASQC Z1.4.

The sampling instructions of this standard are such that a delivered lot will be accepted with a probability of 90% if the percentage of non-conformancies does not exceed the stated AQL figure. As a rule, the percentage of non-conformancies in deliveries from CapXon is significantly below the AQL figure. The acceptance value we apply to inoperatives, i.e. unusable components is c= 0.

2 Environmental management system

2.1 Environmental policy

CapXon defines the following environmental protection principles:

Comply with the law, Govern the pollution, Produce Cleanly, Reduce the consume, Save resource, Cut down the toxic substance, Make Improvement Continuously, Beautify the environment

2.2 Environmental management system

The CapXon ISO 14001 based environmental management system is applied company wide for implementing the CapXon environmental policy. It is posted on the CapXon Intranet and is thus accessible to all employees.

2.3 Environmental Hazardous Substances Free management system

The CapXon QC080000 based HSF management system is applied company wide for implementing the CapXon environmental Hazardous Substances management. that Capxon products effectively in the management of hazardous substances.

2.4 Certification

2.4.1 The CapXon Group operates an environmental management system that conforms to the require- ments of ISO14001 and is mandatory for all plants. The CapXon Group operates an environmental Hazardous Substances Free management system that conforms to the requirements of QC080000 and is mandatory for all plants.The company certificate is posted on the CapXon internet:
(www.capxongroup.com).

2.4.2 SONY GP certification: On Nov 2011, CAPXON have already got the SONY GP certification .GP NO.:FC012746

2.4.3 C-ROHS certification: On Dec 2012, CAPXON have already got the C-ROHS certification. products type: SMD

type, Snap-in type and Radial type.

2.5 RoHS

The term “RoHS-compatible” shall mean the following:

The components described as“RoHS-compatible” are compatible with the requirements of the regulations listed below(“Regulations”) and with the requirements of the provisions which will result from transformation of the Regulations into national law to the extent such provisions reflect the Regulations:

Directive 2002/95/EC of the European Parliament and of the Council of January 27, 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

("Directive 2002/95/EC");The directive from July 1, 2006 entered into force.

Commission Decision of 1August 18, 2005 amending Directive 2002/95/EC (2005/618/EC); Commission Decision of October 13, 2005 and of October 21, 2005 amending the Annex to Directive 2002/95/EC (2005/717/EC, 2005/747/EC, 2006/310/EC, 2006/690 .692/EC).

December 3, 2008 The European Commission published its official Web site of the RoHS directive revised draft COM (2008) 809 / 4.

September 3, 2009 RoHS EU issued a revised second draft Directive COM (2008) 809final.

October 22, 2009 EU Environment Public Health and Food Safety Committee (Committee on the environment, public health and food safely) released on COM (2008) 809 of the amendments.

July 1, 2011,the European Parliament and Council issued directive 2011/65/EU(ROHS.2.0) in the official Journal of the European Union to replace the 2002/95/EC. The new directive has been fully implemented on January 1,2013, the old directive 2002/95/EC has been abolished.

RoHS Directive, also known as Amendment RoHS 2.0, the amendment involves a lot of content. But the basic objectives and mechanisms have not been changes, the ultimate goal still is to reduce the electrical and electronic products of certain hazardous substances.

The instruction modified to increase 4 to be "priority review" the use of substances HBCDD, DEHP, DBP and BBP.

2.6 Halogen Free(HF)

Base on customer and environmental regulations on the management and control requirements of halogen , such as the European 2002-95-EC, IEC 61249-2-1, ”Montreal Protocol on Substances that Deplete the Ozone Layer”, “Controls the Stockholm joint pledge about durable organic pollutant”, CapXon has imported halogen-free materials of all electrolytic capacitors completely at the beginning of 1st,June,2009. All products shipped meet the halogen-free requirements on 31th,Oct,2009.

2.7 Banned and Environmental Hazardous Substances in components

As a manufacturer of passive components, we develop our products on the basis of sustainability.

In order to guarantee a standardized procedure for CapXon Group, a mandatory list of Environmental Hazardous Substances of special interest is part of our environmental management system. The planning and development instructions include regulations and guidelines that aim to identify environmental aspects and to optimize products and processes with respect to material use and environmental compliance, to design them with sparing use of resources and to substitute hazardous substances as far as possible.

In consideration of the environmental aspects are checked and recorded in the design reviews: the environmental officer provides support in the assessment of the environmental impacts of a development project.

2.8 Product Series and Specifications for product catalog

CapXon Product Series and Specifications on the Internet (www.capxongroup.com) ,It is available to refer to check for customers.

2.9 Disposal

All aluminum electrolytic capacitors can be disposed off, reused or recycled. However as disposal is regulated by national law, the respective national provisions have to be observed.

CapXon

UB series

UB Series 85℃

Features

Standard capacitors

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies
- Used for air conditioner,general-purpose inverter

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Specifications

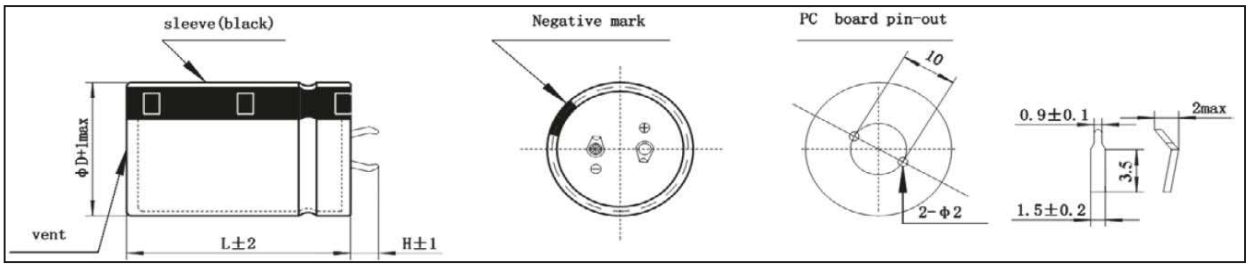
Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	68 ~ 3300 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V) 200~420 450~550 D.F.(%) max 15 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA)After 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 85 ℃; VR ,IAC' R	> 5000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 ℃; VR	2000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 85 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz VR 200~250 V 315~ 450 V ⩾500 V Z-25℃/ 4 8 8 Z-40℃/ 7 10 -	
Sectional specification	IEC 60384-4 and JIS-C-5101	

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

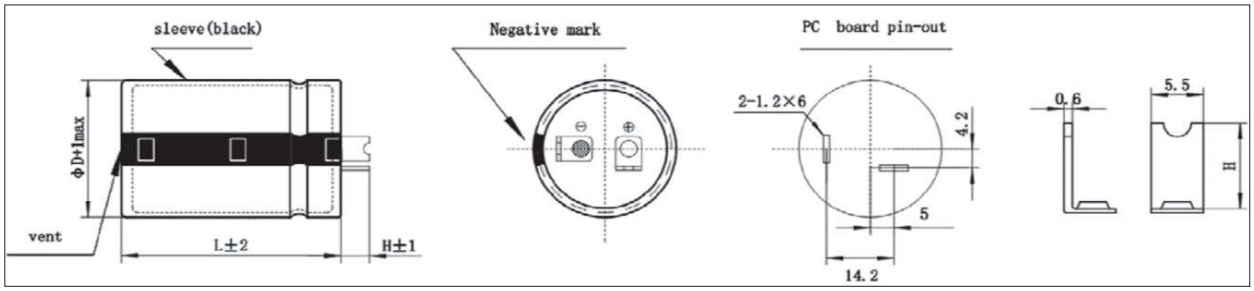
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UB series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	120	22×25	1.1	980	1660
200	220	22×25	1.15	530	900
200	270	22×30	1.3	440	740
200	330	22×30	1.5	350	600
200	330	25×25	1.5	350	600
200	390	22×35	1.65	300	510
200	390	25×30	1.7	300	510
200	470	22×40	1.95	250	420
200	470	25×30	1.8	250	420
200	470	30×25	1.9	250	420
200	560	22×45	2.15	210	360
200	560	25×35	2.12	210	360
200	560	30×30	2.2	210	360
200	560	35×20	2.1	210	360
200	680	22×45	2.35	170	290
200	680	25×40	2.4	170	290
200	680	30×35	2.5	170	290
200	680	35×20	2.32	170	290
200	820	25×40	2.65	140	240
200	820	30×35	2.73	140	240
200	820	35×25	2.82	140	240
200	1000	25×40	2.72	120	200
200	1000	30×40	3.15	120	200
200	1000	35×30	3	120	200
200	1200	30×45	3.5	100	170
200	1200	35×35	3.5	100	170
200	1500	25×50	3.74	76	130
200	1500	30×45	3.93	76	130
200	1500	35×40	3.93	76	130
200	1800	35×40	4.1	65	110
200	2200	35×50	4.25	53	90
200	3300	35×60	4.4	35	60
250	100	22×25	0.72	1170	1990
250	180	22×25	1	650	1110
250	220	22×30	1.15	530	900
250	220	25×25	1.15	530	900
250	270	22×30	1.28	440	740
250	330	22×30	1.36	350	600
250	330	25×30	1.42	350	600
250	330	30×25	1.53	350	600
250	390	22×45	1.72	300	510
250	390	25×35	1.7	300	510
250	390	30×25	1.69	300	510
250	470	22×50	2.01	250	420
250	470	25×40	1.89	250	420
250	470	30×30	1.87	250	420
250	470	35×20	1.86	250	420
250	560	25×45	2.25	210	360
250	560	30×35	2.25	210	360
250	560	35×25	2.22	210	360
250	680	25×50	2.65	170	290
250	680	30×40	2.65	170	290
250	680	35×30	2.61	170	290
250	820	30×40	2.95	140	240
250	820	35×35	2.92	140	240
250	1000	30×40	3.18	120	200
250	1000	35×35	3.25	120	200
250	1200	30×45	3.58	100	170
250	1200	35×40	3.58	100	170
250	1500	30×50	3.94	76	130

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
250	1500	35×45	4.3	76	130
250	1800	35×45	4.46	65	110
250	2200	35×50	4.67	53	90
315	100	22×25	0.72	1170	1990
315	150	22×30	0.9	780	1330
315	150	25×25	0.9	780	1330
315	180	22×35	1	650	1110
315	180	25×30	1.02	650	1110
315	220	22×40	1.15	530	900
315	220	25×35	1.18	530	900
315	220	30×25	1.12	530	900
315	270	22×45	1.23	440	740
315	270	25×40	1.35	440	740
315	270	30×30	1.33	440	740
315	270	35×25	1.38	440	740
315	330	25×45	1.6	350	600
315	330	30×35	1.6	350	600
315	390	35×30	1.7	300	510
315	470	30×45	2.09	250	420
315	470	35×35	2.03	250	420
315	560	30×50	2.3	210	360
315	560	35×40	2.27	210	360
315	680	35×45	2.36	170	290
350	82	22×25	0.7	1430	2430
350	100	22×25	0.79	1170	1990
350	120	22×30	0.84	980	1660
350	120	25×25	0.84	980	1660
350	150	22×35	0.98	780	1330
350	150	25×30	1.01	780	1330
350	180	22×40	1.18	650	1110
350	180	25×35	1.15	650	1110
350	180	30×30	1.15	650	1110
350	220	22×45	1.25	530	900
350	220	25×35	1.23	530	900
350	220	30×30	1.28	530	900
350	220	35×25	1.33	530	900
350	270	25×45	1.46	440	740
350	270	30×35	1.46	440	740
350	330	25×50	1.68	350	600
350	330	35×30	1.65	350	600
350	390	30×40	1.77	300	510
350	390	35×35	1.83	300	510
350	470	30×45	2.11	250	420
350	470	35×40	2.16	250	420
350	560	35×45	2.38	210	360
350	680	35×50	2.66	170	290
350	820	35×60	2.87	140	240
400	68	22×20	0.58	1720	2930
400	82	22×25	0.72	1430	2430
400	100	22×30	0.86	1170	1990
400	100	25×25	0.86	1170	1990
400	120	22×30	0.87	980	1660
400	120	25×25	0.87	980	1660
400	150	22×30	1.03	780	1330
400	150	25×30	1.07	780	1330
400	150	30×25	1.07	780	1330
400	180	22×45	1.2	650	1110
400	180	25×35	1.19	650	1110
400	180	30×30	1.21	650	1110
400	180	35×25	1.26	650	1110

CapXon

UB series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	220	22×50	1.69	530	900
400	220	25×40	1.69	530	900
400	220	30×30	1.69	530	900
400	220	35×25	1.62	530	900
400	270	25×40	1.7	440	740
400	270	30×35	1.8	440	740
400	270	35×30	1.8	440	740
400	330	22×50	1.82	350	600
400	330	30×40	1.9	350	600
400	330	35×35	2	350	600
400	390	30×40	2.05	300	510
400	390	35×35	2.17	300	510
400	470	30×50	3.03	250	420
400	470	35×40	2.95	250	420
400	470	35×45	3.11	250	420
400	560	30×50	3.33	210	360
400	560	35×40	3.28	210	360
400	560	35×45	3.39	210	360
400	560	40×40	3.42	210	360
400	680	30×60	3.81	170	290
400	680	35×45	3.71	170	290
400	680	35×50	3.85	170	290
400	680	40×40	3.78	170	290
400	820	35×55	4.19	140	240
400	820	40×50	4.26	140	240
400	820	45×40	4.22	140	240
400	1000	35×55	4.89	120	200
400	1000	40×55	4.99	120	200
400	1000	45×45	4.95	120	200
400	1200	35×80	5.67	100	170
400	1200	40×60	5.63	100	170
400	1200	40×70	5.69	100	170
400	1200	45×50	5.59	100	170
400	1500	35×95	6.7	76	130
400	1500	40×75	6.4	76	130
400	1500	45×55	6.01	76	130
400	1800	40×85	7.3	65	110
400	1800	45×65	7.15	65	110
400	2200	45×80	8.42	53	90
450	68	22×30	0.63	2290	3900
450	82	22×35	0.73	1900	3230
450	100	22×35	0.89	1560	2650
450	100	25×30	0.92	1560	2650
450	120	22×40	1.2	1300	2210
450	120	25×35	1.23	1300	2210
450	120	30×30	1.15	1300	2210
450	150	22×40	1.26	1040	1770
450	150	25×35	1.32	1040	1770
450	150	30×30	1.32	1040	1770
450	150	35×20	1.26	1040	1770
450	180	25×45	1.55	860	1470
450	180	30×35	1.55	860	1470
450	180	35×25	1.41	860	1470
450	220	25×45	1.69	710	1210
450	220	30×40	1.82	710	1210
450	220	35×30	1.73	710	1210
450	270	30×40	1.9	580	980
450	270	35×35	1.9	580	980
450	330	30×40	2.03	470	800
450	330	30×45	2.09	470	800

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
450	330	35×35	2.07	470	800
450	330	35×40	2.15	470	800
450	390	25×55	2.55	400	680
450	390	30×45	2.59	400	680
450	390	35×35	2.55	400	680
450	390	35×40	2.63	400	680
450	390	35×45	2.7	400	680
450	470	30×50	3.25	330	560
450	470	35×40	3.21	330	560
450	470	40×40	3.31	330	560
450	560	35×50	3.63	280	470
450	560	35×55	3.69	280	470
450	560	35×60	3.73	280	470
450	560	40×45	3.7	280	470
450	680	35×50	3.93	230	390
450	680	35×60	3.99	230	390
450	680	40×50	3.99	230	390
450	680	40×60	4.05	230	390
450	680	45×40	3.96	230	390
450	820	35×60	4.44	190	320
450	820	40×55	4.53	190	320
450	820	40×60	4.58	190	320
450	820	45×45	4.49	190	320
450	1000	35×80	5.23	160	270
450	1000	40×65	5.19	160	270
450	1000	40×70	5.26	160	270
450	1000	45×50	5.15	160	270
450	1500	40×90	6.83	110	180
450	1500	45×70	6.78	110	180
450	1800	45×80	7.39	88	150
450	2200	45×95	8.61	71	120
500	100	30×25	0.93	1560	2650
500	120	30×30	1.05	1300	2210
500	120	35×25	1.07	1300	2210
500	150	30×35	1.23	1040	1770
500	180	30×40	1.46	860	1470
500	180	35×30	1.38	860	1470
500	220	30×45	1.66	710	1210
500	220	35×35	1.57	710	1210
500	270	30×50	1.85	580	980
500	270	35×40	1.77	580	980
500	330	35×40	1.79	470	800
500	330	35×45	1.88	470	800
500	330	40×40	1.88	470	800
500	390	35×45	2.12	400	680
500	390	35×50	2.36	400	680
500	390	40×45	2.41	400	680
500	470	35×50	2.42	330	560
500	470	35×55	2.56	330	560
500	470	40×50	2.6	330	560
500	470	45×40	2.58	330	560
500	560	35×55	2.56	280	470
500	560	35×70	2.82	280	470
500	560	40×55	2.73	280	470
500	560	45×45	2.7	280	470
500	680	35×65	2.7	230	390
500	680	35×70	2.82	230	390
500	680	40×65	2.89	230	390
500	680	45×50	2.82	230	390
500	820	35×95	3.3	190	320

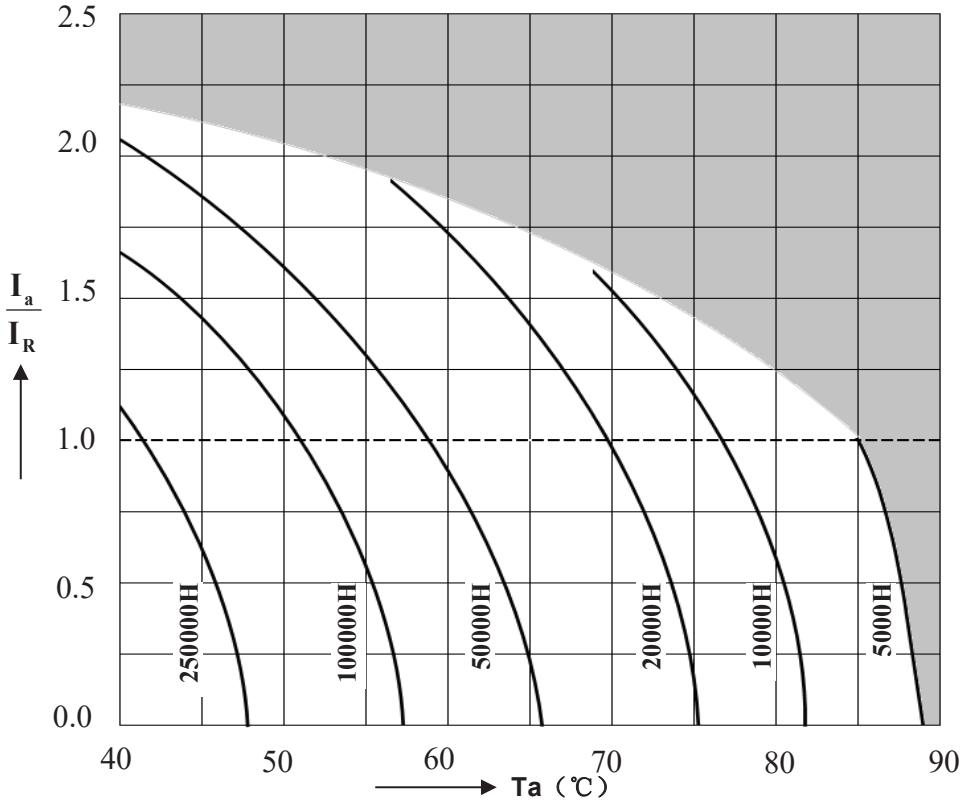
CapXon

UB series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
500	820	40×65	3	190	320
500	820	45×60	3.2	190	320
500	1000	40×85	3.7	160	270
500	1000	45×70	3.65	160	270
500	1200	45×80	4.15	130	220
500	1500	45×100	4.95	110	180

depending on ambient temperature Ta versus under ripple current operating conditions $V_R \geqslant 160V$



CapXon

UC series

UC Series 85℃

Features

Standard capacitors

Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies
- ◆ Used for air conditioner,general-purpose inverter

Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Aluminum case designed explosion-proof vent
- ◆ Snap-in solder pins to hold component in place on PC-board

Features

- ◆ High reliability
- ◆ Long useful life
- ◆ High ripple current capability
- ◆ Aluminum case designed explosion-proof vent
- ◆ RoHS-compatible

Specifications

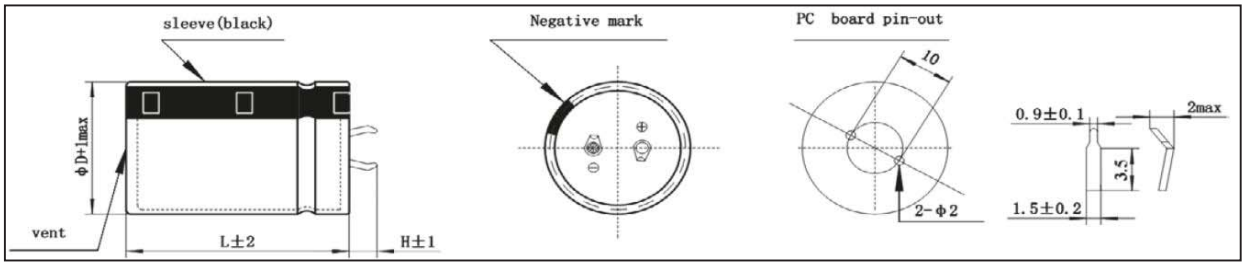
Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	56 ~ 6800 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V) 200~420 450~630 D.F.(%) max 15 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA) After 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 85 ℃; VR ,IAC' R	> 7000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 ℃; VR	3000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 85 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz VR 200~250 V 315~ 450 V 500 V 550~ 630 V Z-25℃/ 4 8 8 12 Z-40℃/ 7 10 - -	
Sectional specification	IEC 60384-4 and JIS-C-5101	

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

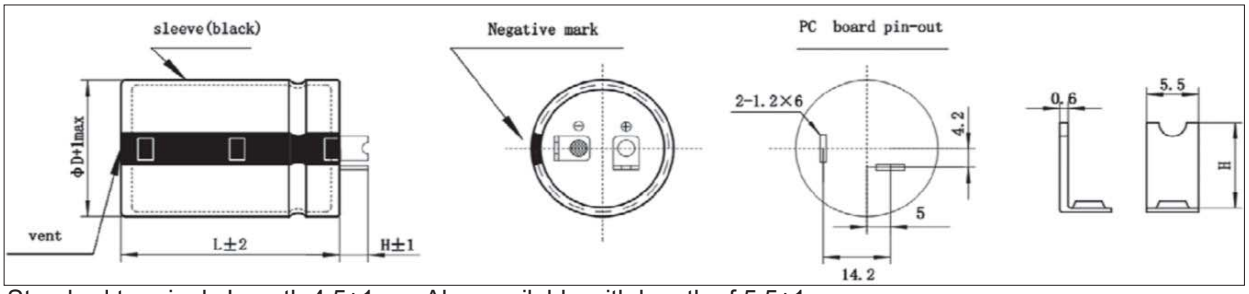
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UC series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	220	22×25	1.16	510	900
200	270	22×25	1.31	420	740
200	330	22×25	1.41	340	600
200	390	22×25	1.43	290	510
200	470	22×30	1.69	240	420
200	470	25×25	1.69	240	420
200	560	22×35	2.06	210	360
200	560	25×30	2.06	210	360
200	560	30×25	2.06	210	360
200	680	22×40	2.26	170	290
200	680	25×30	2.15	170	290
200	680	30×25	2.23	170	290
200	820	22×45	2.62	140	240
200	820	25×35	2.62	140	240
200	820	30×30	2.63	140	240
200	820	35×25	2.69	140	240
200	1000	22×50	2.7	110	200
200	1000	25×40	2.64	110	200
200	1000	30×30	2.63	110	200
200	1000	35×25	2.69	110	200
200	1200	25×45	2.9	97	170
200	1200	30×35	2.9	97	170
200	1200	35×30	3	97	170
200	1500	25×55	3.45	74	130
200	1500	30×45	3.47	74	130
200	1500	35×35	3.45	74	130
200	1800	30×50	4	63	110
200	1800	35×40	4	63	110
200	2200	30×60	4.6	52	90
200	2200	35×45	4.43	52	90
200	2200	40×40	4.52	52	90
200	2700	35×55	5	42	74
200	2700	40×50	5.24	42	74
200	3300	35×65	5.85	34	60
200	3300	40×60	5.91	34	60
200	3900	35×80	6.32	29	51
200	3900	40×60	6	29	51
200	4700	40×70	6.81	24	42
200	5600	40×80	7.45	20	36
200	6800	40×100	8.68	17	29
250	180	22×25	1.01	630	1110
250	220	22×25	1.26	510	900
250	270	22×25	1.41	420	740
250	330	22×30	1.59	340	600
250	330	25×25	1.54	340	600
250	390	22×30	1.6	290	510
250	390	25×25	1.58	290	510
250	470	22×35	1.74	240	420
250	470	25×30	1.74	240	420
250	470	30×25	1.81	240	420
250	560	22×45	2.13	210	360
250	560	25×35	2.05	210	360
250	560	30×25	2.02	210	360
250	680	22×50	2.5	170	290
250	680	25×45	2.55	170	290
250	680	30×30	2.4	170	290
250	820	25×50	2.93	140	240
250	820	30×35	2.8	140	240
250	820	35×30	2.9	140	240
250	1000	25×55	3.07	110	200

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
250	1000	30×45	3.12	110	200
250	1000	35×35	3.07	110	200
250	1200	25×60	3.35	97	170
250	1200	30×50	3.41	97	170
250	1200	35×35	3.21	97	170
250	1500	30×60	4.1	74	130
250	1500	35×45	3.95	74	130
250	1500	40×40	4.05	74	130
250	1800	30×65	4.3	63	110
250	1800	35×50	4.2	63	110
250	1800	40×45	4.3	63	110
250	2200	35×60	4.95	52	90
250	2200	40×50	4.95	52	90
250	2700	35×80	6.1	42	74
250	2700	40×70	6.1	42	74
250	3300	35×80	6.52	34	60
250	3300	40×70	6.61	34	60
250	3900	40×80	7.5	29	51
250	4700	40×100	8.91	24	42
350	82	22×20	0.65	1390	2430
350	100	22×25	0.78	1140	1990
350	100	25×20	0.75	1140	1990
350	120	22×25	1	950	1660
350	120	25×20	0.98	950	1660
350	150	22×30	1.26	760	1330
350	150	25×25	1.26	760	1330
350	180	22×35	1.3	630	1110
350	180	25×30	1.32	630	1110
350	180	30×25	1.38	630	1110
350	220	22×40	1.41	510	900
350	220	25×30	1.48	510	900
350	220	30×25	1.48	510	900
350	270	22×45	1.63	420	740
350	270	25×35	1.66	420	740
350	270	30×30	1.71	420	740
350	270	35×25	1.72	420	740
350	330	22×50	1.9	340	600
350	330	25×40	1.85	340	600
350	330	30×30	1.75	340	600
350	330	35×25	1.78	340	600
350	390	25×45	2.1	290	510
350	390	30×35	2.15	290	510
350	390	35×30	2.2	290	510
350	470	30×40	2.52	240	420
350	470	35×30	2.36	240	420
350	560	30×45	2.63	210	360
350	560	35×35	2.63	210	360
350	680	35×40	2.8	170	290
350	820	35×45	3.36	140	240
350	1000	35×60	4.6	110	200
350	1000	40×50	4.48	110	200
350	1200	35×60	4.65	97	170
350	1200	40×50	4.65	97	170
350	1500	35×80	6.1	74	130
350	1500	40×70	6.1	74	130
350	1500	45×60	6.15	74	130
350	1800	40×80	7	63	110
350	1800	45×70	7	63	110
350	2200	45×80	8.07	52	90
350	2700	45×100	9.48	42	74

CapXon

UC series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	68	22×20	0.67	1670	2930
400	82	22×25	0.81	1390	2430
400	100	22×25	0.82	1140	1990
400	100	25×20	0.8	1140	1990
400	120	22×25	1.01	950	1660
400	120	25×20	1.01	950	1660
400	150	22×25	1.4	760	1330
400	150	22×30	1.48	760	1330
400	150	25×25	1.48	760	1330
400	180	22×30	1.58	630	1110
400	180	22×35	1.65	630	1110
400	180	25×30	1.63	630	1110
400	180	30×25	1.65	630	1110
400	220	22×30	1.74	510	900
400	220	22×35	1.82	510	900
400	220	25×25	1.78	510	900
400	220	25×30	1.8	510	900
400	220	30×25	1.8	510	900
400	270	22×35	1.99	420	740
400	270	22×40	2.06	420	740
400	270	25×30	2.06	420	740
400	270	25×35	2.16	420	740
400	270	30×25	2.06	420	740
400	270	30×30	2.1	420	740
400	330	22×45	2.32	340	600
400	330	22×50	2.4	340	600
400	330	25×35	2.23	340	600
400	330	25×40	2.32	340	600
400	330	30×30	2.23	340	600
400	330	30×35	2.27	340	600
400	330	30×40	2.32	340	600
400	330	35×25	2.23	340	600
400	330	35×35	2.32	340	600
400	390	22×50	2.64	290	510
400	390	25×40	2.5	290	510
400	390	30×30	2.3	290	510
400	390	30×35	2.41	290	510
400	390	30×40	2.64	290	510
400	390	35×25	2.3	290	510
400	390	35×30	2.41	290	510
400	390	35×35	2.64	290	510
400	470	25×45	2.81	240	420
400	470	25×55	2.95	240	420
400	470	30×35	2.61	240	420
400	470	30×40	2.7	240	420
400	470	30×50	2.86	240	420
400	470	35×30	2.61	240	420
400	470	35×40	2.81	240	420
400	470	35×45	2.86	240	420
400	560	25×55	3.24	210	360
400	560	30×40	3.1	210	360
400	560	30×45	3.21	210	360
400	560	30×55	3.36	210	360
400	560	35×35	3.1	210	360
400	560	35×45	3.36	210	360
400	680	30×50	3.4	170	290
400	680	30×55	3.55	170	290
400	680	35×40	3.4	170	290
400	680	35×50	3.55	170	290
400	820	30×55	3.74	140	240

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	820	30×60	3.85	140	240
400	820	35×45	3.45	140	240
400	820	35×50	3.74	140	240
400	820	35×55	3.85	140	240
400	1000	35×55	4.6	110	200
400	1000	35×70	4.76	110	200
400	1000	40×45	4.48	110	200
400	1000	40×60	4.76	110	200
400	1000	45×40	4.48	110	200
400	1200	35×55	4.6	97	170
400	1200	35×60	4.77	97	170
400	1200	35×65	4.9	97	170
400	1200	40×60	4.95	97	170
400	1200	45×50	5.2	97	170
400	1500	35×80	6.2	74	130
400	1500	40×70	6.2	74	130
400	1500	45×60	6.2	74	130
400	1800	40×80	7.1	63	110
400	1800	45×70	7.1	63	110
400	2200	45×85	8.25	52	90
450	68	22×20	0.68	2230	3900
450	82	22×25	0.82	1850	3230
450	100	22×25	0.84	1510	2650
450	120	22×25	1.3	1260	2210
450	120	22×30	1.36	1260	2210
450	120	25×25	1.4	1260	2210
450	150	22×30	1.53	1010	1770
450	150	22×35	1.59	1010	1770
450	150	25×30	1.59	1010	1770
450	150	30×25	1.55	1010	1770
450	180	22×35	1.65	840	1470
450	180	22×40	1.71	840	1470
450	180	25×35	1.71	840	1470
450	180	30×25	1.69	840	1470
450	220	22×35	1.79	690	1210
450	220	22×40	1.88	690	1210
450	220	25×30	1.85	690	1210
450	220	30×30	1.9	690	1210
450	270	22×40	2.15	560	980
450	270	22×45	2.22	560	980
450	270	25×35	2.12	560	980
450	270	30×30	2.12	560	980
450	330	22×50	2.41	460	800
450	330	22×55	2.46	460	800
450	330	25×40	2.41	460	800
450	330	25×45	2.44	460	800
450	330	30×30	2.22	460	800
450	330	30×35	2.41	460	800
450	330	35×25	2.11	460	800
450	390	25×50	2.65	390	680
450	390	30×35	2.51	390	680
450	390	30×40	2.65	390	680
450	390	35×30	2.39	390	680
450	470	25×55	3.09	320	560
450	470	30×40	2.82	320	560
450	470	30×45	3.09	320	560
450	470	35×35	2.82	320	560
450	470	35×40	3.09	320	560
450	470	35×45	3.2	320	560
450	560	25×60	3.4	270	470

CapXon

UC series

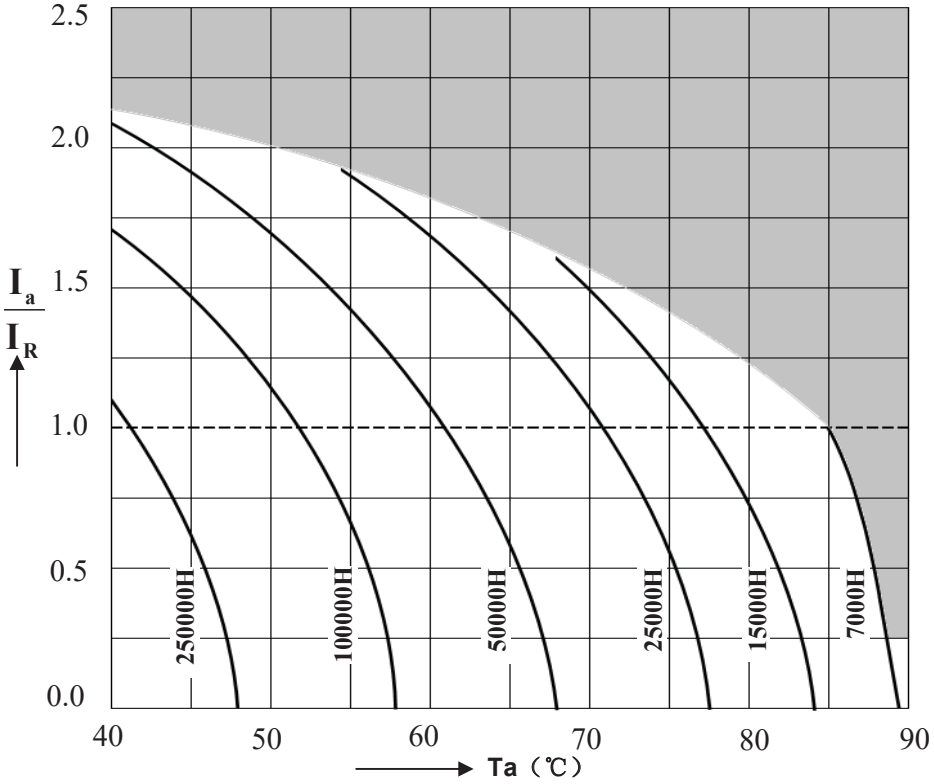
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
450	560	30×50	3.17	270	470
450	560	30×55	3.23	270	470
450	560	35×35	2.82	270	470
450	560	35×40	3.17	270	470
450	680	30×55	3.5	220	390
450	680	35×45	3.4	220	390
450	680	35×50	3.5	220	390
450	680	40×40	3.4	220	390
450	820	35×50	3.6	180	320
450	820	35×55	3.86	180	320
450	820	40×50	4.1	180	320
450	820	45×45	4.1	180	320
450	1000	35×55	4.6	150	270
450	1000	35×60	4.71	150	270
450	1000	40×55	4.71	150	270
450	1000	45×50	4.71	150	270
450	1200	35×80	5.52	130	220
450	1200	40×65	5.43	130	220
450	1200	45×55	5.2	130	220
450	1500	45×70	6.28	100	180
450	1800	45×80	7.1	86	150
450	2200	45×90	8.5	69	120
500	56	22×25	0.6	2710	4740
500	68	22×25	0.64	2230	3900
500	68	25×20	0.63	2230	3900
500	82	22×30	0.76	1850	3230
500	82	25×25	0.76	1850	3230
500	100	22×35	0.87	1510	2650
500	100	25×30	0.87	1510	2650
500	100	30×20	0.85	1510	2650
500	120	22×40	1.05	1260	2210
500	120	25×30	1.05	1260	2210
500	120	30×25	1.05	1260	2210
500	150	22×45	1.2	1010	1770
500	150	25×35	1.2	1010	1770
500	150	30×30	1.2	1010	1770
500	150	35×25	1.2	1010	1770
500	180	22×50	1.35	840	1470
500	180	25×40	1.31	840	1470
500	180	30×30	1.3	840	1470
500	180	35×25	1.23	840	1470
500	220	30×35	1.52	690	1210
500	220	35×30	1.55	690	1210
500	270	30×40	1.78	560	980
500	270	35×35	1.83	560	980
500	330	30×50	2.16	460	800
500	330	35×35	2.04	460	800
500	390	35×45	2.45	390	680
500	390	35×50	2.58	390	680
500	470	35×50	2.8	320	560
500	470	35×55	2.92	320	560
500	560	35×60	3.37	270	470
500	560	40×50	3.32	270	470
500	680	35×70	3.92	220	390
500	680	40×55	3.83	220	390
500	680	40×60	3.92	220	390
500	820	35×80	4.57	180	320
500	820	40×60	4.35	180	320
500	1000	40×80	5.45	150	270
500	1500	40×100	6.58	100	180

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
575	180	30×45	1.16	840	1470
575	220	30×50	1.31	690	1210
575	270	30×60	1.65	560	980
575	270	35×45	1.65	560	980
575	330	30×70	1.76	460	800
575	330	35×50	1.76	460	800
575	330	40×45	1.76	460	800
575	390	30×85	2	390	680
575	390	35×60	2	390	680
575	390	40×55	2	390	680
575	470	35×70	2.25	320	560
575	470	40×60	2.25	320	560
575	470	45×50	2.25	320	560
575	560	35×80	2.5	270	470
575	560	40×70	2.5	270	470
575	560	45×55	2.5	270	470
575	680	35×95	2.85	220	390
575	680	40×80	2.85	220	390
575	680	45×65	2.85	220	390
575	820	40×100	3.2	180	320
575	820	45×75	3.2	180	320
575	1000	45×90	3.36	150	270
575	1200	45×105	3.56	130	220
600	150	30×45	1.1	1010	1770
600	180	30×50	1.11	840	1470
600	220	30×60	1.24	690	1210
600	270	30×70	1.35	560	980
600	330	30×80	1.36	460	800
600	330	40×50	1.36	460	800
600	390	40×60	1.6	390	680
600	470	40×70	1.75	320	560
600	470	45×55	1.75	320	560
600	560	40×80	1.9	270	470
600	560	45×60	1.9	270	470
600	680	40×90	2	220	390
600	680	45×70	2	220	390
600	820	45×85	2.5	180	320
600	1000	45×100	2.9	150	270
630	150	30×45	1	1010	1770
630	180	30×50	1.02	840	1470
630	220	30×60	1.11	690	1210
630	270	30×70	1.3	560	980
630	330	30×85	1.33	460	800
630	330	40×50	1.33	460	800
630	470	40×70	1.7	320	560
630	470	45×55	1.7	320	560
630	560	40×80	1.8	270	470
630	560	45×65	1.8	270	470
630	680	40×95	1.95	220	390
630	680	45×75	1.95	220	390
630	820	45×90	2.3	180	320
630	1000	45×105	2.3	150	270

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

UD series

UD Series 85℃

Features

Standard capacitors

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies
- Used for air conditioner,general-purpose inverter

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Specifications

Item	Performance Characteristics	
Operating Temperature Range	-40 to +85℃	-25 to +85℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	47 ~ 2700 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V): 200~420 / 450~550 D.F.(%) max: 15 / 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA)After 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 85 ℃; VR ,IAC' R	> 10000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 ℃; VR	5000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 85 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz	
Sectional specification	IEC 60384-4 and JIS-C-5101	

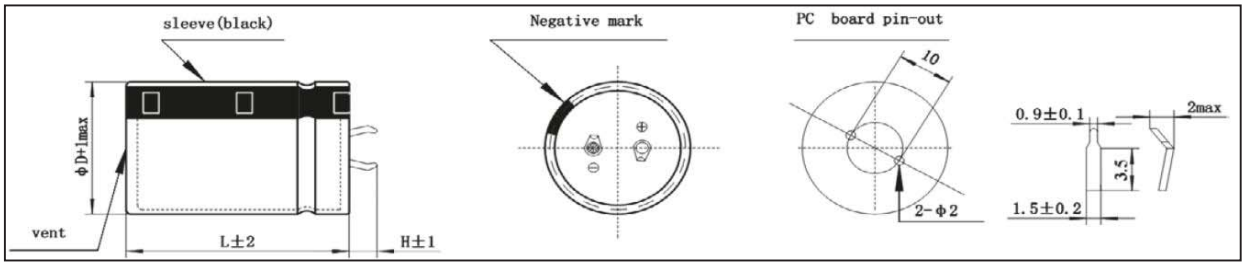
VR	200~250 V	315~ 450 V	500 V	550~ 600 V
Z-25℃/	4	8	8	12
Z-40℃/	7	10	-	-

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

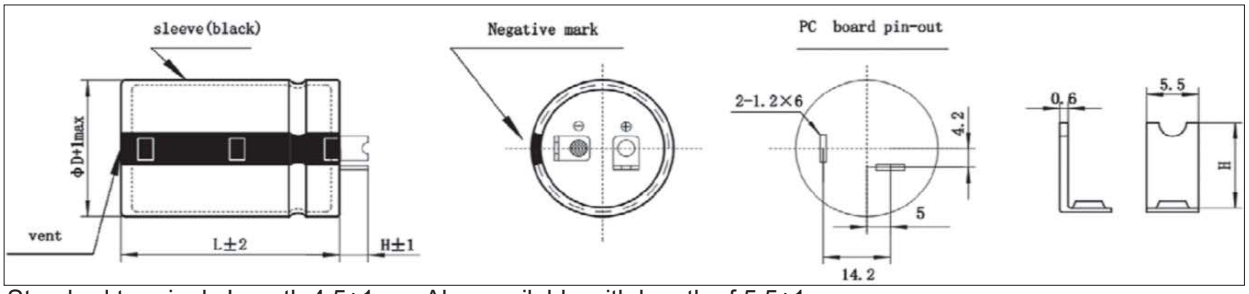
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UD series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	330	22×25	1.55	330	600
200	330	25×25	1.65	330	600
200	390	22×30	1.76	280	510
200	390	25×25	1.66	280	510
200	470	22×30	1.98	230	420
200	470	25×25	1.93	230	420
200	560	22×35	2.25	200	360
200	560	25×30	2.15	200	360
200	680	22×40	2.62	160	290
200	680	25×35	2.56	160	290
200	680	30×25	2.48	160	290
200	820	22×45	2.99	130	240
200	820	25×35	2.84	130	240
200	820	30×30	2.6	130	240
200	820	35×25	2.42	130	240
200	1000	25×45	3.29	110	200
200	1000	30×30	2.76	110	200
200	1000	35×25	2.7	110	200
200	1200	25×50	3.75	94	170
200	1200	30×35	3.54	94	170
200	1200	35×30	3.54	94	170
200	1500	30×40	3.92	72	130
200	1500	35×35	3.92	72	130
200	1800	30×50	4.75	61	110
200	1800	35×40	4.7	61	110
200	2200	30×55	5.31	50	90
200	2200	35×45	5.3	50	90
200	2700	35×50	5.48	41	74
250	150	22×25	0.95	740	1330
250	180	22×25	1.15	620	1110
250	220	22×30	1.29	500	900
250	220	25×25	1.31	500	900
250	270	22×30	1.47	410	740
250	270	25×25	1.47	410	740
250	330	22×30	1.68	330	600
250	330	25×25	1.68	330	600
250	390	22×35	2	280	510
250	390	25×30	1.95	280	510
250	390	30×25	2.1	280	510
250	470	22×40	2.21	230	420
250	470	25×30	2.15	230	420
250	470	35×25	2.2	230	420
250	560	22×40	2.5	200	360
250	560	25×35	2.5	200	360
250	560	30×30	2.51	200	360
250	560	35×25	2.53	200	360
250	680	22×50	2.91	160	290
250	680	25×40	2.8	160	290
250	680	30×30	2.75	160	290
250	680	35×25	2.64	160	290
250	820	25×45	3.12	130	240
250	820	30×35	3.01	130	240
250	820	35×30	3	130	240
250	1000	25×50	3.6	110	200
250	1000	30×40	3.46	110	200
250	1000	35×30	3.39	110	200
250	1200	30×45	3.93	94	170
250	1200	35×35	3.81	94	170
250	1500	30×50	4.52	72	130
250	1500	35×40	4.52	72	130

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
250	1800	35×45	5.21	61	110
250	2200	35×55	5.7	50	90
350	560	35×50	3.21	200	360
350	680	35×40	3.19	160	290
350	820	35×50	3.67	130	240
350	1000	35×55	4.23	110	200
350	1500	40×80	6.52	72	130
350	1500	45×70	6.52	72	130
350	2200	45×100	8.7	50	90
400	82	22×25	0.79	1350	2430
400	100	22×25	0.9	1110	1990
400	100	25×25	1.05	1110	1990
400	120	22×30	1.05	920	1660
400	120	25×25	1.05	920	1660
400	150	22×30	1.15	740	1330
400	150	25×25	1.15	740	1330
400	180	22×35	1.31	620	1110
400	180	25×30	1.32	620	1110
400	180	30×25	1.32	620	1110
400	220	22×40	1.55	500	900
400	220	25×35	1.52	500	900
400	220	30×25	1.51	500	900
400	220	35×25	1.55	500	900
400	270	22×45	1.8	410	740
400	270	25×40	1.76	410	740
400	270	30×30	1.76	410	740
400	270	35×25	1.72	410	740
400	330	25×45	2.05	330	600
400	330	30×35	2.02	330	600
400	330	35×25	2.01	330	600
400	390	25×50	2.33	280	510
400	390	30×35	2.18	280	510
400	390	35×30	2.24	280	510
400	470	25×55	2.68	230	420
400	470	30×40	2.65	230	420
400	470	35×35	2.59	230	420
400	560	30×45	3	200	360
400	560	35×35	2.98	200	360
400	680	30×55	3.51	160	290
400	680	35×40	3.2	160	290
400	680	35×45	3.42	160	290
400	820	35×50	3.72	130	240
400	1000	35×55	4.3	110	200
400	1200	35×65	4.82	94	170
400	1200	40×55	4.8	94	170
400	1500	40×80	6.62	72	130
400	1500	45×60	6.31	72	130
400	1800	45×80	7.6	61	110
450	68	22×25	0.68	2170	3900
450	82	22×25	0.81	1790	3230
450	82	25×25	0.81	1790	3230
450	100	22×30	0.94	1470	2650
450	100	30×25	0.98	1470	2650
450	120	22×30	1.05	1230	2210
450	120	25×25	1.09	1230	2210
450	150	22×35	1.21	980	1770
450	150	25×30	1.21	980	1770
450	150	30×25	1.21	980	1770
450	180	22×40	1.39	820	1470
450	180	25×35	1.39	820	1470

CapXon

UD series

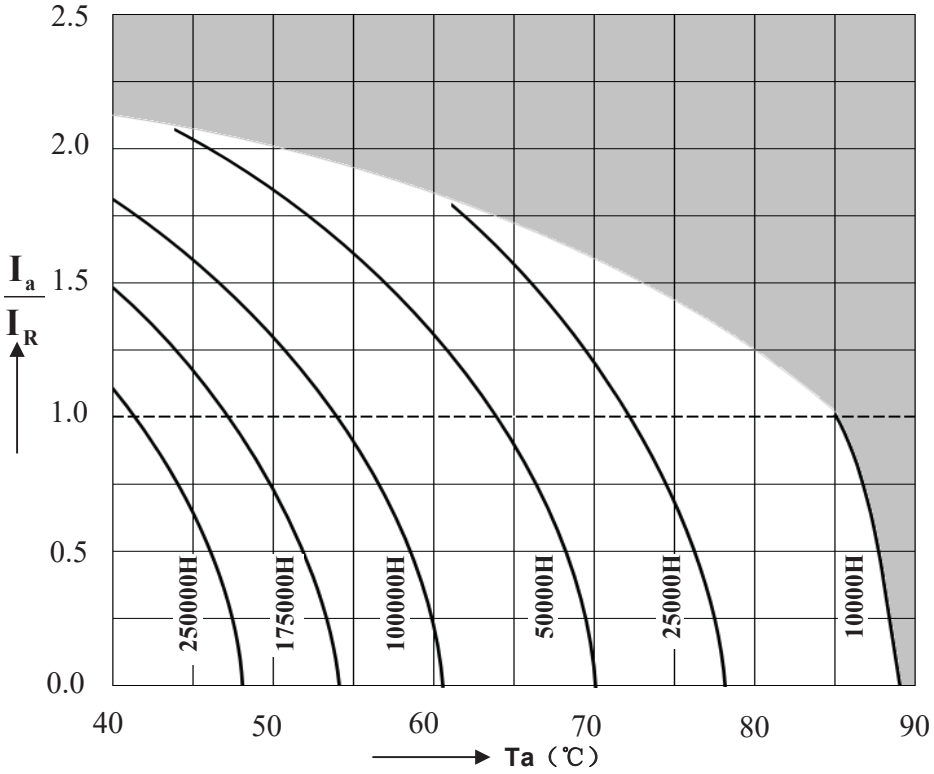
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
450	180	30×25	1.35	820	1470
450	220	22×50	1.68	670	1210
450	220	25×40	1.68	670	1210
450	220	30×30	1.62	670	1210
450	220	35×25	1.6	670	1210
450	270	25×45	1.85	540	980
450	270	30×35	1.82	540	980
450	270	35×30	1.91	540	980
450	330	25×50	2.18	440	800
450	330	30×40	2.21	440	800
450	330	35×30	2.2	440	800
450	390	30×45	2.51	380	680
450	390	35×35	2.5	380	680
450	470	30×50	2.88	310	560
450	470	35×40	2.8	310	560
450	560	30×55	3.25	260	470
450	560	35×45	3.26	260	470
450	680	35×50	3.48	220	390
450	1500	45×100	7.24	100	180
500	47	22×25	0.52	3130	5640
500	68	22×30	0.7	2170	3900
500	68	25×25	0.7	2170	3900
500	82	25×30	0.82	1790	3230
500	100	25×35	0.97	1470	2650
500	100	30×25	0.97	1470	2650
500	120	25×35	1.09	1230	2210
500	120	30×30	1.1	1230	2210
500	150	25×40	1.26	980	1770
500	150	30×30	1.3	980	1770
500	150	35×25	1.32	980	1770
500	180	25×45	1.5	820	1470
500	180	30×35	1.53	820	1470
500	180	35×30	1.55	820	1470
500	220	25×55	1.61	670	1210
500	220	30×40	1.75	670	1210
500	220	35×35	1.8	670	1210
500	270	30×45	2.01	540	980
500	270	35×35	2.03	540	980
500	330	30×55	2.32	440	800
500	330	35×40	2.32	440	800
500	390	35×45	2.63	380	680
500	470	35×55	2.99	310	560
500	560	35×65	3.24	260	470
500	680	40×60	3.9	220	390
550	56	25×25	0.66	2630	4740
550	68	25×30	0.75	2170	3900
550	82	25×35	0.84	1790	3230
550	82	30×25	0.87	1790	3230
550	100	25×35	1.01	1470	2650
550	100	30×30	1.01	1470	2650
550	120	25×40	1.12	1230	2210
550	120	30×35	1.15	1230	2210
550	120	35×25	1.15	1230	2210
550	150	25×50	1.36	980	1770
550	150	30×35	1.3	980	1770
550	150	35×30	1.45	980	1770
550	180	25×55	1.57	820	1470
550	180	30×40	1.58	820	1470
550	180	35×35	1.63	820	1470
550	220	30×50	1.87	670	1210

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
550	220	35×40	1.87	670	1210
550	270	30×55	2.12	540	980
550	270	35×45	2.15	540	980
550	330	35×50	2.45	440	800
550	390	35×55	2.78	380	680
600	47	25×25	0.61	3130	5640
600	56	25×30	0.68	2630	4740
600	68	25×35	0.82	2170	3900
600	68	30×25	0.82	2170	3900
600	82	25×35	0.88	1790	3230
600	82	30×30	0.92	1790	3230
600	100	25×40	1.05	1470	2650
600	100	30×35	1.07	1470	2650
600	100	35×25	1.11	1470	2650
600	120	25×50	1.19	1230	2210
600	120	30×35	1.23	1230	2210
600	120	35×30	1.31	1230	2210
600	150	25×55	1.53	980	1770
600	150	30×45	1.53	980	1770
600	150	35×35	1.53	980	1770
600	180	30×50	1.68	820	1470
600	180	35×40	1.72	820	1470
600	220	30×55	1.95	670	1210
600	220	35×45	1.95	670	1210
600	270	35×50	2.26	540	980

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions



CapXon

UJ series

UJ Series 105℃

Features

Standard capacitors

Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies
- ◆ Used for air conditioner,general-purpose inverter

Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Aluminum case designed explosion-proof vent
- ◆ Snap-in solder pins to hold component in place on PC-board

Features

- ◆ High reliability
- ◆ Long useful life
- ◆ High ripple current capability
- ◆ Aluminum case designed explosion-proof vent
- ◆ RoHS-compatible

Specifications

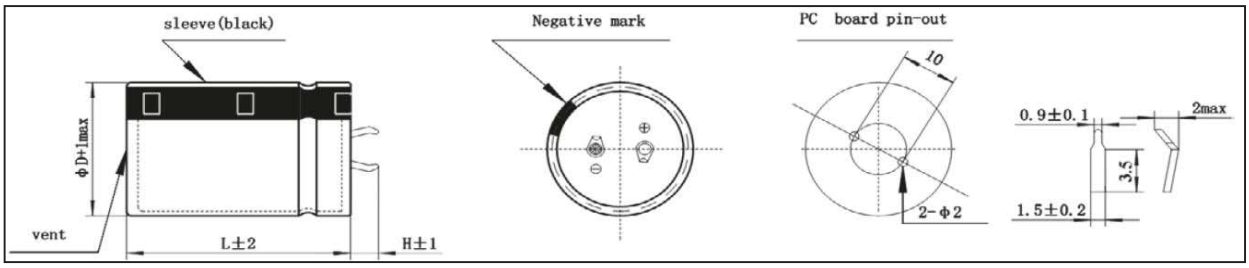
Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	47 ~ 3300 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V): 200~420 / 450~550 D.F.(%) max: 15 / 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA) After 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 105 ℃; VR ,IAC' R	> 5000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 ℃; VR	2000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 105 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz VR: 200~250 V / 315~ 450 V / ⩾500 V Z-25℃/: 3 / 8 / 8 Z-40℃/: 7 / 10 / -	
Sectional specification	IEC 60384-4 and JIS-C-5101	

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

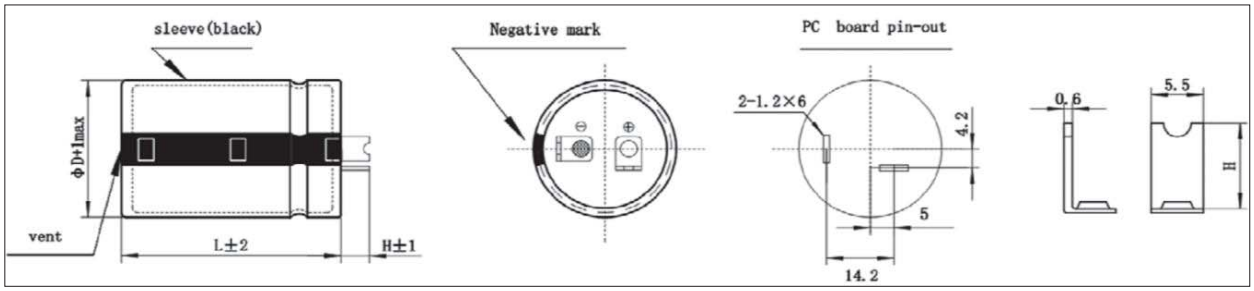
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UJ series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	330	22×25	1.13	330	600
200	390	22×25	1.21	280	510
200	390	22×30	1.25	280	510
200	390	25×25	1.31	280	510
200	470	22×30	1.4	230	420
200	470	25×25	1.4	230	420
200	470	25×30	1.52	230	420
200	560	22×35	1.61	200	360
200	560	25×30	1.61	200	360
200	560	30×25	1.62	200	360
200	680	22×40	1.86	160	290
200	680	25×30	1.69	160	290
200	680	30×25	1.98	160	290
200	820	22×45	2.14	130	240
200	820	25×35	2.14	130	240
200	820	30×30	2.29	130	240
200	1000	22×50	2.48	110	200
200	1000	25×40	2.48	110	200
200	1000	30×30	2.52	110	200
200	1000	35×25	2.44	110	200
200	1200	25×45	2.89	94	170
200	1200	30×35	2.89	94	170
200	1200	35×30	3.03	94	170
200	1500	25×55	3.52	72	130
200	1500	30×40	3.59	72	130
200	1500	35×35	3.52	72	130
200	1800	30×45	4.09	61	110
200	1800	35×35	3.77	61	110
200	2200	30×55	4.82	50	90
200	2200	35×45	4.82	50	90
200	2700	35×50	5.16	41	74
200	3300	35×55	5.85	33	60
250	220	22×25	0.91	500	900
250	270	22×25	1.03	410	740
250	330	22×30	1.2	330	600
250	390	22×35	1.37	280	510
250	390	25×25	1.26	280	510
250	470	22×35	1.53	230	420
250	470	25×30	1.53	230	420
250	470	30×25	1.69	230	420
250	560	22×40	1.76	200	360
250	560	25×35	1.68	200	360
250	680	22×45	2.04	160	290
250	680	25×40	2.13	160	290
250	680	30×30	2.13	160	290
250	680	35×25	2.12	160	290
250	820	25×45	2.23	130	240
250	820	30×35	2.45	130	240
250	820	35×30	2.62	130	240
250	1000	25×50	2.57	110	200
250	1000	30×40	2.85	110	200
250	1000	35×30	2.77	110	200
250	1200	30×45	3.42	94	170
250	1200	35×35	3.26	94	170
250	1500	30×50	3.72	72	130
250	1500	35×40	3.78	72	130
250	1800	35×45	4.09	61	110
250	2200	35×55	5.04	50	90
350	100	22×25	0.59	1110	1990
350	120	22×30	0.69	920	1660

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
350	120	25×25	0.69	920	1660
350	150	22×35	0.8	740	1330
350	180	25×30	0.85	620	1110
350	180	30×25	0.89	620	1110
350	220	22×40	0.99	500	900
350	220	25×40	1.1	500	900
350	220	30×30	1.08	500	900
350	220	35×25	1.08	500	900
350	270	25×45	1.28	410	740
350	270	30×35	1.25	410	740
350	270	35×25	1.25	410	740
350	330	25×50	1.55	330	600
350	330	30×35	1.46	330	600
350	330	35×30	1.46	330	600
350	390	35×40	1.92	280	510
350	470	35×45	2.17	230	420
350	560	35×45	2.41	200	360
350	560	40×40	2.46	200	360
350	680	35×55	2.79	160	290
350	680	40×45	2.79	160	290
350	820	35×60	3.21	130	240
350	820	40×50	3.15	130	240
350	820	45×40	3.11	130	240
350	1000	35×60	3.23	110	200
350	1000	40×50	3.26	110	200
350	1200	40×55	3.68	94	170
350	1500	40×65	4.56	72	130
350	1800	40×75	5.67	61	110
400	100	22×25	0.65	1110	1990
400	120	22×25	0.92	920	1660
400	150	22×30	1.08	740	1330
400	180	22×30	1.15	620	1110
400	180	25×25	1.12	620	1110
400	220	22×35	1.32	500	900
400	220	25×30	1.3	500	900
400	270	22×40	1.5	410	740
400	270	25×35	1.49	410	740
400	270	30×25	1.33	410	740
400	330	22×50	1.76	330	600
400	330	25×40	1.68	330	600
400	330	30×30	1.55	330	600
400	330	35×25	1.44	330	600
400	390	22×55	1.94	280	510
400	390	25×45	1.86	280	510
400	390	30×35	1.75	280	510
400	390	35×30	1.75	280	510
400	470	25×50	2.07	230	420
400	470	30×40	1.97	230	420
400	470	35×30	1.91	230	420
400	560	25×60	2.37	200	360
400	560	30×45	2.18	200	360
400	560	35×35	1.92	200	360
400	680	30×50	2.41	160	290
400	680	35×40	2.35	160	290
400	820	30×60	2.76	130	240
400	820	35×45	2.67	130	240
400	1000	35×55	3.16	110	200
400	1000	40×50	3.24	110	200
400	1200	35×60	3.56	94	170
400	1200	40×55	3.64	94	170

CapXon

UJ series

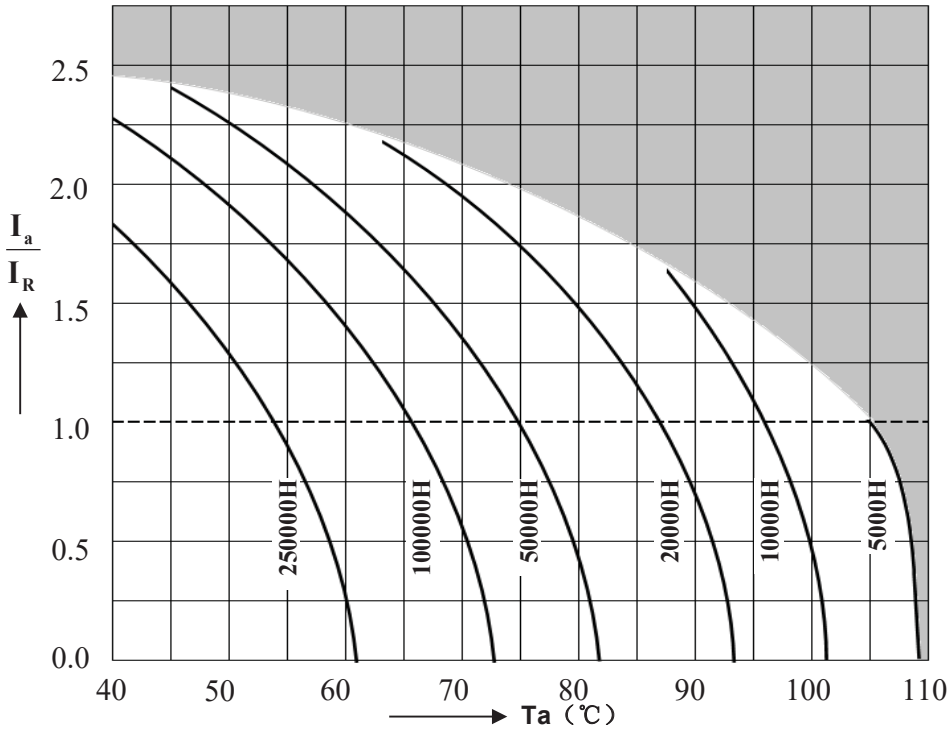
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	1500	45×70	4.68	72	130
400	1800	45×80	5.29	61	110
450	82	22×25	0.59	1790	3230
450	100	22×30	0.69	1470	2650
450	100	25×25	0.69	1470	2650
450	120	22×35	0.72	1230	2210
450	150	22×35	0.92	980	1770
450	150	25×30	0.91	980	1770
450	150	30×25	0.97	980	1770
450	180	22×40	1.28	820	1470
450	180	25×30	1.2	820	1470
450	180	30×25	1.18	820	1470
450	220	22×45	1.44	670	1210
450	220	25×35	1.37	670	1210
450	220	30×30	1.36	670	1210
450	330	22×60	1.86	440	800
450	330	25×50	1.82	440	800
450	330	30×35	1.64	440	800
450	330	35×30	1.64	440	800
450	390	25×55	2.01	380	680
450	390	30×40	1.83	380	680
450	390	35×35	1.83	380	680
450	470	25×60	2.21	310	560
450	470	30×45	2.05	310	560
450	470	35×40	2.05	310	560
450	560	30×50	2.26	260	470
450	560	35×45	2.18	260	470
450	680	30×60	2.59	220	390
450	680	35×50	2.58	220	390
450	820	35×60	2.8	180	320
450	820	40×50	2.8	180	320
450	1000	35×65	3.21	150	270
450	1000	40×55	3.21	150	270
450	1200	40×70	3.54	120	220
500	56	22×25	0.63	2630	4740
500	82	22×35	0.82	1790	3230
500	82	25×25	0.78	1790	3230
500	120	22×45	1.05	1230	2210
500	120	25×35	1.02	1230	2210
500	120	30×25	0.97	1230	2210
500	150	22×50	1.2	980	1770
500	150	25×40	1.17	980	1770
500	150	30×30	1.13	980	1770
500	150	35×25	1.09	980	1770
500	180	22×60	1.37	820	1470
500	180	25×45	1.31	820	1470
500	180	30×35	1.28	820	1470
500	180	35×30	1.26	820	1470
500	220	25×50	1.46	670	1210
500	220	30×40	1.45	670	1210
500	220	35×35	1.44	670	1210
500	270	25×60	1.7	540	980
500	270	30×45	1.63	540	980
500	270	35×35	1.63	540	980
500	330	30×50	1.81	440	800
500	330	35×40	1.71	440	800
500	390	30×60	2.06	380	680
500	390	35×50	2.06	380	680
500	470	35×55	2.19	310	560
500	560	35×60	2.65	260	470

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
500	680	40×60	3	220	390
500	820	40×70	4	180	320
500	1000	40×80	4.68	150	270
550	47	25×25	0.47	3130	5640
550	56	25×30	0.54	2630	4740
550	68	25×35	0.62	2170	3900
550	68	30×25	0.65	2170	3900
550	82	25×35	0.69	1790	3230
550	82	30×30	0.73	1790	3230
550	100	25×40	0.8	1470	2650
550	100	30×35	0.84	1470	2650
550	100	35×25	0.87	1470	2650
550	120	25×50	0.92	1230	2210
550	120	30×35	0.94	1230	2210
550	120	35×30	1.04	1230	2210
550	150	25×55	1.09	980	1770
550	150	30×45	1.17	980	1770
550	150	35×35	1.21	980	1770
550	180	30×50	1.33	820	1470
550	180	35×40	1.36	820	1470
550	220	30×55	1.54	670	1210
550	220	35×45	1.56	670	1210
550	270	35×50	1.79	540	980

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions



CapXon

UK series

UK Series 105℃

Features

Standard capacitors

Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies
- ◆ Used for air conditioner,general-purpose inverter

Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Aluminum case designed explosion-proof vent
- ◆ Snap-in solder pins to hold component in place on PC-board

Features

- ◆ High reliability
- ◆ Long useful life
- ◆ High ripple current capability
- ◆ Aluminum case designed explosion-proof vent
- ◆ RoHS-compatible

Specifications

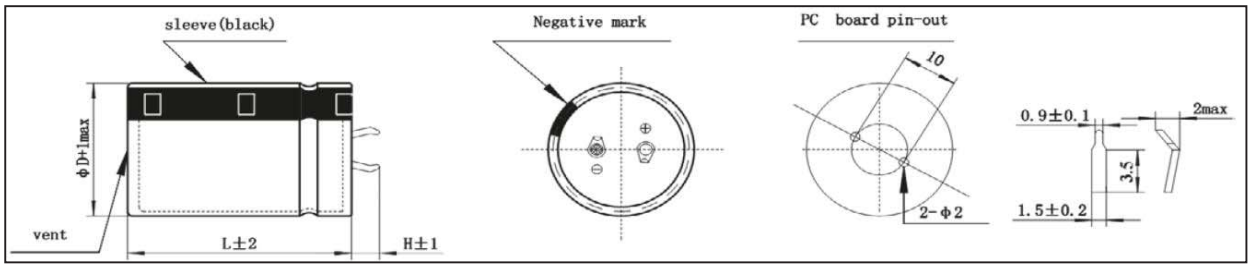
Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	47 ~ 2200 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V) 200~420 450~500 D.F.(%) max 15 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA) after 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 105 ℃; VR ,IAC' R	> 8000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 ℃; VR	3000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 105 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz VR 200~250 V 315~ 450 V ⩾500 V Z-25℃/ 3 8 8 Z-40℃/ 7 10 -	
Sectional specification	IEC 60384-4 and JIS-C-5101	

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

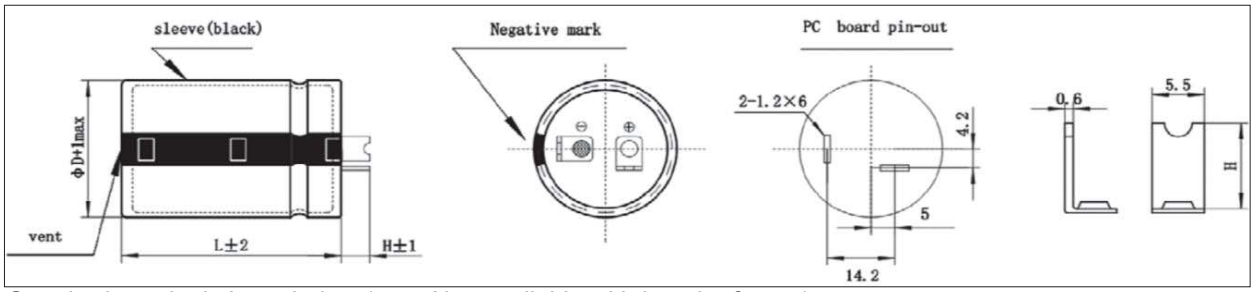
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	330	22×25	1.38	320	600
200	390	22×25	1.45	280	510
200	470	22×30	1.68	230	420
200	470	25×25	1.68	230	420
200	560	22×35	1.81	190	360
200	560	25×30	1.78	190	360
200	560	30×25	1.96	190	360
200	680	22×40	2.15	160	290
200	680	25×35	2.06	160	290
200	680	30×25	2.17	160	290
200	820	22×45	2.42	130	240
200	820	25×35	2.22	130	240
200	820	30×25	2.34	130	240
200	1000	25×45	2.72	110	200
200	1000	30×30	2.91	110	200
200	1000	35×25	3.14	110	200
200	1200	25×50	2.87	92	170
200	1200	30×35	3.42	92	170
200	1200	35×30	3.38	92	170
200	1500	25×60	3.29	70	130
200	1500	30×45	4.12	70	130
200	1500	35×35	3.91	70	130
200	1800	30×50	4.33	59	110
200	1800	35×40	4.46	59	110
200	2200	30×60	4.75	49	90
200	2200	35×45	5.11	49	90
250	220	22×25	1.15	490	900
250	270	22×25	1.21	400	740
250	330	22×30	1.52	320	600
250	330	25×25	1.45	320	600
250	390	22×35	1.72	280	510
250	390	22×40	1.82	280	510
250	390	25×30	1.58	280	510
250	390	30×25	1.62	280	510
250	470	22×40	1.96	230	420
250	470	25×30	1.72	230	420
250	470	30×25	1.88	230	420
250	560	22×45	2.16	190	360
250	560	25×35	1.96	190	360
250	560	30×30	2.22	190	360
250	560	35×25	2.08	190	360
250	680	22×50	2.41	160	290
250	680	25×40	2.21	160	290
250	680	30×30	2.35	160	290
250	680	35×25	2.5	160	290
250	820	30×35	2.78	130	240
250	820	35×30	2.9	130	240
250	1000	30×40	3.3	110	200
250	1000	35×35	3.36	110	200
250	1200	30×50	3.85	92	170
250	1200	35×40	3.82	92	170
250	1500	30×55	4.33	70	130
250	1500	35×45	4.34	70	130
250	1800	35×50	4.7	59	110
250	2200	35×60	5.58	49	90
315	150	22×25	1	720	1330
315	180	22×30	1.15	600	1110
315	220	22×30	1.3	490	900
315	220	25×25	1.3	490	900
315	270	22×35	1.41	400	740

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
315	270	25×30	1.42	400	740
315	330	22×40	1.74	320	600
315	330	25×35	1.58	320	600
315	330	30×25	1.62	320	600
315	390	22×50	1.94	280	510
315	390	25×35	1.7	280	510
315	390	30×30	1.78	280	510
315	390	35×25	1.8	280	510
315	470	22×55	2.05	230	420
315	470	25×45	2.04	230	420
315	470	30×35	2.03	230	420
315	470	35×30	2.07	230	420
315	560	25×50	2.28	190	360
315	560	30×35	2.23	190	360
315	560	35×30	2.25	190	360
315	680	25×55	2.7	160	290
315	680	30×40	2.66	160	290
315	680	35×35	2.7	160	290
315	820	30×50	3.12	130	240
315	820	35×40	3.1	130	240
315	1000	30×55	3.64	110	200
315	1000	35×45	3.56	110	200
315	1200	35×50	4.05	92	170
315	1500	35×60	4.35	70	130
350	100	22×25	0.74	1080	1990
350	100	25×20	0.52	1080	1990
350	120	22×25	0.92	900	1660
350	150	22×30	1.06	720	1330
350	180	22×30	1.17	600	1110
350	180	25×25	1.17	600	1110
350	220	22×35	1.32	490	900
350	220	22×40	1.4	490	900
350	220	25×30	1.33	490	900
350	220	30×25	1.35	490	900
350	270	22×45	1.55	400	740
350	270	25×35	1.47	400	740
350	270	30×25	1.37	400	740
350	330	22×50	1.76	320	600
350	330	25×40	1.68	320	600
350	330	30×30	1.64	320	600
350	330	35×25	1.69	320	600
350	390	25×45	1.86	280	510
350	390	30×35	1.84	280	510
350	390	35×30	1.87	280	510
350	470	25×50	2.09	230	420
350	470	30×40	2.09	230	420
350	470	35×30	2.08	230	420
350	560	30×45	2.24	190	360
350	560	35×35	2.26	190	360
350	680	30×50	2.67	160	290
350	680	35×40	2.71	160	290
350	820	35×45	3.11	130	240
350	820	35×50	3.25	130	240
350	1000	35×55	3.58	110	200
350	1200	35×60	4.1	92	170
400	82	22×25	0.85	1310	2430
400	100	22×25	1.05	1080	1990
400	120	22×30	1.25	900	1660
400	120	25×25	1.25	900	1660
400	120	25×30	1.35	900	1660

CapXon

UK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	150	22×35	1.4	720	1330
400	150	22×40	1.48	720	1330
400	150	25×25	1.3	720	1330
400	150	25×30	1.4	720	1330
400	150	30×25	1.45	720	1330
400	180	22×35	1.42	600	1110
400	180	22×40	1.51	600	1110
400	180	25×30	1.45	600	1110
400	180	25×35	1.55	600	1110
400	180	30×25	1.5	600	1110
400	180	30×30	1.62	600	1110
400	220	22×45	1.72	490	900
400	220	25×35	1.66	490	900
400	220	25×45	1.85	490	900
400	220	30×25	1.61	490	900
400	220	30×30	1.73	490	900
400	220	35×25	1.78	490	900
400	270	22×50	1.88	400	740
400	270	25×40	1.83	400	740
400	270	25×50	2.02	400	740
400	270	30×30	1.81	400	740
400	270	30×35	1.92	400	740
400	270	35×25	1.85	400	740
400	270	35×30	1.98	400	740
400	330	25×45	1.98	320	600
400	330	25×50	2.07	320	600
400	330	30×35	1.98	320	600
400	330	30×40	2.09	320	600
400	330	35×30	2.33	320	600
400	330	35×35	2.4	320	600
400	390	25×50	2.09	280	510
400	390	30×40	2.1	280	510
400	390	30×45	2.31	280	510
400	390	35×30	2.34	280	510
400	390	35×35	2.52	280	510
400	470	30×45	2.72	230	420
400	470	30×50	2.85	230	420
400	470	35×35	2.69	230	420
400	470	35×40	2.85	230	420
400	470	35×45	2.98	230	420
400	560	30×50	2.88	190	360
400	560	35×40	2.86	190	360
400	560	35×45	3.18	190	360
400	680	30×50	2.9	160	290
400	680	35×45	3.2	160	290
400	680	35×50	3.35	160	290
400	820	35×55	3.54	130	240
400	820	35×60	3.68	130	240
400	1000	35×55	3.62	110	200
400	1000	35×60	3.76	110	200
400	1200	35×60	4.15	92	170
450	68	22×25	0.93	2110	3900
450	82	22×25	0.98	1750	3230
450	100	22×30	1.07	1430	2650
450	100	25×25	1.07	1430	2650
450	120	22×35	1.39	1190	2210
450	120	22×40	1.47	1190	2210
450	120	25×30	1.4	1190	2210
450	120	25×35	1.5	1190	2210
450	120	30×25	1.45	1190	2210

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
450	150	22×40	1.6	960	1770
450	150	25×30	1.52	960	1770
450	150	25×35	1.62	960	1770
450	150	30×25	1.58	960	1770
450	150	30×30	1.7	960	1770
450	150	35×25	1.74	960	1770
450	180	22×45	1.62	790	1470
450	180	22×50	1.7	790	1470
450	180	25×35	1.63	790	1470
450	180	25×40	1.71	790	1470
450	180	30×30	1.71	790	1470
450	180	30×35	1.74	790	1470
450	180	35×25	1.76	790	1470
450	180	35×30	1.89	790	1470
450	220	25×40	1.78	650	1210
450	220	25×45	1.87	650	1210
450	220	30×30	1.75	650	1210
450	220	30×35	1.87	650	1210
450	220	35×25	1.8	650	1210
450	220	35×30	1.92	650	1210
450	270	25×50	2.03	530	980
450	270	30×30	1.82	530	980
450	270	30×35	1.93	530	980
450	270	35×30	1.99	530	980
450	270	35×35	2.12	530	980
450	330	30×40	2.11	430	800
450	330	30×45	2.22	430	800
450	330	35×30	2.34	430	800
450	330	35×35	2.49	430	800
450	390	30×45	2.25	370	680
450	390	30×50	2.4	370	680
450	390	35×40	2.64	370	680
450	390	35×45	2.77	370	680
450	470	30×50	2.86	300	560
450	470	35×35	2.7	300	560
450	470	35×40	2.84	300	560
450	470	35×45	2.99	300	560
450	560	35×50	3.16	250	470
450	560	35×55	3.29	250	470
450	680	35×50	3.2	210	390
450	680	35×60	3.64	210	390
450	820	35×60	3.69	170	320
450	820	35×65	3.82	170	320
500	47	22×25	0.45	3050	5640
500	56	22×30	0.52	2560	4740
500	68	22×30	0.52	2110	3900
500	68	22×35	0.56	2110	3900
500	68	25×25	0.54	2110	3900
500	68	25×30	0.58	2110	3900
500	82	22×35	0.7	1750	3230
500	82	25×30	0.71	1750	3230
500	100	22×40	0.81	1430	2650
500	100	25×35	0.86	1430	2650
500	100	30×30	0.85	1430	2650
500	120	22×50	0.98	1190	2210
500	120	25×40	0.95	1190	2210
500	120	30×35	1	1190	2210
500	120	35×30	1.03	1190	2210
500	150	22×50	1.1	960	1770
500	150	25×45	1.13	960	1770

CapXon

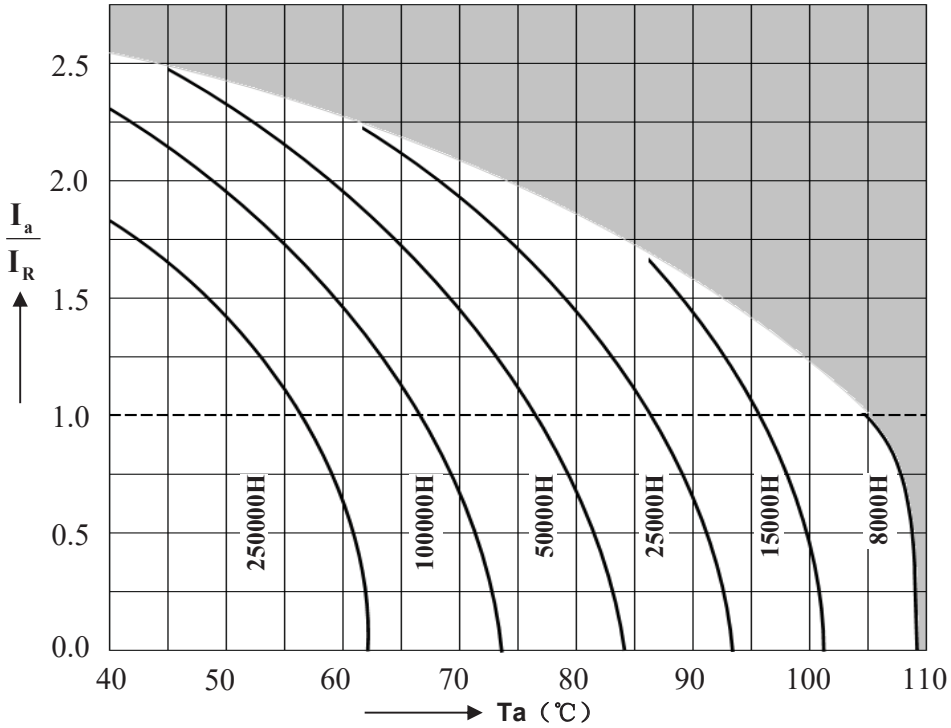
UK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
500	150	30×40	1.19	960	1770
500	150	35×35	1.23	960	1770
500	180	25×50	1.24	790	1470
500	180	30×45	1.31	790	1470
500	220	25×55	1.45	650	1210
500	220	30×45	1.47	650	1210
500	220	35×40	1.53	650	1210
500	270	30×50	1.55	530	980
500	270	35×40	1.62	530	980
500	330	30×55	1.89	430	800
500	390	35×45	1.85	370	680
500	390	35×55	2.02	370	680
500	470	35×60	2.28	300	560
500	560	35×65	2.32	250	470
500	680	40×60	2.45	210	390

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions



CapXon

UL series

UL Series 105℃

Features

Standard capacitors

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies
- Used for air conditioner,general-purpose inverter

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Aluminum case designed explosion-proof vent
- Snap-in solder pins to hold component in place on PC-board

Features

- High reliability
- Long useful life
- High ripple current capability
- Aluminum case designed explosion-proof vent
- RoHS-compatible

Specifications

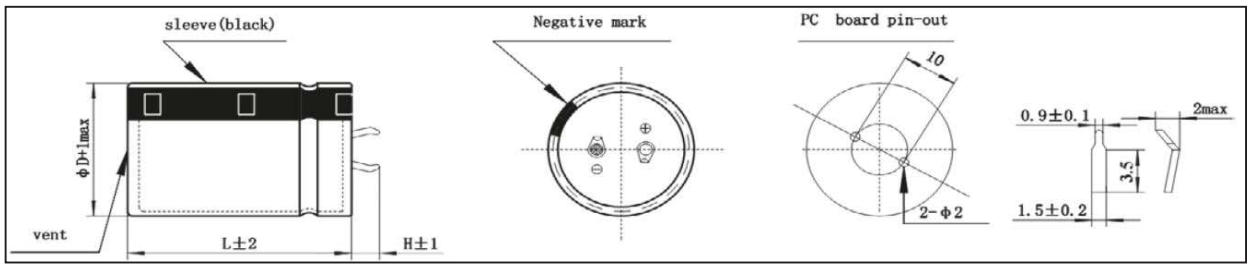
Item	Performance Characteristics	
Operating Temperature Range	-40 to +105℃	-25 to +105℃
Rated voltage VR	200 to 450 V DC	⩾500V DC
Surge voltage VS	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R	
Rated capacitance CR	47 ~ 2700 μF	
Capacitance tolerance	±20%(120Hz,+20℃)	
Dissipation Factor tanδ(at 20℃, 120Hz)	Less than the value under table(%) W.V.(V) 200~420 450~500 D.F.(%) max 15 20	
Leakage Current Ileak (+20℃.max)	$I \leqq 3\sqrt{CV}$ (μA) after 5minutes with rated working voltage applied	
Self-inductance ESL	approx. 20 nH	
Useful life 105 ℃; VR ,IAC' R	> 10000 h	Requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 ℃; VR	5000 h	Post test requirements: Δ C/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit Ileak ⩽ initial specified limit
Shelf Life 105 ℃	1000 h	Post test requirements: Δ C/C ⩽ ±20% of initial value ESR ⩽ 2 times initial specified limit Ileak ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at low temperature	Max. impedance ratio at 120 Hz VR 200~250 V 315~ 450 V ⩾500 V Z-25℃/ 3 8 8 Z-40℃/ 7 10 -	
Sectional specification	IEC 60384-4 and JIS-C-5101	

Multiplier for Ripple Current vs. Frequency

V_R(V)/Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
10⩽V_R⩽100	0.88	1	1.07	1.15	1.15	1.15
160⩽V_R⩽250	0.81	1	1.17	1.32	1.45	1.5
315⩽V_R⩽600	0.77	1	1.16	1.30	1.41	1.43

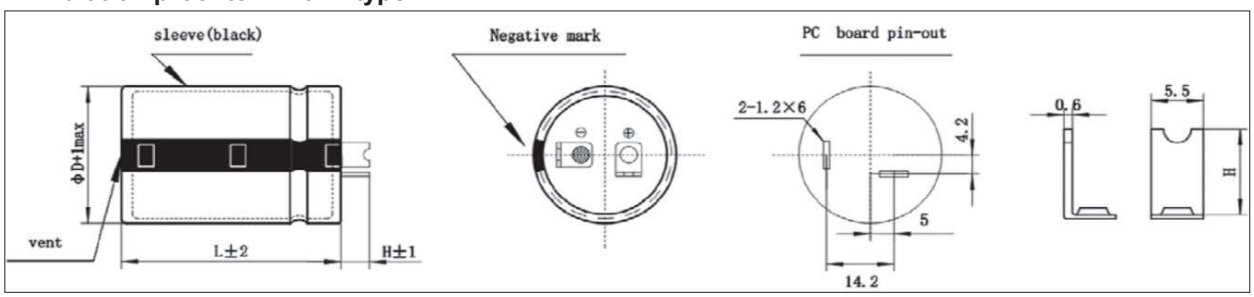
Dimensional drawings

1. Standard 2 terminals



Standard snap-in terminals:length (6.0±1)mm.Also available with length of (4.0+1)mm

2. Vibration proof terminal T type



Standard terminals:Length 4.5±1mm.Also available with length of 5.5±1mm

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	＜55	/	600	6	100
22	≥55	/	400	4	100
25	＜65	/	500	5	100
25	≥65	/	400	4	100
30	≤36	＜6(L=35、36)	400	8	50
30	35≤L≤65	≥6(L=35、36)	300	6	50
30	＞65	/	200	4	50
35	≤25	/	400	8	50
35	25＜L＜45	/	300	6	50
35	45≤L≤85	/	200	4	50
35	＞85	/	100	2	50
40	35	＜6	200	5	40
40	35	≥6	160	4	40
40	40≤L≤45	/	160	4	40
40	45＜L≤75	/	120	3	40
40	＞75	/	80	2	40
45	40≤L≤65	/	140	4	35
45	65＜L≤100	/	70	2	35

Packing of snap-in

CapXon

UL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
200	180	22×20	0.75	580	1110
200	220	22×25	0.8	470	900
200	270	22×25	1.31	390	740
200	270	22×30	1.35	390	740
200	270	25×25	1.35	390	740
200	330	22×25	1.41	320	600
200	330	22×30	1.53	320	600
200	330	25×25	1.48	320	600
200	390	22×30	1.63	270	510
200	390	22×35	1.68	270	510
200	390	25×25	1.63	270	510
200	390	25×30	1.68	270	510
200	390	30×25	1.68	270	510
200	470	22×30	1.72	220	420
200	470	22×35	1.84	220	420
200	470	25×25	1.63	220	420
200	470	25×30	1.75	220	420
200	470	35×25	1.75	220	420
200	560	22×35	1.95	190	360
200	560	22×40	2.07	190	360
200	560	25×30	1.84	190	360
200	560	25×35	1.92	190	360
200	560	30×30	1.84	190	360
200	560	35×25	1.84	190	360
200	680	22×40	2.22	150	290
200	680	22×45	2.32	150	290
200	680	25×35	2.11	150	290
200	680	25×40	2.32	150	290
200	680	30×30	2.11	150	290
200	680	30×35	2.32	150	290
200	680	35×30	2.32	150	290
200	820	22×50	2.6	130	240
200	820	25×40	2.37	130	240
200	820	30×30	2.11	130	240
200	820	30×35	2.37	130	240
200	820	35×30	2.37	130	240
200	1000	22×60	3	110	200
200	1000	25×45	2.63	110	200
200	1000	30×35	2.37	110	200
200	1000	30×40	2.42	110	200
200	1000	35×30	2.37	110	200
200	1000	35×35	2.42	110	200
200	1200	25×50	2.88	89	170
200	1200	30×40	2.55	89	170
200	1200	35×30	2.44	89	170
200	1200	35×35	2.88	89	170
200	1500	30×45	2.82	68	130
200	1500	30×50	3	68	130
200	1500	35×35	2.98	68	130
200	1500	35×40	3.08	68	130
200	1800	30×50	3.08	58	110
200	1800	35×40	3.18	58	110
200	1800	35×45	3.28	58	110
200	2200	35×50	3.45	48	90
200	2700	35×60	4	39	74
250	220	22×25	0.85	470	900
250	270	22×25	1.32	390	740
250	270	22×30	1.36	390	740
250	270	25×25	1.36	390	740
250	330	22×30	1.55	320	600

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
250	330	22×35	1.6	320	600
250	330	25×25	1.45	320	600
250	330	25×30	1.6	320	600
250	390	22×35	1.75	270	510
250	390	22×40	1.8	270	510
250	390	25×30	1.68	270	510
250	390	25×35	1.73	270	510
250	390	30×30	1.73	270	510
250	470	22×40	1.97	220	420
250	470	22×45	2.02	220	420
250	470	25×30	1.75	220	420
250	470	25×35	1.8	220	420
250	470	30×25	1.75	220	420
250	470	30×30	1.8	220	420
250	560	22×45	2.2	190	360
250	560	25×40	2.2	190	360
250	560	30×30	1.97	190	360
250	560	30×35	2.05	190	360
250	560	35×30	2.05	190	360
250	680	22×50	2.45	150	290
250	680	25×45	2.25	150	290
250	680	30×35	2.18	150	290
250	680	30×40	2.25	150	290
250	680	35×30	2.18	150	290
250	820	25×50	2.49	130	240
250	820	30×45	2.19	130	240
250	820	35×35	2.15	130	240
250	1000	25×55	2.91	110	200
250	1000	30×40	2.44	110	200
250	1000	30×45	2.54	110	200
250	1000	35×35	2.38	110	200
250	1000	35×40	2.54	110	200
250	1200	30×45	2.68	89	170
250	1200	30×50	2.73	89	170
250	1200	35×40	2.72	89	170
250	1500	30×55	3.15	68	130
250	1500	35×45	3.15	68	130
250	1500	35×50	3.2	68	130
250	1800	35×50	3.42	58	110
250	1800	35×55	3.6	58	110
250	2200	35×60	3.75	48	90
315	120	22×25	0.72	870	1660
315	150	22×25	1	700	1330
315	150	22×30	1.03	700	1330
315	150	30×25	1	700	1330
315	180	22×30	1.14	580	1110
315	180	22×35	1.18	580	1110
315	180	25×30	1.18	580	1110
315	220	22×35	1.31	470	900
315	220	22×40	1.35	470	900
315	220	25×30	1.31	470	900
315	220	25×35	1.35	470	900
315	220	30×25	1.31	470	900
315	270	22×40	1.49	390	740
315	270	22×45	1.54	390	740
315	270	25×35	1.39	390	740
315	270	25×40	1.54	390	740
315	270	30×30	1.39	390	740
315	330	22×45	1.69	320	600
315	330	22×50	1.76	320	600

CapXon

UL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
315	330	25×35	1.59	320	600
315	330	25×40	1.63	320	600
315	330	30×25	1.41	320	600
315	330	30×30	1.46	320	600
315	330	35×25	1.46	320	600
315	390	22×50	1.87	270	510
315	390	25×40	1.78	270	510
315	390	25×45	1.83	270	510
315	390	30×30	1.63	270	510
315	390	30×35	1.68	270	510
315	390	35×25	1.48	270	510
315	390	35×30	1.55	270	510
315	470	22×55	2.09	220	420
315	470	25×45	1.99	220	420
315	470	30×35	1.86	220	420
315	470	30×40	1.99	220	420
315	470	35×30	1.74	220	420
315	470	35×35	1.99	220	420
315	560	22×60	2.29	190	360
315	560	25×50	2.21	190	360
315	560	30×40	2.08	190	360
315	560	30×45	2.16	190	360
315	560	35×30	2.08	190	360
315	560	35×35	2.16	190	360
315	680	25×55	2.44	150	290
315	680	25×60	2.5	150	290
315	680	30×45	2.32	150	290
315	680	30×50	2.4	150	290
315	680	35×35	2.16	150	290
315	680	35×40	2.13	150	290
315	820	30×50	2.55	130	240
315	820	30×55	2.59	130	240
315	820	35×40	2.26	130	240
315	820	35×45	2.35	130	240
315	1000	30×55	2.78	110	200
315	1000	30×60	2.82	110	200
315	1000	35×50	2.7	110	200
315	1200	30×60	3.01	89	170
315	1200	35×55	2.92	89	170
315	1200	35×60	2.96	89	170
315	1500	35×60	3.42	68	130
315	1500	35×65	3.62	68	130
350	100	22×25	0.5	1050	1990
350	120	22×25	0.92	870	1660
350	120	22×30	0.94	870	1660
350	150	22×30	1.08	700	1330
350	150	25×25	1.05	700	1330
350	180	22×35	1.22	580	1110
350	180	22×40	1.27	580	1110
350	180	25×30	1.2	580	1110
350	220	22×40	1.39	470	900
350	220	22×45	1.43	470	900
350	220	25×30	1.3	470	900
350	220	25×35	1.35	470	900
350	220	30×25	1.3	470	900
350	270	22×45	1.57	390	740
350	270	22×50	1.62	390	740
350	270	25×35	1.49	390	740
350	270	25×40	1.53	390	740
350	270	30×25	1.34	390	740

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
350	270	30×30	1.49	390	740
350	270	35×25	1.42	390	740
350	330	22×50	1.77	320	600
350	330	25×40	1.69	320	600
350	330	25×45	1.77	320	600
350	330	30×30	1.56	320	600
350	330	30×35	1.69	320	600
350	330	35×25	1.56	320	600
350	390	22×55	1.96	270	510
350	390	25×45	1.88	270	510
350	390	25×50	1.97	270	510
350	390	30×35	1.77	270	510
350	390	30×40	1.83	270	510
350	390	30×45	1.92	270	510
350	390	35×30	1.66	270	510
350	390	35×35	1.73	270	510
350	470	25×50	2.09	220	420
350	470	25×55	2.14	220	420
350	470	30×40	1.99	220	420
350	470	30×45	2.09	220	420
350	470	35×35	1.9	220	420
350	560	25×55	2.3	190	360
350	560	25×60	2.38	190	360
350	560	30×45	2.2	190	360
350	560	30×50	2.3	190	360
350	560	35×40	2.13	190	360
350	560	35×45	2.35	190	360
350	680	30×50	2.43	150	290
350	680	30×55	2.48	150	290
350	680	35×40	2.17	150	290
350	680	35×45	2.4	150	290
350	820	30×55	2.5	130	240
350	820	30×60	2.65	130	240
350	820	35×45	2.45	130	240
350	820	35×50	2.5	130	240
350	1000	35×50	2.8	110	200
350	1000	35×60	3	110	200
350	1000	40×50	3	110	200
350	1200	35×60	3.01	89	170
350	1200	35×70	3.23	89	170
350	1200	40×60	3.25	89	170
350	1500	40×80	4.21	68	130
350	1500	45×60	4.06	68	130
350	1800	40×90	4.9	58	110
350	1800	45×70	4.75	58	110
350	2200	45×85	5.4	48	90
350	2700	45×100	6.43	39	74
400	82	22×25	0.55	1280	2430
400	100	22×25	0.66	1050	1990
400	100	22×30	0.68	1050	1990
400	100	25×25	0.68	1050	1990
400	120	22×25	0.93	870	1660
400	120	22×30	0.96	870	1660
400	120	25×25	0.96	870	1660
400	150	22×30	1.08	700	1330
400	150	22×35	1.12	700	1330
400	150	25×25	1.08	700	1330
400	150	25×30	1.12	700	1330
400	180	22×35	1.22	580	1110
400	180	22×40	1.23	580	1110

CapXon

UL series

Case Size

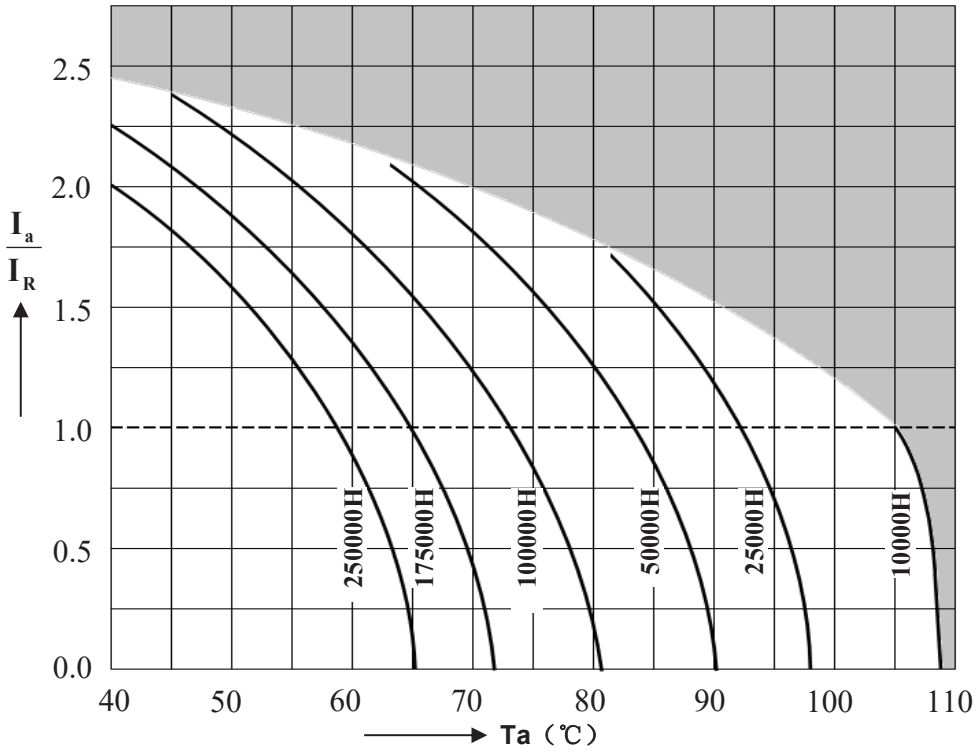
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
400	180	25×30	1.23	580	1110
400	180	25×35	1.27	580	1110
400	180	30×25	1.2	580	1110
400	220	22×45	1.43	470	900
400	220	22×50	1.46	470	900
400	220	25×30	1.3	470	900
400	220	25×35	1.35	470	900
400	220	30×25	1.3	470	900
400	220	30×30	1.35	470	900
400	270	22×50	1.62	390	740
400	270	25×40	1.53	390	740
400	270	25×45	1.57	390	740
400	270	30×30	1.49	390	740
400	270	30×35	1.53	390	740
400	270	35×25	1.45	390	740
400	330	22×55	1.81	320	600
400	330	25×40	1.69	320	600
400	330	25×45	1.77	320	600
400	330	30×30	1.56	320	600
400	330	30×35	1.69	320	600
400	330	35×30	1.6	320	600
400	390	25×50	1.93	270	510
400	390	25×55	2	270	510
400	390	30×40	1.93	270	510
400	390	30×45	2	270	510
400	390	35×30	1.66	270	510
400	390	35×35	1.73	270	510
400	470	30×45	2.09	220	420
400	470	30×50	2.14	220	420
400	470	35×35	1.9	220	420
400	470	35×40	2	220	420
400	560	35×40	2.13	190	360
400	560	35×45	2.5	190	360
400	680	35×45	2.55	150	290
400	680	35×50	2.43	150	290
400	820	35×55	2.67	130	240
400	820	35×60	2.78	130	240
400	820	40×50	2.78	130	240
400	1000	35×65	3.25	110	200
400	1000	40×55	3.25	110	200
400	1200	35×75	3.72	89	170
400	1200	40×65	3.72	89	170
400	1200	45×55	3.72	89	170
400	1500	40×80	4.56	68	130
400	1500	45×65	4.56	68	130
400	1800	45×80	5.36	58	110
450	82	22×25	0.6	1700	3230
450	100	22×25	0.85	1390	2650
450	100	22×30	0.87	1390	2650
450	100	25×25	0.86	1390	2650
450	120	22×30	0.98	1160	2210
450	120	22×35	1	1160	2210
450	120	25×25	0.98	1160	2210
450	120	25×30	1	1160	2210
450	150	22×35	1.13	930	1770
450	150	22×40	1.16	930	1770
450	150	25×30	1.13	930	1770
450	150	25×35	1.16	930	1770
450	150	30×25	1.13	930	1770
450	150	30×30	1.16	930	1770

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
450	180	22×40	1.27	770	1470
450	180	22×45	1.31	770	1470
450	180	25×30	1.19	770	1470
450	180	25×35	1.24	770	1470
450	180	30×25	1.17	770	1470
450	180	30×30	1.31	770	1470
450	180	35×25	1.24	770	1470
450	220	22×45	1.44	640	1210
450	220	25×35	1.37	640	1210
450	220	25×40	1.4	640	1210
450	220	30×30	1.36	640	1210
450	220	30×35	1.4	640	1210
450	220	35×25	1.36	640	1210
450	270	22×55	1.68	520	980
450	270	25×45	1.62	520	980
450	270	25×50	1.65	520	980
450	270	30×30	1.43	520	980
450	270	30×40	1.46	520	980
450	270	35×30	1.48	520	980
450	330	25×50	1.82	420	800
450	330	30×40	1.75	420	800
450	330	30×45	1.82	420	800
450	330	35×30	1.7	420	800
450	330	35×35	1.75	420	800
450	390	25×55	2	360	680
450	390	30×45	1.93	360	680
450	390	30×50	2	360	680
450	390	35×35	1.8	360	680
450	390	35×40	1.79	360	680
450	470	30×50	2.14	290	560
450	470	30×55	2.23	290	560
450	470	35×40	1.95	290	560
450	470	35×45	2.14	290	560
450	560	30×55	2.36	250	470
450	560	35×45	2.16	250	470
450	560	35×50	2.36	250	470
450	680	35×50	2.5	210	390
450	680	35×55	2.62	210	390
450	820	35×65	3	170	320
450	820	40×55	3	170	320
450	1000	35×70	3.1	140	270
450	1000	35×80	3.56	140	270
450	1000	40×70	3.6	140	270
450	1000	45×60	3.6	140	270
450	1200	40×80	3.95	120	220
450	1500	45×80	4.8	95	180
450	1800	45×90	5.67	79	150
500	47	22×25	0.49	2970	5640
500	56	22×25	0.56	2490	4740
500	56	22×30	0.58	2490	4740
500	56	25×25	0.58	2490	4740
500	68	22×30	0.6	2050	3900
500	68	22×35	0.65	2050	3900
500	68	25×25	0.65	2050	3900
500	68	25×30	0.7	2050	3900
500	82	22×35	0.72	1700	3230
500	82	25×30	0.74	1700	3230
500	100	22×40	0.77	1390	2650
500	100	25×35	0.77	1390	2650
500	100	30×30	0.77	1390	2650

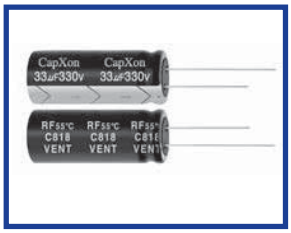
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MA× ESR 20'C 120Hz mΩ
500	120	22×45	0.74	1160	2210
500	120	25×40	0.74	1160	2210
500	120	30×35	0.77	1160	2210
500	120	35×30	0.8	1160	2210
500	150	22×50	1.08	930	1770
500	150	25×45	1.08	930	1770
500	150	30×35	0.92	930	1770
500	150	35×30	0.92	930	1770
500	180	25×50	1.2	770	1470
500	180	30×35	1.05	770	1470
500	180	35×30	1.1	770	1470
500	220	25×50	1.3	640	1210
500	220	30×45	1.33	640	1210
500	220	35×30	1.1	640	1210
500	220	35×35	1.23	640	1210
500	270	30×50	1.51	520	980
500	270	35×35	1.31	520	980
500	270	35×40	1.42	520	980
500	330	35×40	1.48	420	800
500	330	35×45	1.56	420	800
500	390	35×50	1.78	360	680
500	470	35×55	2.14	290	560
500	470	35×60	2.26	290	560
500	560	35×65	2.38	250	470
500	680	40×65	2.52	210	390

depending on ambient temperature Ta versus under ripple current operating conditions $V_R \geqslant 160V$



RF Series Radial Type for Photo Flash



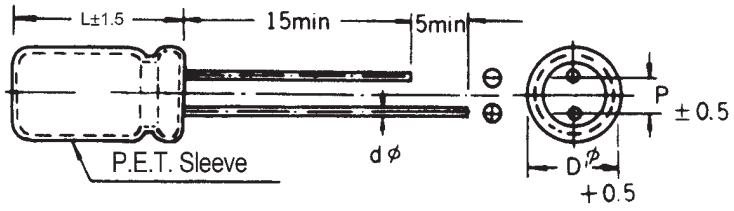
Features

- RF Series is for photo flash applications that require not only superior volumetric efficiency, low dissipation factor and low leakage current.
- These capacitors effectively convert electrostatic energy into light.
- RoHS Compliant

Specifications

Item	Performance Characteristics
Operating Temperature Range	-20 to +55℃
Rated Voltage Range	330／350 VDC
Capacitance Range	100 ~ 450 μF
Capacitance Tolerance	-10% ~ +20% (120Hz, +25℃)
Leakage Current (+20℃,max.)	I ≦ 1xC μA max After 5 minutes with rated working voltage applied
Dissipation Factor (tan δ ，at 20℃，120Hz)	8% max.
Endurance	Test conditions Duration time :5000 Times Ambient temperature :Room Temperature (5 ~ 35℃) Applied voltage :Charge and Dischatge Cycles : 30 Sec. After test requirement at +25℃ Capacitance change :≦ ±10% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ 150% of the initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+55℃ Applied voltage :None After test requirement at +25℃ Capacitance change :≦ ±10% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ 150% of the initial specified value

Diagram of Dimensions:(unit:mm)



ϕD	8	10	12	13	14	16	18	20
ϕd	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8
F	3.5	5				7.5		

Please check with us about individual sizes and dimensions.

SF Series Snap-in Type for Photo Flash

Features

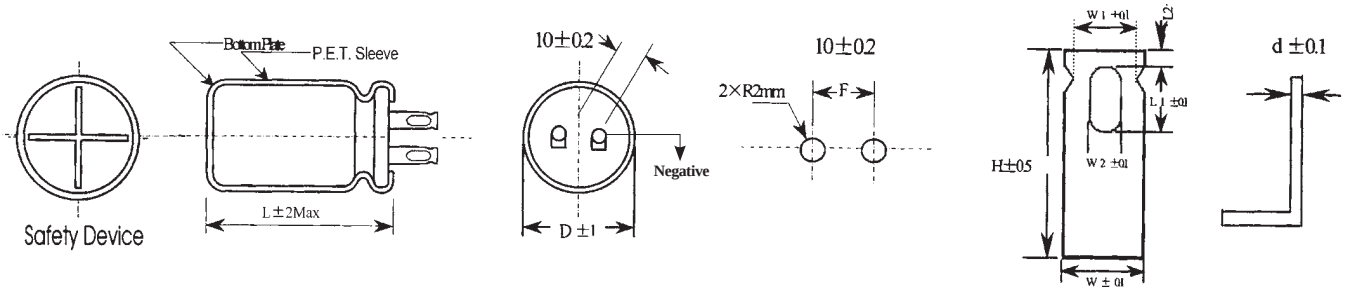
- SF Series is for photo flash applications that require not only superior volumetric efficiency, low dissipation factor and low leakage current.
- These capacitors effectively convert electrostatic energy into light.
- RoHS Compliant

Specifications

Item	Performance Characteristics
Operating Temperature Range	-20 to +55℃
Rated Voltage Range	330／350 VDC
Capacitance Range	150 ~ 1500 μF
Capacitance Tolerance	-10% ~ +20% (120Hz, +25℃)
Leakage Current (+20℃,max.)	I ≦ 1xC μA max After 5 minutes
Dissipation Factor (tan δ ，at 20℃，120Hz)	8% max.
Endurance	Test conditions Duration time :5000 Times Ambient temperature :Room Temperature (5 ~ 35℃) Applied voltage :Charge and Dischatge Cycles : 30 Sec. After test requirement at +25℃ Capacitance change :≦ ±10% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ 150% of the initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+55℃ Applied voltage :None After test requirement at +25℃ Capacitance change :≦ ±10% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ 150% of the initial specified value

For Photo Flash

Diagram of Dimensions:(unit:mm)



Case Size

Dϕ	H±0.5	L1±0.1	L2±0.1	W±0.1	W1±0.1	W2±0.1	d±0.1
25	8.0	3.3	1.3	4.0	3.7	1.8	0.6
30	8.5	3.3	1.3	4.6	4.3	1.8	0.8
35	9.0	3.3	1.3	4.6	4.3	1.8	0.8
40	9.0	3.3	1.3	4.6	4.3	1.8	0.8

Please check with us about individual size and dimensions.

CapXon

RS series

RS Series 85℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Wide temperature range
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated voltage V_R	10 to 100 V DC
Surge voltage V_S	1.15 V_R
Rated capacitance C_R	1800 to 1000000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

WV \ ⌀D	35	51	63.5	76.2	89
10	75	100	120	150	180
16	60	70	80	120	140
25	40	50	70	80	130
35	30	50	60	70	90
40	30	50	60	70	90
50	25	30	50	60	80
63	20	25	30	40	60
80	20	20	25	30	50
100	15	20	25	30	30

Self-inductance ESL	d = 35 mm: approx. 10 nH	
	d = 51 mm: approx. 15 nH	
	d ⩾ 63.5 mm: approx. 20 nH	
Useful life 85 °C; V_R, $I_{AC,R}$	>12000 h	Requirements: △C/C ⩽45% of initial value ESR ⩽3 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ⩽ ±15% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

$Z_{-25℃}$ / $Z_{20℃}$	3
$Z_{-40℃}$ / $Z_{20℃}$	12

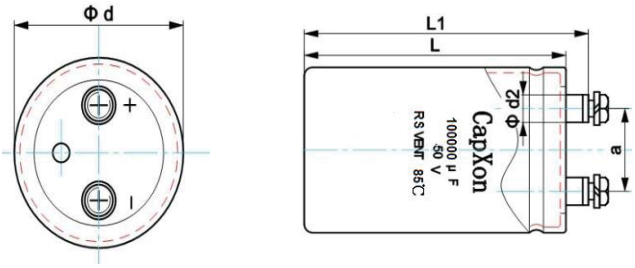
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	≧3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RS series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	33000	35×50	4.5	15	28
10	39000	35×50	4.75	13	24
10	47000	35×65	5.4	11	21
10	56000	35×65	6	10	18
10	68000	35×80	7.6	9	15
10	82000	35×80	7.7	8	12
10	100000	35×100	9.3	7	10
10	120000	35×120	9.5	6	10
10	150000	51×80	10.1	5	8.5
10	180000	51×80	10.8	5	8.6
10	220000	51×100	13	5	8.6
10	270000	51×120	14	4	7.6
10	330000	63.5×96	15.6	4	7.0
10	390000	63.5×100	16.2	4	6.7
10	470000	63.5×120	18.1	3	6.1
10	560000	76.2×100	18.4	3	5.7
10	680000	76.2×120	19	3	5.7
10	820000	76.2×155	24	3	5.7
16	22000	35×50	5	14	25
16	27000	35×50	6.3	12	22
16	33000	35×60	8.5	11	19
16	33000	35×80	9.5	11	19
16	47000	35×100	10	8	15
16	47000	35×80	9	8	15
16	56000	35×80	9.8	7	13
16	68000	35×100	10.5	7	13
16	68000	35×105	10.8	7	13
16	68000	51×80	12	7	13
16	82000	35×100	12	6	11
16	100000	35×120	12.5	5	10
16	100000	51×100	14	5	10
16	100000	51×80	13	5	10
16	120000	35×120	14.2	5	10
16	120000	51×80	14.8	5	10
16	150000	51×100	16	5	8.6
16	150000	51×140	17.2	5	8.6
16	150000	51×80	15	5	8.6
16	220000	51×120	14.5	4	7.6
16	220000	51×140	15.6	4	7.6
16	220000	63.5×105	17	4	7.6
16	220000	63.5×120	18	4	7.6
16	270000	63.5×100	18.5	4	6.7
16	270000	63.5×96	18.2	4	6.7
16	330000	63.5×105	19	4	6.7
16	330000	63.5×120	20.1	4	6.7
16	330000	63.5×140	21.5	4	6.7
16	330000	76.2×120	22	4	6.7
16	390000	63.5×130	22.5	3	5.7
16	390000	76.2×100	22.8	3	5.7
16	390000	76.2×120	24.7	3	5.7
16	470000	76.2×115	25	3	5.7
16	470000	76.2×120	25.5	3	5.7
16	470000	76.2×140	27.3	3	5.7
16	560000	76.2×130	27.6	3	5.5
16	560000	76.2×140	28.5	3	5.5
16	680000	76.2×145	28.7	3	5.5
16	680000	76.2×160	30.1	3	5.5
16	820000	76.2×220	31	3	5.0
16	1000000	89×160	32	3	5.0
16	1000000	89×200	35.3	3	5.0

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
25	15000	35×50	4	18.0	35
25	18000	35×50	4.5	16.0	29
25	22000	35×60	5.5	13.0	24
25	27000	36×65	6.9	12.0	20
25	33000	35×80	8.2	10.0	19
25	39000	35×80	9	9.0	17
25	47000	35×100	9.5	8.0	15
25	47000	35×105	9.7	8.0	15
25	47000	35×120	10.3	8.0	15
25	56000	35×100	10.5	7.0	13
25	56000	35×120	11.4	7.0	13
25	68000	35×120	12	6.0	11
25	68000	51×80	12.3	6.0	11
25	82000	35×120	12.5	6.5	12
25	82000	51×80	12.8	6.5	12
25	100000	51×100	13.4	5.0	10
25	100000	51×105	13.7	5.0	10
25	120000	51×115	14	4.5	8.6
25	120000	51×120	14.3	4.5	8.6
25	150000	51×120	15	4.0	7.6
25	150000	51×140	16.1	4.0	7.6
25	150000	63.5×105	16.2	4.0	7.6
25	180000	63.5×120	16.8	3.8	7.2
25	220000	63.5×105	17	3.5	6.7
25	220000	63.5×120	18	3.5	6.7
25	270000	63.5×130	18.8	3.3	6.3
25	270000	76.2×100	19.3	3.3	6.3
25	330000	76.2×120	21	3.2	6.1
25	330000	76.2×140	22.5	3.2	6.1
25	390000	76.2×115	22.8	3.0	5.7
25	390000	76.2×140	24.8	3.0	5.7
25	470000	76.2×150	25.3	3.0	5.7
25	560000	89×130	26	3.0	5.7
25	560000	89×140	26.8	3.0	5.7
25	680000	89×160	27.5	3.0	5.7
25	820000	89×190	30	3.0	5.7
25	1000000	89×220	33	3.0	5.7
35	10000	35×50	4	19.0	40
35	12000	35×50	4.3	17.0	33
35	15000	35×50	4.5	14.0	27
35	15000	35×80	5.5	14.0	27
35	18000	35×80	6	12.0	22
35	22000	35×100	7	10.0	18
35	22000	35×80	6.3	10.0	18
35	27000	35×100	8	9.0	17
35	27000	35×80	7.2	9.0	17
35	33000	35×100	9.3	8.0	15
35	33000	35×80	8.4	8.0	15
35	39000	35×100	10	7.0	13
35	39000	35×120	10.9	7.0	13
35	47000	35×120	11.5	6.0	11
35	47000	51×96	12.8	6.0	11
35	56000	51×96	13.3	5.5	10
35	68000	51×100	15.4	5.0	10
35	68000	51×80	14	5.0	10
35	82000	51×100	16	4.5	9
35	82000	63.5×96	17.7	4.5	9
35	100000	51×120	18.5	4.0	8
35	100000	63.5×100	19.3	4.0	8
35	100000	63.5×115	20.5	4.0	8

CapXon

RS series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
35	120000	51×120	21	3.5	6.7
35	120000	63.5×120	23	3.5	6.7
35	150000	63.5×100	23.7	3	5.7
35	150000	63.5×120	25.7	3	5.7
35	180000	63.5×120	26.2	3	5.7
35	180000	76.2×115	27	3	5.7
35	220000	76.2×100	27.6	3	5.5
35	220000	76.2×140	31.9	3	5.5
35	220000	76.2×145	32.4	3	5.5
35	270000	76.2×120	32.7	3	5.4
35	330000	76.2×140	33.1	3	5.3
35	330000	76.2×160	35.1	3	5.3
35	330000	89×130	35.5	3	5.3
35	390000	89×155	36	3	5.2
35	470000	89×140	37	3	5.1
35	470000	89×170	40.3	3	5.1
35	680000	89×220	43	3	5.0
40	10000	35×55	6.3	19	37
40	15000	35×80	9	14	27
40	22000	35×80	11	10	18
40	33000	35×105	12	8	15
40	47000	51×80	14.2	6	11
40	68000	51×105	15.5	5	10
40	100000	63.5×105	17	4	7.6
40	150000	76.2×105	19	3	5.7
40	220000	76.2×140	21	3	5.7
50	6800	35×50	3.7	22	42
50	10000	35×50	6.4	16	30
50	10000	35×60	6.6	16	30
50	12000	35×65	6.9	13	25
50	12000	35×80	7.2	13	25
50	15000	35×80	8.7	11	21
50	18000	35×100	8.8	10	18
50	18000	35×80	8.5	10	18
50	22000	35×100	10	8	15
50	22000	35×120	10.5	8	15
50	27000	35×120	10	7	13
50	33000	51×100	11	6	11
50	33000	51×80	11.8	6	11
50	39000	51×100	12.5	6	10
50	39000	51×80	12	6	10
50	47000	51×100	12.8	5	10
50	47000	51×115	13	5	10
50	56000	51×100	13	4	7.6
50	56000	63.5×96	13.5	4	7.6
50	68000	51×120	13	3	7.5
50	68000	51×140	13.5	3	7.5
50	68000	63.5×96	13.5	3	7.5
50	82000	63.5×100	14	3	7.0
50	82000	63.5×115	14	3	7.0
50	100000	63.5×120	14.5	3	6.8
50	100000	63.5×140	15.5	3	6.8
50	100000	76.2×100	14	3	6.8
50	100000	76.2×115	15	3	6.8
50	120000	63.5×120	16	3	6.5
50	120000	63.5×145	17	3	6.5
50	120000	76.2×115	17	3	6.5
50	150000	76.2×120	18.2	3	6.2
50	150000	76.2×130	18.8	3	6.2
50	150000	76.2×140	19	3	6.2

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
50	180000	76.2×140	20	3	6.0
50	180000	76.2×145	21	3	6.0
50	180000	76.2×155	22	3	6.0
50	220000	76.2×160	21.5	3	5.5
50	220000	89×130	21.5	3	5.5
50	270000	89×140	24.7	3	5.2
50	270000	89×155	25.5	3	5.2
50	330000	89×160	26	3	5.0
63	3900	35×50	2.6	42	68
63	4700	35×50	4.7	30	56
63	4700	35×55	4.8	30	56
63	5600	35×50	5	24	47
63	5600	35×55	5.3	24	47
63	6800	35×50	5.2	22	39
63	6800	35×55	5.9	22	39
63	6800	35×65	6.2	22	39
63	8200	35×65	6.5	18	32
63	8200	35×80	6.8	18	32
63	10000	35×60	6.9	16	27
63	10000	35×80	7.5	16	27
63	12000	35×100	8.8	14	22
63	12000	35×80	8	14	22
63	15000	35×105	10	11	21
63	18000	35×100	10	10	19
63	18000	35×120	10.5	10	19
63	22000	51×80	11	8.0	15
63	27000	51×80	11.5	7.0	13
63	27000	51×96	12	7.0	13
63	33000	51×100	13.5	6.0	11
63	33000	51×105	14	6.0	11
63	39000	51×100	14	5.5	10
63	39000	51×115	14.5	5.5	10
63	39000	51×120	15	5.5	10
63	47000	51×120	16.5	5.0	10
63	47000	51×130	17	5.0	10
63	47000	63.5×100	17	5.0	10
63	47000	63.5×105	19	5.0	10
63	56000	63.5×100	17	4.0	7.6
63	56000	63.5×115	18.5	4.0	7.6
63	68000	63.5×120	19	3.0	7.4
63	68000	63.5×145	20.5	3.0	7.4
63	68000	76.2×105	20.2	3.0	7.4
63	82000	63.5×130	20.5	3.0	7.2
63	82000	63.5×145	21	3.0	7.2
63	100000	76.2×115	22	3.0	7.0
63	100000	76.2×120	23	3.0	7.0
63	100000	76.2×130	24	3.0	7.0
63	100000	76.2×140	25	3.0	7.0
63	120000	76.2×130	26	3.0	6.8
63	120000	76.2×140	27	3.0	6.8
63	120000	76.2×145	27.5	3.0	6.8
63	150000	76.2×155	28.5	3.0	6.5
63	150000	76.2×220	31	3.0	6.5
63	150000	89×140	28.5	3.0	6.5
63	180000	89×130	29	3.0	6.0
63	220000	89×155	31	3.0	5.5
63	220000	89×160	31.5	3.0	5.5
63	270000	76.2×220	32	3.0	5.2
63	330000	89×220	34	3	5.0
80	3300	35×50	2.5	50.0	80

CapXon

RS series

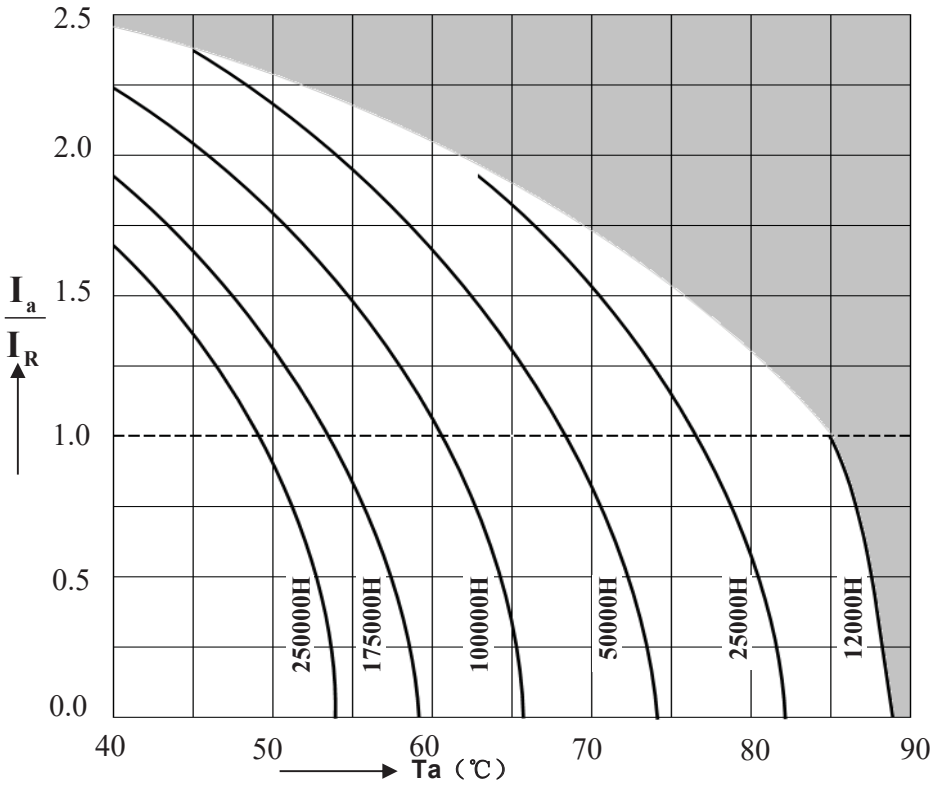
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
80	3900	35×50	2.8	36	68
80	4700	35×60	5	25	46
80	5600	35×65	5.5	22	40
80	5600	35×80	6	22	40
80	6800	35×60	6.3	19	35
80	6800	35×80	6.5	19	35
80	8200	35×80	7.2	17	32
80	10000	35×100	8.5	13	23
80	10000	35×80	8	13	23
80	12000	35×100	9.2	11.0	20
80	12000	35×120	9.5	11.0	20
80	15000	35×120	10.5	9.0	17
80	15000	51×80	10.5	9.0	17
80	18000	35×120	11	8.0	15
80	18000	51×80	11	8.0	15
80	22000	51×100	12	7.0	12
80	22000	51×96	11.8	7.0	12
80	27000	51×96	13	6.5	11
80	27000	63.5×100	15	6.5	11
80	33000	51×115	14.8	6.0	11
80	33000	51×120	15.2	6.0	11
80	33000	63.5×100	15.2	6.0	11
80	39000	51×130	16	5.8	11.0
80	39000	63.5×120	16.5	5.8	11.0
80	47000	63.5×115	20	5.5	10.5
80	47000	63.5×120	20.5	5.5	10.5
80	47000	63.5×145	21	5.5	10.5
80	56000	63.5×130	22	5.2	9.5
80	56000	63.5×145	23	5.2	9.5
80	68000	76.2×115	22	5.0	9.5
80	68000	76.2×120	23	5.0	9.5
80	68000	76.2×145	24	5.0	9.5
80	82000	76.2×130	24	4.5	8.6
80	82000	76.2×140	24.5	4.5	8.6
80	82000	76.2×145	25	4.5	8.6
80	100000	76.2×155	25.5	4.0	7.6
80	100000	76.2×160	26	4.0	7.6
80	100000	89×140	26	4.0	7.6
80	120000	89×130	23	3.8	7.2
80	150000	89×155	29	3.5	6.7
80	150000	89×160	30	4	7
80	220000	89×230	33	3	6
100	1800	35×50	3.5	50	90
100	2200	35×50	4.3	40	75
100	2700	35×50	4.5	35	65
100	3300	35×65	4.8	28	53
100	3300	35×80	5.3	28	53
100	3900	35×80	5.6	24	42
100	4700	35×80	6.7	20	36
100	5600	35×100	7.2	18	29
100	6800	35×100	7.5	15	24
100	6800	35×105	8.7	15	24
100	6800	35×80	8	15	24
100	8200	35×120	9.5	12	20
100	8200	51×80	9.5	12	20
100	10000	35×120	10	12	18
100	10000	51×80	10	9	18
100	12000	51×80	10.5	9	16
100	15000	51×100	12.4	8	15
100	15000	51×105	13	8	15

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	15000	51×80	11	8.0	15
100	15000	51×96	11.5	8.0	15
100	18000	51×100	12.6	7.0	14
100	18000	51×115	14	7.0	14
100	18000	51×120	14.5	7.0	14
100	18000	63.5×100	15	7.0	14
100	22000	51×100	13.3	6.0	11
100	22000	51×120	15.5	6.0	11
100	22000	51×130	16	6.0	11
100	22000	63.5×100	16.5	6.0	11
100	22000	63.5×105	17	6.0	11
100	27000	63.5×115	18	5.5	10.0
100	27000	63.5×120	18.5	5.5	10.0
100	33000	51×140	18.5	5.0	9.0
100	33000	63.5×130	18.8	5.0	9.0
100	33000	63.5×145	19	5.0	9.0
100	33000	76.2×100	18.8	5.0	9.0
100	33000	76.2×105	19	5.0	9.0
100	39000	76.2×115	20.2	4.8	8.8
100	39000	76.2×120	20.5	4.8	8.8
100	39000	76.2×145	21	4.8	8.8
100	47000	63.5×140	22	4.5	8.6
100	47000	76.2×130	24	4.5	8.6
100	47000	76.2×140	25	4.5	8.6
100	47000	76.2×145	25.2	4.5	8.6
100	56000	76.2×155	26	4.3	8.2
100	68000	76.2×140	26.4	4.0	7.6
100	68000	89×130	26.5	4.0	7.6
100	68000	89×140	26.7	4.0	7.6
100	82000	89×155	27	3.8	7.2
100	100000	89×160	27.2	3.5	6.7
100	100000	89×170	27.5	4	7
100	150000	89×230	31	3	6

Useful life

depending on ambient temperature Ta versus under ripple current operating conditions



CapXon

RG Series 85℃

Features

Standard capacitors

Applications

- Frequency converters
- Uninterruptible power supplies

Features

- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc~630Vdc)
Rated voltage V_R	160 to 630 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R VR > 315V 1.10 V_R
Rated capacitance C_R	390 to 39000 µF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	⩾600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH
	d ⩾ 63.5 mm: approx. 20 nH
	Capacitors with low-inductance design:
	d ⩾ 63.5 mm: approx. 15 nH

Useful life 85 °C; V_R,$I_{AC,R}$	>6000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test		To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature		Max. impedance ratioat 120 Hz

V_R(V)	160~450	⩾500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

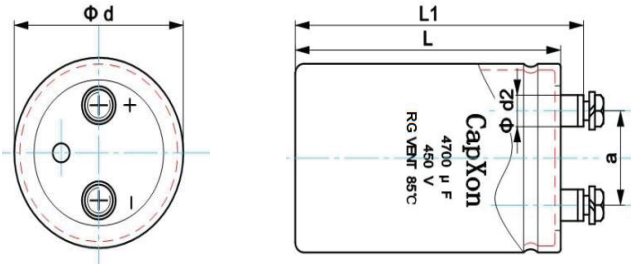
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	⩽70mm >70mm	120 60
42	⩽70mm >70mm	120 60
51	⩽70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RG series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	1000	35×60	2.8	120	200
160	1500	35×60	3	76	130
160	2200	35×100	4	53	90
160	3300	35×100	4.7	35	60
160	3900	51×75	5.3	30	51
160	4700	51×75	6	25	42
160	5600	51×96	7	21	36
160	6800	51×96	8.5	17	29
160	8200	51×115	9.2	14	24
160	10000	51×120	10.5	12	20
160	10000	63.5×96	10.5	12	20
160	12000	51×120	11.5	10	17
160	12000	63.5×100	11.7	10	17
160	15000	63.5×120	14.3	8	13
160	18000	63.5×130	15.6	7	11
160	22000	76.2×120	16.7	5	9
160	27000	76.2×130	20.2	4	7
160	33000	89×130	23.8	4	6
160	39000	89×157	27.9	3	5
200	1000	35×60	3	120	200
200	1500	35×80	3.3	76	130
200	2200	35×100	4.2	53	90
200	2700	35×120	4.7	43	74
200	3300	35×120	4.8	35	60
200	3300	51×80	4.9	35	60
200	3900	51×75	5.5	30	51
200	4700	51×96	6.4	25	42
200	5600	51×115	7.6	21	36
200	6800	51×130	8.8	17	29
200	8200	63.5×96	9.4	14	24
200	10000	63.5×120	11.2	12	20
200	10000	63.5×96	10.4	12	20
200	15000	76.2×96	14.4	8	13
200	18000	76.2×130	16.5	7	11
200	22000	76.2×155	19.6	5	9
200	22000	89×120	19.2	5	9
200	27000	89×130	21.5	4	7
200	33000	89×157	25.3	4	6
250	680	35×60	1.8	170	290
250	1000	35×80	3.3	120	200
250	1500	35×80	3.5	76	130
250	1800	35×100	3.5	65	110
250	2200	35×120	3.8	53	90
250	2200	51×75	4	53	90
250	2700	51×75	4.4	43	74
250	3300	51×96	5.4	35	60
250	3900	51×115	6.3	30	51
250	4700	51×120	7	25	42
250	4700	63.5×96	7.3	25	42
250	5600	63.5×96	7.8	21	36
250	6800	51×140	8.5	17	29
250	6800	63.5×115	9.1	17	29
250	6800	76.2×100	9.5	17	29
250	8200	63.5×115	10	14	24
250	10000	63.5×130	11.7	12	20
250	10000	76.2×115	12.2	12	20
250	12000	76.2×115	12.9	10	17
250	15000	76.2×130	15.1	8	13
250	15000	89×120	15.9	8	13
250	18000	76.2×155	17.7	7	11

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	22000	89×157	20.9	5	9
350	390	35×50	1.7	300	510
350	470	35×80	2.2	250	420
350	560	35×80	2.4	210	360
350	680	35×80	2.6	170	290
350	820	35×100	3.1	140	240
350	1000	35×100	3.5	120	200
350	1200	51×75	3.8	100	170
350	1500	51×75	4.3	76	130
350	1800	51×80	6.98	65	110
350	2200	51×96	8	53	90
350	2700	51×105	9.1	43	74
350	2700	63.5×80	9.2	43	74
350	3300	51×115	10.3	35	60
350	3300	63.5×96	10.9	35	60
350	3900	51×130	11.5	30	51
350	3900	63.5×100	11.7	30	51
350	4700	63.5×100	15.1	25	42
350	5600	63.5×115	17.5	21	36
350	5600	76.2×96	18.2	21	36
350	6800	63.5×140	20.5	17	29
350	6800	76.2×100	20.1	17	29
350	8200	76.2×115	23.4	14	24
350	10000	76.2×135	27.7	12	20
350	10000	89×120	28.7	12	20
350	12000	76.2×168	30.1	10	17
350	12000	89×125	28.9	10	17
350	15000	89×150	34.9	8	13
400	1000	51×75	3.5	120	200
400	1200	51×75	3.85	100	170
400	1500	51×80	6.59	76	130
400	1800	51×96	7.49	65	110
400	2200	51×105	8.5	53	90
400	2200	63.5×80	8	53	90
400	2700	51×118	9.73	43	74
400	2700	63.5×96	10	43	74
400	3300	63.5×96	12.6	35	60
400	3900	63.5×100	13.7	30	51
400	4700	63.5×115	16	25	42
400	4700	76.2×96	16.7	25	42
400	5600	63.5×130	18.4	21	36
400	5600	76.2×105	18.6	21	36
400	6800	76.2×110	20.9	17	29
400	8200	76.2×130	24.7	14	24
400	10000	76.2×160	26.9	12	20
400	10000	89×125	26.4	12	20
400	12000	76.2×190	31.8	10	17
400	12000	89×145	30.8	10	17
400	15000	89×236	38.2	8	13
450	1000	51×75	3.5	120	200
450	1200	51×80	5.36	100	170
450	1500	51×96	6.22	76	130
450	1500	63.5×80	6.25	76	130
450	1800	51×96	7.91	65	110
450	2200	51×118	8	53	90
450	2200	63.5×96	8.26	53	90
450	2700	63.5×100	11.4	43	74
450	3300	63.5×105	12.9	35	60
450	3900	63.5×115	14.6	30	51
450	3900	76.2×100	15.2	30	51

CapXon

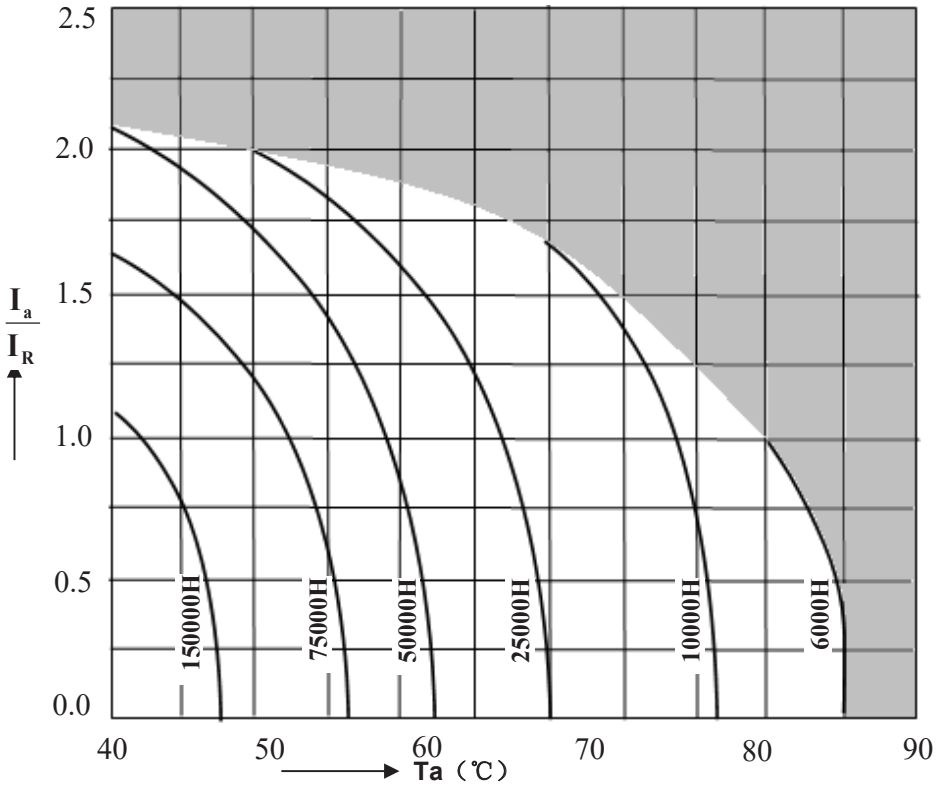
RG series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	4700	63.5×135	17.2	25	42
450	4700	76.2×105	17	25	42
450	5600	76.2×115	19.3	21	36
450	6800	76.2×135	22.8	17	29
450	10000	76.2×190	29	12	20
450	10000	89×150	28.5	12	20
450	12000	89×236	33	10	17
500	1000	51×115	4.6	160	270
500	1000	51×85	4.02	160	270
500	1200	51×96	4.22	130	220
500	1500	51×115	5.14	110	180
500	1500	63.5×96	5.42	110	180
500	1800	51×130	5.94	88	150
500	1800	63.5×96	5.95	88	150
500	2200	63.5×115	7.1	71	120
500	2200	76.2×96	7.3	71	120
500	2700	63.5×130	8.31	58	98
500	3300	76.2×115	9.65	47	80
500	3900	76.2×130	11.1	40	68
500	4700	76.2×155	13.1	33	56
500	5600	89×145	13.8	28	47
500	6800	89×155	15.9	23	39
500	8200	89×180	17.2	19	32
500	10000	89×236	22.1	16	27
550	1200	51×115	4.6	130	220
550	1500	63.5×96	5.42	110	180
550	1800	76.2×80	6.12	88	150
550	2200	76.2×96	7.3	71	120
550	2700	76.2×115	8.73	58	98
550	3300	76.2×130	10.2	47	80
550	3900	76.2×155	12.1	40	68
550	4700	76.2×180	15.1	33	56
550	5600	89×155	14.5	28	47
600	1200	63.5×96	7.7	160	280
600	1500	63.5×115	8.3	130	220
600	1500	76.2×96	8.5	130	220
600	1800	63.5×130	10.3	110	180
600	1800	76.2×96	10.1	110	180
600	2200	76.2×115	12	88	150
600	2700	76.2×130	12.1	71	120
600	3000	76.2×155	15.6	65	110
600	3300	76.2×155	16.4	59	100
600	3300	89×130	16.57	59	100
600	3900	76.2×190	17.7	50	85
600	3900	89×145	17.4	50	85
600	4700	89×157	21	41	71
600	5600	89×190	22.8	35	59
600	6800	89×220	24.4	29	49
630	1000	63.5×130	6	190	330
630	1200	76.2×115	6.7	160	280
630	1500	76.2×130	8.1	130	220
630	1800	76.2×155	9.8	110	180
630	2200	89×130	10.7	88	150
630	2700	89×157	12.8	71	120
630	3300	89×171	14.7	59	100
630	3900	89×196	17.9	50	85
630	4700	100×220	21.6	41	71
630	5600	100×250	24.9	35	59

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RP series

RP Series 85℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Long useful life
- High reliability
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc~630Vdc)
Rated voltage V_R	160 to 630 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	100 to 68000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	⩾600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH	
	d ⩾ 63.5 mm: approx. 20 nH	
	Capacitors with low-inductance design:	
	d ⩾ 63.5 mm: approx. 15 nH	
Useful life 85 °C; V_R,$I_{AC,R}$	>10000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

V_R(V)	160~450	⩾500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

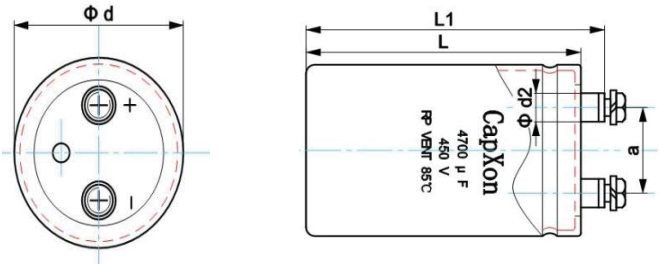
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	1000	35×60	2.8	110	200
160	1500	35×60	3.1	74	130
160	2200	35×80	4.2	52	90
160	2200	35×100	4.7	52	90
160	3300	35×100	5.3	34	60
160	3300	35×120	5.8	34	60
160	3900	51×75	5.5	29	51
160	3900	51×80	5.65	29	51
160	4700	51×75	5.9	24	42
160	4700	51×80	6.1	24	42
160	5600	51×96	7.2	20	36
160	6800	51×96	8	17	29
160	6800	51×100	8.1	17	29
160	6800	51×120	8.8	17	29
160	8200	51×115	9.3	14	24
160	8200	51×120	9.5	14	24
160	10000	51×140	10.9	11	20
160	10000	63.5×96	10.5	11	20
160	10000	63.5×100	10.7	11	20
160	12000	63.5×96	11.5	10	17
160	15000	63.5×120	14	8	13
160	15000	63.5×130	14.5	8	13
160	15000	76.2×100	14.6	8	13
160	18000	63.5×130	15.7	6	11
160	22000	76.2×120	17.6	5	9
160	22000	76.2×130	18.3	5	9
160	27000	76.2×130	20.3	4	7
160	33000	76.2×160	22	3	6
160	33000	89×130	23.8	3	6
160	33000	89×140	24.6	3	6
160	39000	89×157	28	3	6
160	47000	89×170	28.2	3	6
160	68000	89×230	28.5	3	5
200	1000	35×60	3	110	200
200	1500	35×80	3.5	74	130
200	2200	35×100	4.8	52	90
200	2700	35×120	5.5	42	74
200	3300	35×120	5.9	34	60
200	3300	51×75	6	34	60
200	3900	51×75	6.2	29	51
200	4700	51×96	6.4	24	42
200	4700	51×100	6.5	24	42
200	5600	51×115	7.6	20	36
200	6800	51×120	8.7	17	29
200	6800	51×130	9	17	29
200	8200	63.5×96	9.5	14	24
200	8200	63.5×100	9.7	14	24
200	10000	63.5×96	10.4	11	20
200	10000	63.5×120	11.5	11	20
200	12000	76.2×96	12.1	10	17
200	15000	76.2×96	14.6	8	13
200	15000	76.2×120	16	8	13
200	18000	76.2×130	16.6	6	11
200	22000	76.2×155	19.8	5	9
200	22000	89×120	19.3	5	9
200	27000	89×130	21.5	4	7
200	33000	89×157	25.6	3	6
200	47000	89×220	28.3	3	5
250	680	35×60	2.5	170	290
250	1000	35×80	3.1	110	200
250	1500	35×80	3.8	74	130
250	1800	35×100	3.9	63	110
250	2200	35×120	4.9	52	90
250	2200	51×75	4.8	52	90
250	2700	51×75	4.9	42	74
250	3300	51×96	6.1	34	60
250	3300	51×100	6.2	34	60
250	3900	51×115	6.5	29	51
250	4700	51×120	8.4	24	42
250	4700	51×140	9.1	24	42
250	4700	63.5×96	8.65	24	42
250	5600	63.5×96	9.3	20	36
250	6800	51×140	9.9	17	29
250	6800	63.5×115	10.2	17	29
250	6800	76.2×100	10.6	17	29
250	8200	63.5×115	10.9	14	24
250	10000	63.5×130	11.7	11	20
250	10000	76.2×120	12.5	11	20
250	10000	76.2×140	13.3	11	20
250	12000	76.2×115	12.8	10	17
250	15000	76.2×130	15.2	8	13
250	15000	76.2×150	16.2	8	13
250	15000	89×120	16	8	13
250	18000	76.2×155	17.8	6	11
250	22000	89×157	21	5	9
250	33000	89×220	25.7	3	6
250	47000	100×240	28.4	3	5
350	390	35×50	1.9	290	510
350	470	35×60	2.1	240	420
350	470	35×65	2.2	240	420
350	560	35×70	2.3	210	360
350	680	35×80	2.8	170	290
350	820	35×90	3	140	240
350	1000	35×100	3.6	110	200
350	1000	51×65	3.7	110	200
350	1200	35×120	3.9	97	170
350	1200	51×75	3.9	97	170
350	1500	51×60	4.4	74	130
350	1500	51×65	4.5	74	130
350	1500	51×75	4.8	74	130
350	1800	51×70	5.8	63	110
350	1800	51×75	6	63	110
350	1800	51×80	6.1	63	110
350	1800	51×85	6.3	63	110
350	2200	51×80	6.7	52	90
350	2200	51×96	7.3	52	90
350	2200	51×105	7.6	52	90
350	2200	51×120	8	52	90
350	2700	51×90	7.8	42	74
350	2700	51×105	8.4	42	74
350	2700	51×115	8.7	42	74
350	2700	63.5×65	7.7	42	74
350	2700	63.5×80	8.4	42	74
350	2700	63.5×96	9.1	42	74
350	3300	51×105	8.5	34	60
350	3300	51×120	9.1	34	60
350	3300	51×130	9.4	34	60
350	3300	63.5×75	8.4	34	60
350	3300	63.5×85	8.8	34	60
350	3300	63.5×96	9.3	34	60

CapXon

RP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	3300	63.5×115	10	34	60
350	3900	51×130	11.3	29	51
350	3900	63.5×80	10.3	29	51
350	3900	63.5×96	11.1	29	51
350	3900	63.5×105	11.6	29	51
350	3900	63.5×115	12	29	51
350	3900	76.2×100	12.6	29	51
350	4700	51×140	12.9	24	42
350	4700	63.5×90	12	24	42
350	4700	63.5×115	13.3	24	42
350	4700	63.5×130	14	24	42
350	4700	76.2×70	12	24	42
350	4700	76.2×96	13.7	24	42
350	4700	76.2×100	13.8	24	42
350	5600	63.5×100	13.5	20	36
350	5600	63.5×130	15.2	20	36
350	5600	76.2×85	14.1	20	36
350	5600	76.2×96	14.8	20	36
350	5600	76.2×115	16	20	36
350	5600	76.2×125	16.5	20	36
350	5600	89×105	16.8	20	36
350	6800	63.5×125	15.9	17	29
350	6800	63.5×143	16.9	17	29
350	6800	76.2×95	15.7	17	29
350	6800	76.2×115	17	17	29
350	6800	76.2×130	17.9	17	29
350	6800	76.2×140	18.5	17	29
350	6800	89×100	17.5	17	29
350	8200	63.5×145	18.6	14	24
350	8200	76.2×105	17.9	14	24
350	8200	76.2×130	19.6	14	24
350	8200	76.2×143	20.4	14	24
350	8200	76.2×155	21.2	14	24
350	10000	63.5×165	21.8	11	20
350	10000	76.2×125	21.3	11	20
350	10000	76.2×155	23.4	11	20
350	10000	76.2×170	24.4	11	20
350	10000	76.2×190	25.6	11	20
350	10000	89×95	20.8	11	20
350	10000	89×120	22.9	11	20
350	10000	89×130	23.7	11	20
350	10000	89×157	25.7	11	20
350	12000	76.2×150	23.5	10	17
350	12000	76.2×180	25.5	10	17
350	12000	76.2×220	27.9	10	17
350	12000	89×110	22.5	10	17
350	12000	89×130	24.1	10	17
350	12000	89×145	25.3	10	17
350	12000	89×155	26	10	17
350	15000	76.2×190	29.2	8	13
350	15000	89×140	27.8	8	13
350	15000	89×155	29.1	8	13
350	15000	89×190	31.8	8	13
350	15000	89×219	34	8	13
350	18000	76.2×210	31	6	11
350	18000	89×155	29.5	6	11
350	18000	89×220	34.5	6	11
350	22000	89×190	32.1	5	9
350	22000	89×230	35.4	5	9
350	39000	100×240	42	3	5

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	330	35×50	1.8	340	600
400	390	35×60	2	290	510
400	390	35×65	2.1	290	510
400	470	35×70	2.2	240	420
400	560	35×80	2.8	210	360
400	680	35×90	2.9	170	290
400	820	35×100	3.5	140	240
400	1000	35×120	4	110	200
400	1000	51×60	3.6	110	200
400	1000	51×65	3.8	110	200
400	1000	51×75	4	110	200
400	1200	51×65	4.6	97	170
400	1200	51×75	4.9	97	170
400	1500	51×75	5.4	74	130
400	1500	51×80	5.6	74	130
400	1500	51×85	5.7	74	130
400	1500	51×100	6.1	74	130
400	1500	51×105	6.3	74	130
400	1800	51×85	6.3	63	110
400	1800	51×96	6.6	63	110
400	1800	63.5×65	6.4	63	110
400	2200	51×96	7.4	52	90
400	2200	51×105	7.7	52	90
400	2200	51×120	8.2	52	90
400	2200	51×130	8.5	52	90
400	2200	63.5×75	7.5	52	90
400	2200	63.5×96	8.4	52	90
400	2700	51×115	8.8	42	74
400	2700	63.5×85	8.7	42	74
400	2700	63.5×96	9.2	42	74
400	2700	63.5×105	9.6	42	74
400	3300	51×130	10.4	34	60
400	3300	51×145	10.9	34	60
400	3300	63.5×95	10.2	34	60
400	3300	63.5×100	10.4	34	60
400	3300	63.5×115	11.1	34	60
400	3300	63.5×120	11.3	34	60
400	3300	76.2×100	11.6	34	60
400	3900	51×170	12.8	29	51
400	3900	63.5×105	11.6	29	51
400	3900	63.5×115	12.1	29	51
400	3900	63.5×130	12.8	29	51
400	3900	76.2×85	11.8	29	51
400	3900	76.2×96	12.4	29	51
400	3900	76.2×105	12.9	29	51
400	4700	63.5×125	13.9	24	42
400	4700	63.5×130	14.1	24	42
400	4700	76.2×95	13.7	24	42
400	4700	76.2×100	14	24	42
400	4700	76.2×105	14.2	24	42
400	4700	76.2×115	14.8	24	42
400	4700	76.2×120	15.1	24	42
400	5600	63.5×140	15.8	20	36
400	5600	63.5×155	16.5	20	36
400	5600	76.2×105	16.7	20	36
400	5600	76.2×130	18.3	20	36
400	6800	63.5×165	17.5	17	29
400	6800	76.2×115	17.1	17	29
400	6800	76.2×130	17.4	17	29
400	6800	76.2×140	18	17	29

CapXon

RP series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	6800	76.2×155	18.8	17	29
400	6800	89×157	20.6	17	29
400	8200	63.5×210	22.2	14	24
400	8200	76.2×150	21	14	24
400	8200	76.2×155	21.3	14	24
400	8200	89×120	20.8	14	24
400	8200	89×130	21.5	14	24
400	8200	89×157	23.4	14	24
400	10000	76.2×160	23.9	11	20
400	10000	76.2×170	24.5	11	20
400	10000	76.2×190	25.8	11	20
400	10000	89×130	23.8	11	20
400	10000	89×155	25.7	11	20
400	12000	76.2×220	28	10	17
400	12000	89×155	26.1	10	17
400	12000	89×190	28.6	10	17
400	12000	89×219	30.5	10	17
400	15000	76.2×230	31.9	8	13
400	15000	89×180	31.1	8	13
400	15000	89×220	34	8	13
400	18000	89×230	34.6	6	11
400	22000	100×240	36	5	9
450	270	35×50	1.7	420	740
450	330	35×60	1.8	340	600
450	330	35×65	1.9	340	600
450	390	35×70	2.1	290	510
450	390	35×80	2.2	290	510
450	470	35×80	2.4	240	420
450	560	35×90	2.9	210	360
450	680	35×100	3.1	170	290
450	820	35×120	3.6	140	240
450	820	51×60	3.3	140	240
450	820	51×75	3.6	140	240
450	1000	51×70	4.34	110	200
450	1000	51×75	4.47	110	200
450	1000	51×80	4.6	110	200
450	1200	51×75	5	97	170
450	1200	51×96	5.6	97	170
450	1500	51×85	5.8	74	130
450	1500	51×105	6.4	74	130
450	1500	51×115	6.7	74	130
450	1500	51×120	6.8	74	130
450	1500	63.5×65	5.9	74	130
450	1500	63.5×80	6.4	74	130
450	1800	51×95	6.6	63	110
450	1800	51×118	7.3	63	110
450	1800	51×130	7.6	63	110
450	1800	63.5×75	6.8	63	110
450	1800	63.5×96	7.5	63	110
450	2200	51×125	8.4	52	90
450	2200	51×130	8.6	52	90
450	2200	63.5×85	8.1	52	90
450	2200	63.5×96	8.5	52	90
450	2200	63.5×100	8.6	52	90
450	2200	63.5×120	9.4	52	90
450	2700	51×145	9.9	42	74
450	2700	63.5×90	9	42	74
450	2700	63.5×96	9.3	42	74
450	2700	63.5×115	10.1	42	74
450	2700	76.2×96	10.3	42	74

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	3300	51×170	11.9	34	60
450	3300	63.5×105	10.8	34	60
450	3300	63.5×115	11.2	34	60
450	3300	63.5×130	11.8	34	60
450	3300	76.2×85	10.9	34	60
450	3300	76.2×96	11.5	34	60
450	3300	76.2×100	11.7	34	60
450	3300	76.2×120	12.6	34	60
450	3900	63.5×125	12.7	29	51
450	3900	63.5×130	12.9	29	51
450	3900	76.2×95	12.5	29	51
450	3900	76.2×100	12.8	29	51
450	3900	76.2×115	13.5	29	51
450	4700	63.5×145	14.9	24	42
450	4700	63.5×155	15.4	24	42
450	4700	76.2×105	14.4	24	42
450	4700	76.2×115	14.9	24	42
450	4700	76.2×120	15.2	24	42
450	4700	76.2×130	15.7	24	42
450	4700	76.2×160	17.2	24	42
450	4700	89×119	16.6	24	42
450	5600	63.5×165	18.5	20	36
450	5600	76.2×125	18.1	20	36
450	5600	76.2×130	18.4	20	36
450	5600	76.2×155	19.9	20	36
450	5600	89×134	20.4	20	36
450	6800	63.5×210	19.6	17	29
450	6800	76.2×140	18	17	29
450	6800	76.2×150	18.6	17	29
450	6800	89×120	18.4	17	29
450	6800	89×130	19.1	17	29
450	6800	89×157	20.7	17	29
450	8200	76.2×170	22.3	13	24
450	8200	76.2×220	25	13	24
450	8200	89×130	21.6	13	24
450	8200	89×155	23.4	13	24
450	10000	76.2×210	27.1	11	20
450	10000	76.2×215	27.4	11	20
450	10000	76.2×220	27.7	11	20
450	10000	89×155	25.8	11	20
450	10000	89×170	26.9	11	20
450	12000	89×190	28.7	10	17
450	12000	89×220	30.6	10	17
450	15000	89×220	34.1	8	13
500	120	35×50	0.8	1260	2210
500	270	35×80	1.3	560	980
500	330	35×100	1.5	460	800
500	390	35×120	1.8	390	680
500	470	51×60	2.2	320	560
500	470	51×75	2.4	320	560
500	680	51×65	2.8	220	390
500	680	51×96	3.3	220	390
500	820	51×75	3.2	180	320
500	820	51×115	3.9	180	320
500	1000	51×85	3.7	150	270
500	1000	51×130	4.5	150	270
500	1000	63.5×96	4.4	150	270
500	1200	51×96	4.3	130	220
500	1500	51×115	5.2	100	180
500	1500	63.5×96	5.4	100	180

CapXon

RP series

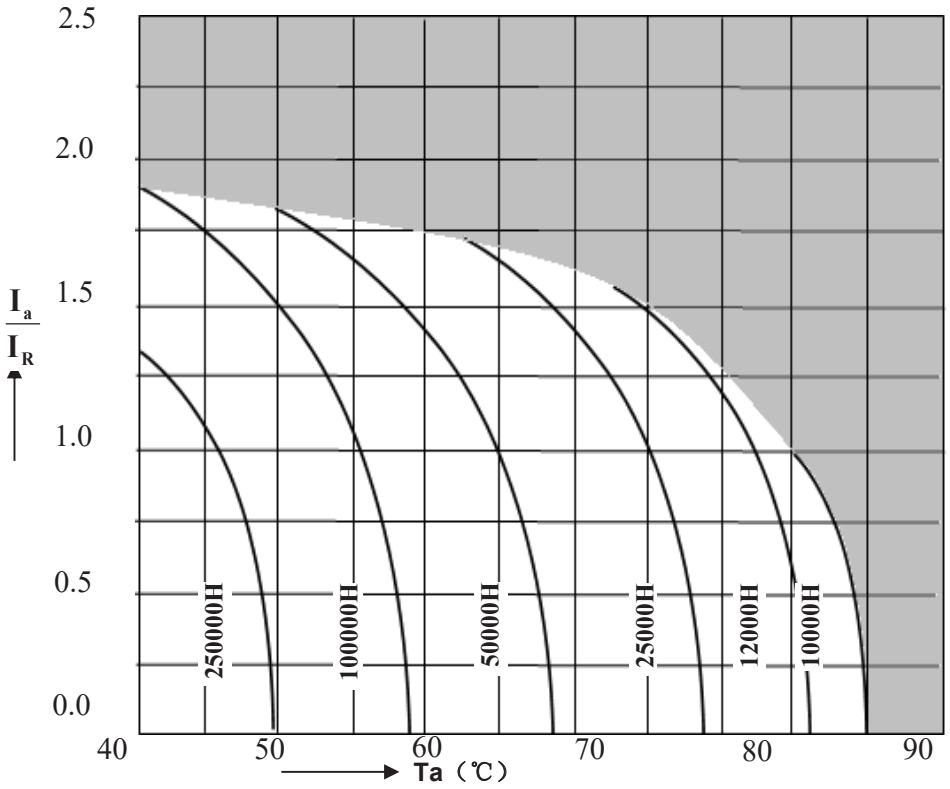
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	1500	63.5×115	5.9	100	180
500	1500	76.2×96	6	100	180
500	1800	51×130	6	86	150
500	1800	63.5×96	5.9	86	150
500	1800	63.5×130	6.8	86	150
500	2200	63.5×115	7.1	69	120
500	2200	76.2×96	7.3	69	120
500	2200	76.2×115	7.9	69	120
500	2700	63.5×130	8.6	56	98
500	2700	76.2×155	10.3	56	98
500	3300	76.2×115	10.1	46	80
500	3900	76.2×130	11.5	39	68
500	3900	89×155	13.6	39	68
500	4700	76.2×155	13.4	32	56
500	5600	89×157	14.8	27	47
500	6800	89×155	16	22	39
500	8200	89×196	18.2	18	32
500	10000	89×220	22.3	15	27
550	100	35×50	0.7	1510	2650
550	180	35×80	1.1	840	1470
550	270	35×100	1.4	560	980
550	330	35×120	1.7	460	800
550	390	51×60	2	390	680
550	390	51×75	2.2	390	680
550	560	51×65	2.5	270	470
550	560	51×96	3	270	470
550	560	63.5×96	3.3	270	470
550	680	51×75	2.9	220	390
550	680	51×96	3.3	220	390
550	680	51×115	3.6	220	390
550	680	63.5×115	4	220	390
550	820	51×80	3.4	180	320
550	820	51×85	3.5	180	320
550	820	51×96	3.7	180	320
550	820	51×130	4.2	180	320
550	820	63.5×130	4.8	180	320
550	1000	51×96	4.9	150	270
550	1000	51×105	5.1	150	270
550	1200	51×105	5.8	130	220
550	1200	51×115	6	130	220
550	1200	63.5×80	5.8	130	220
550	1200	76.2×96	7	130	220
550	1500	51×130	7.4	100	180
550	1500	63.5×96	7.3	100	180
550	1500	76.2×115	8.8	100	180
550	1800	63.5×96	8.3	86	150
550	1800	63.5×118	9.1	86	150
550	1800	76.2×80	8.6	86	150
550	1800	76.2×96	9.2	86	150
550	1800	76.2×130	10.5	86	150
550	2200	63.5×118	9.4	69	120
550	2200	63.5×130	9.8	69	120
550	2200	76.2×96	9.5	69	120
550	2200	76.2×105	9.9	69	120
550	2200	76.2×155	11.7	69	120
550	2700	63.5×130	10.8	56	98
550	2700	76.2×105	10.9	56	98
550	2700	76.2×115	11.3	56	98
550	2700	76.2×130	12	56	98
550	3300	76.2×118	12.1	46	80

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
550	3300	76.2×130	12.6	46	80
550	3300	76.2×143	13.2	46	80
550	3900	76.2×143	14.2	39	68
550	3900	89×120	14.4	39	68
550	4700	76.2×155	16.2	32	56
550	4700	89×145	17.2	32	56
550	4700	89×157	17.8	32	56
550	5600	76.2×190	18.8	27	47
550	5600	89×145	18.2	27	47
550	5600	89×155	18.7	27	47
550	6800	76.2×220	21.8	22	39
550	6800	89×170	21.1	22	39
550	8200	89×197	25.3	18	32
630	1000	63.5×130	6	190	330
630	1200	76.2×110	6.8	160	280
630	1500	76.2×130	8.2	130	220
630	1800	76.2×150	9.7	100	180
630	2200	89×130	10.8	86	150
630	2700	89×150	12.7	69	120
630	3300	89×170	14.8	57	100
630	3900	89×190	17.4	49	85
630	4700	100×220	21.5	40	71
630	5600	100×240	24.8	34	59

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RX series

RX Series 85℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Long useful life
- High reliability
- High ripple current capability
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc~650Vdc)
Rated voltage V_R	160 to 650 V DC
Surge voltage V_S	VR<=315V 1.15 VR VR > 315V 1.10 VR
Rated capacitance C_R	220 to 100000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	⩾600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH	
	d ⩾ 63.5 mm: approx. 20 nH	
	Capacitors with low-inductance design:	
	d ⩾ 63.5 mm: approx. 15 nH	
Useful life 85 °C; V_R, $I_{AC,R}$	>20000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1. 75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	5000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

V_R(V)	160~450	⩾500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

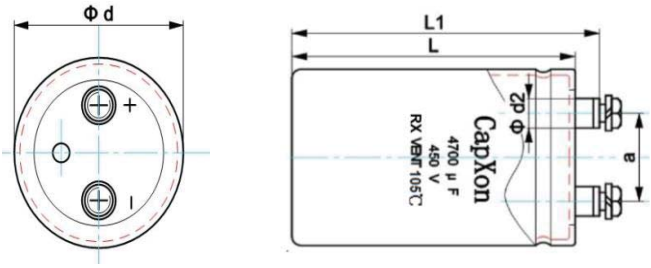
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RX series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	1000	35×60	2.5	110	200
160	1500	35×80	3.3	68	130
160	2200	35×80	3.45	48	90
160	2200	35×100	3.5	48	90
160	3300	35×120	4.72	32	60
160	3300	51×80	4.8	32	60
160	4700	51×80	5.1	22	42
160	4700	51×100	6	22	42
160	6800	51×100	6.4	15	29
160	6800	51×140	7	15	29
160	6800	63.5×100	7	15	29
160	10000	63.5×100	9.11	10	20
160	10000	63.5×120	10	10	20
160	15000	76.2×100	12.1	7	13
160	15000	76.2×120	13	7	13
160	22000	76.2×140	17	6.0	11
160	22000	89×130	18	6.0	11
160	33000	89×140	19.3	5.0	9
160	47000	89×170	20.7	4.0	7
160	47000	89×220	23	4.0	7
160	68000	89×220	23.2	3.5	6
160	100000	100×250	24.5	3.0	5
200	680	35×50	1.9	150	290
200	1000	35×60	2.6	110	200
200	1500	35×80	3.4	68	130
200	2200	35×100	3.6	48	90
200	2200	35×120	4	48	90
200	2200	51×80	4	48	90
200	3300	51×80	4.82	32	60
200	3300	51×100	5	32	60
200	4700	51×140	6.5	22	42
200	4700	63.5×100	6.48	22	42
200	6800	51×140	7.4	15	29
200	6800	63.5×120	8	15	29
200	10000	63.5×120	10.3	10	20
200	10000	76.2×120	13.1	10	20
200	15000	76.2×120	13.4	7	13
200	15000	76.2×140	15	7	13
200	15000	76.2×160	16.1	7	13
200	22000	76.2×160	17.4	6	9
200	22000	89×140	17.8	6	9
200	33000	89×170	19.55	4	7
200	47000	89×220	21	3	5.8
200	68000	100×250	22.7	3	5
250	470	35×60	2.7	220	420
250	680	35×80	2.8	150	290
250	1000	35×80	2.98	110	200
250	1000	35×100	3.3	110	200
250	1500	35×100	3.6	68	130
250	1500	51×80	3.7	68	130
250	2200	51×80	4.1	48	90
250	2200	51×100	5.5	48	90
250	3300	51×100	5.5	32	60
250	3300	51×140	6	32	60
250	3300	63.5×100	6	32	60
250	4700	63.5×100	7.35	22	42
250	4700	63.5×120	8	22	42
250	6800	63.5×120	8.95	15	29
250	6800	76.2×120	10	15	29
250	10000	76.2×120	13.3	10	20

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	10000	76.2×160	14	10	20
250	10000	89×140	14	10	20
250	15000	89×140	16.5	7	13
250	15000	89×170	18	7	13
250	22000	89×170	18.3	5	9
250	22000	89×220	22.4	5	9
250	33000	89×220	22.5	3	6
250	47000	100×250	28.5	3	5
350	330	35×60	2.1	320	600
350	470	35×80	3	220	420
350	680	35×100	3.8	150	290
350	820	35×80	4.1	130	240
350	1000	35×100	4.5	110	200
350	1000	51×60	4	110	200
350	1000	51×80	5.7	110	200
350	1200	51×60	4.95	89	170
350	1200	51×83	5.8	89	170
350	1500	51×75	6	68	130
350	1500	51×100	7	68	130
350	1800	51×75	6.8	58	110
350	1800	51×90	7.35	58	110
350	1800	63.5×96	8.5	58	110
350	2200	51×105	8.5	48	90
350	2200	51×120	9	48	90
350	2700	51×105	9.4	39	74
350	2700	51×115	10.6	39	74
350	2700	63.5×80	9.8	39	74
350	2700	63.5×85	10.1	39	74
350	3300	51×115	10.8	32	60
350	3300	51×130	12.5	32	60
350	3300	63.5×90	12	32	60
350	3300	63.5×100	12.5	32	60
350	3900	63.5×100	13	27	51
350	3900	63.5×115	13.9	27	51
350	3900	76.2×80	13	27	51
350	4700	63.5×105	14	22	42
350	4700	63.5×115	14.5	22	42
350	4700	76.2×90	14	22	42
350	4700	76.2×120	16	22	42
350	5600	63.5×130	17.4	19	36
350	5600	63.5×150	19	19	36
350	5600	76.2×100	16.8	19	36
350	5600	76.2×115	18	19	36
350	6800	63.5×140	19	15	29
350	6800	63.5×155	19.6	15	29
350	6800	76.2×105	19	15	29
350	6800	76.2×115	20	15	29
350	6800	89×100	20	15	29
350	8200	63.5×170	20.7	13	24
350	8200	63.5×190	22	13	24
350	8200	76.2×120	20	13	24
350	8200	76.2×143	21	13	24
350	8200	76.2×155	22.5	13	24
350	8200	89×105	20	13	24
350	8200	89×120	22	13	24
350	10000	76.2×140	24	10	20
350	10000	76.2×155	25	10	20
350	10000	89×130	27	10	20
350	10000	89×155	29	10	20
350	12000	76.2×170	27.6	9	17

CapXon

RX series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	12000	89×130	27.5	9	17
350	12000	89×155	29.5	9	17
350	12000	89×170	31	9	17
350	15000	76.2×220	35.4	7	13
350	15000	89×155	33.8	7	13
350	15000	89×170	35.1	7	13
350	15000	89×190	36	7	13
350	18000	89×180	43.8	6	11
350	18000	89×220	44.6	6	11
350	18000	100×190	48	6	11
350	22000	89×220	46.7	5	9
350	22000	100×250	48	5	9
400	220	35×50	1.9	470	900
400	330	35×60	2.3	320	600
400	470	35×80	4.4	220	420
400	680	35×80	4.5	150	290
400	680	35×120	5	150	290
400	680	51×80	6	150	290
400	820	35×100	4.7	130	240
400	1000	51×60	4.8	110	200
400	1000	51×80	6.2	110	200
400	1200	51×70	5	89	170
400	1200	51×83	6.5	89	170
400	1500	51×80	6.4	68	130
400	1500	51×95	7	68	130
400	1500	63.5×95	8	68	130
400	1800	51×85	7	58	110
400	1800	51×95	7.4	58	110
400	2200	51×105	8.8	48	90
400	2200	51×115	10	48	90
400	2200	63.5×85	10.1	48	90
400	2200	63.5×100	11.5	48	90
400	2200	76.2×105	12.5	48	90
400	2700	51×115	10.8	39	74
400	2700	51×130	11	39	74
400	2700	63.5×90	11	39	74
400	2700	63.5×105	12	39	74
400	2700	76.2×75	11.6	39	74
400	3300	51×130	12.8	32	60
400	3300	51×150	14	32	60
400	3300	63.5×95	13	32	60
400	3300	63.5×115	14	32	60
400	3300	76.2×90	14	32	60
400	3300	76.2×105	14.3	32	60
400	3300	76.2×120	15	32	60
400	3900	63.5×100	14.2	27	51
400	3900	63.5×115	15.2	27	51
400	3900	76.2×90	15.1	27	51
400	3900	76.2×120	16.5	27	51
400	4700	63.5×120	16	22	42
400	4700	63.5×155	17.5	22	42
400	4700	76.2×105	15.5	22	42
400	5600	63.5×145	18	19	36
400	5600	63.5×155	18.2	19	36
400	5600	63.5×170	19	19	36
400	5600	76.2×105	17	19	36
400	5600	76.2×130	19	19	36
400	5600	89×92	18	19	36
400	6800	63.5×160	23.5	15	29
400	6800	63.5×190	24.2	15	29

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	6800	76.2×130	19.2	15	29
400	6800	76.2×150	21.5	15	29
400	6800	89×105	21.2	15	29
400	6800	89×120	22.3	15	29
400	8200	76.2×135	24	13	24
400	8200	76.2×155	25	13	24
400	8200	76.2×170	26.2	13	24
400	8200	89×120	25	13	24
400	8200	89×140	26	13	24
400	10000	76.2×160	31.6	10	20
400	10000	76.2×180	33	10	20
400	10000	89×130	31	10	20
400	10000	89×155	34	10	20
400	12000	76.2×220	34	9	17
400	12000	89×155	30	9	17
400	12000	89×170	31.3	9	17
400	15000	89×180	39.9	7	13
400	15000	89×200	40.7	7	13
400	18000	89×210	43	6	11
400	18000	89×240	45	6	11
400	22000	100×240	47	5	9
420	820	51×60	3.8	130	240
420	1000	51×70	5.1	110	200
420	1200	51×80	6.6	89	170
420	1800	51×95	7.6	58	110
420	1800	51×105	8	58	110
420	2200	51×115	10.1	48	90
420	2700	51×120	11	39	74
420	2700	63.5×90	11	39	74
420	3300	51×130	13	32	60
420	3300	63.5×105	13.5	32	60
420	3300	76.2×105	14.6	32	60
420	3900	63.5×115	15.8	27	51
420	3900	63.5×130	16.4	27	51
420	3900	76.2×90	15.5	27	51
420	4700	63.5×143	17	22	42
420	4700	63.5×155	17.8	22	42
420	4700	76.2×105	15.7	22	42
420	4700	76.2×143	17.5	22	42
420	5600	63.5×170	19.2	19	36
420	5600	76.2×115	17.5	19	36
420	5600	76.2×130	19.2	19	36
420	5600	89×90	18.1	19	36
420	6800	76.2×143	21.1	15	29
420	6800	76.2×155	22	15	29
420	6800	89×105	19.9	15	29
420	6800	89×115	20.5	15	29
420	8200	76.2×170	27.1	13	24
420	8200	89×115	25	13	24
420	8200	89×130	26.2	13	24
420	10000	76.2×180	34	10	20
420	10000	76.2×220	37	10	20
420	10000	89×143	33	10	20
420	10000	89×155	35	10	20
420	12000	76.2×220	35	9	17
420	12000	89×155	31.1	9	17
420	12000	89×170	31.7	9	17
420	15000	89×190	40.1	7	13
420	18000	89×220	43.3	6	11
450	220	35×50	2	470	900

CapXon

RX series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	330	35×60	2.5	320	600
450	470	35×80	4.5	220	420
450	470	51×75	4.5	220	420
450	680	35×100	4.6	150	290
450	680	35×120	5.2	150	290
450	680	51×80	6.2	150	290
450	820	35×110	6.4	130	240
450	820	51×60	6	130	240
450	1000	51×70	6.3	110	200
450	1000	51×80	6.5	110	200
450	1200	51×80	7	89	170
450	1200	51×95	7.3	89	170
450	1200	63.5×95	8.3	89	170
450	1500	51×95	7.5	68	130
450	1500	51×115	7.8	68	130
450	1800	51×105	8.2	58	110
450	1800	51×115	8.4	58	110
450	1800	63.5×80	8	58	110
450	1800	63.5×105	8.5	58	110
450	2200	51×115	10.2	48	90
450	2200	51×130	11	48	90
450	2200	63.5×90	10	48	90
450	2200	63.5×120	12.1	48	90
450	2200	76.2×85	11	48	90
450	2700	51×115	11.2	39	74
450	2700	51×130	12	39	74
450	2700	63.5×95	12	39	74
450	2700	63.5×115	13	39	74
450	2700	76.2×80	12	39	74
450	2700	76.2×130	14.8	39	74
450	3300	63.5×105	13.6	32	60
450	3300	63.5×115	14	32	60
450	3300	76.2×100	15.5	32	60
450	3300	76.2×120	16	32	60
450	3900	63.5×125	16	27	51
450	3900	63.5×150	16.6	27	51
450	3900	76.2×90	15	27	51
450	3900	76.2×115	17	27	51
450	3900	89×90	17	27	51
450	4700	63.5×145	18.7	22	42
450	4700	63.5×170	20	22	42
450	4700	76.2×105	18	22	42
450	4700	76.2×130	20	22	42
450	4700	89×110	20	22	42
450	5600	63.5×165	21.7	19	36
450	5600	63.5×190	23.2	19	36
450	5600	76.2×115	20.5	19	36
450	5600	76.2×130	21.6	19	36
450	5600	89×90	20.2	19	36
450	5600	89×120	22.8	19	36
450	6800	89×105	22.8	15	29
450	6800	89×130	25	15	29
450	8200	76.2×165	27	13	24
450	8200	76.2×180	30	13	24
450	8200	89×130	29	13	24
450	8200	89×155	31	13	24
450	10000	76.2×220	37.5	10	20
450	10000	89×155	36.1	10	20
450	10000	89×170	37.6	10	20
450	12000	76.2×220	39.1	9	17

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	12000	89×155	36.4	9	17
450	12000	89×190	39.9	9	17
450	12000	100×190	42.5	9	17
450	15000	89×220	43.5	7	13
450	15000	89×240	45.3	7	13
450	15000	100×195	43.9	7	13
450	18000	100×237	48	6	11
450	22000	89×236	48	5	9
500	1000	51×95	5.6	140	270
500	1000	51×110	6	140	270
500	1000	63.5×80	6	140	270
500	1200	51×95	7.1	120	220
500	1200	51×115	8	120	220
500	1200	63.5×85	8.1	120	220
500	1500	51×100	7.2	95	180
500	1500	51×115	7.5	95	180
500	1500	63.5×90	7.5	95	180
500	1500	63.5×105	7.8	95	180
500	1800	51×130	8.3	79	150
500	1800	63.5×90	8.2	79	150
500	1800	63.5×115	8.6	79	150
500	2200	51×143	12.1	63	120
500	2200	51×150	12.5	63	120
500	2200	63.5×105	11.5	63	120
500	2200	63.5×115	12.2	63	120
500	2700	63.5×115	13.2	52	98
500	2700	63.5×143	13.8	52	98
500	2700	76.2×90	12.2	52	98
500	2700	76.2×110	13.1	52	98
500	3300	63.5×130	14.3	42	80
500	3300	63.5×150	15.1	42	80
500	3300	76.2×105	15.1	42	80
500	3300	76.2×115	16	42	80
500	3900	63.5×170	17.2	36	68
500	3900	76.2×115	17.5	36	68
500	3900	76.2×130	18.2	36	68
500	3900	89×90	17.8	36	68
500	3900	89×120	19.5	36	68
500	4700	76.2×135	20.5	30	56
500	4700	76.2×150	21.8	30	56
500	4700	89×105	20	30	56
500	4700	89×130	22	30	56
500	5600	76.2×143	20	25	47
500	5600	76.2×170	20.8	25	47
500	5600	89×115	18.2	25	47
500	5600	89×130	19.5	25	47
500	6800	76.2×180	31	21	39
500	6800	76.2×190	31.5	21	39
500	6800	89×143	30.6	21	39
500	6800	89×170	31.8	21	39
500	8200	76.2×220	31.8	17	32
500	8200	89×155	32	17	32
500	8200	89×175	33	17	32
500	8200	100×175	34.1	17	32
500	10000	89×190	38.3	14	27
500	10000	89×220	39.5	14	27
500	10000	100×190	41.5	14	27
500	12000	89×220	39.1	12	22
500	12000	89×240	40.5	12	22
500	12000	100×210	41.6	12	22

CapXon

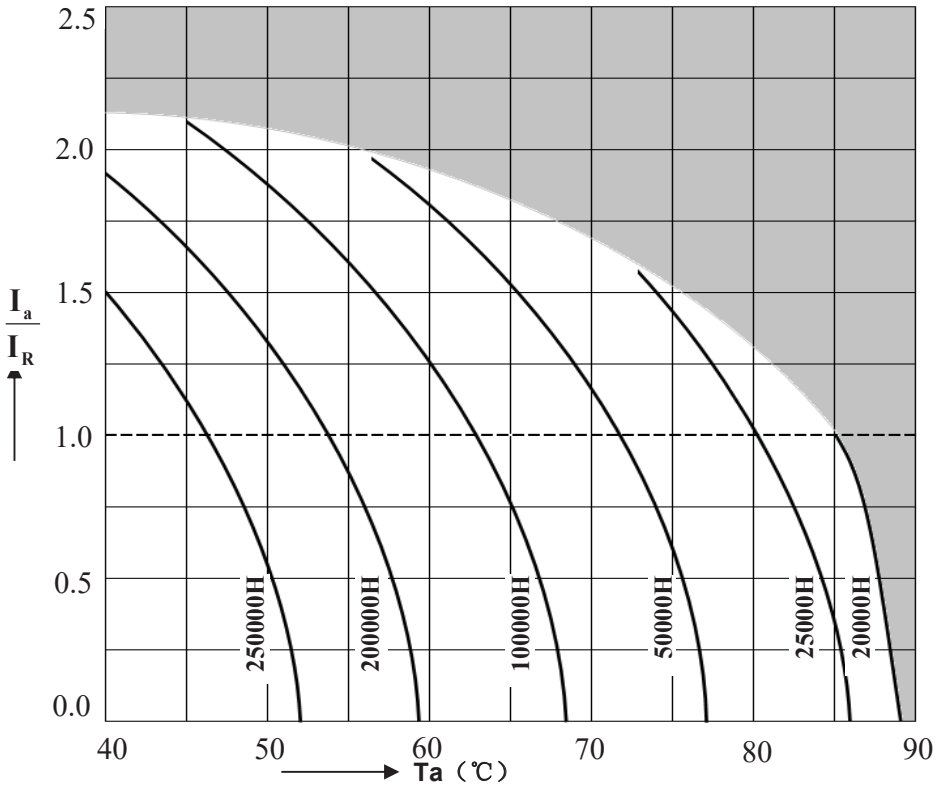
RX series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	12000	100×240	42.4	12	22
500	15000	89×220	41.8	9	18
500	15000	100×250	43.5	9	18
550	1200	51×110	6.4	120	220
550	1200	63.5×110	8	120	220
550	1500	51×130	7.7	95	180
550	1500	63.5×130	9	95	180
550	1800	63.5×105	8.7	79	150
550	1800	63.5×120	9	79	150
550	1800	76.2×110	10	79	150
550	2200	63.5×120	10.3	63	120
550	2200	76.2×130	13	63	120
550	2700	63.5×150	12.5	52	98
550	2700	76.2×105	12.3	52	98
550	2700	76.2×155	16	52	98
550	3300	63.5×170	15.2	42	80
550	3300	76.2×130	15.6	42	80
550	3300	76.2×155	17	42	80
550	3900	76.2×140	18.4	36	68
550	3900	89×150	21	36	68
550	4700	76.2×170	22.2	30	56
550	4700	89×130	23.2	30	56
550	4700	89×170	25	30	56
550	5600	76.2×190	25	25	47
550	5600	89×150	24.5	25	47
550	5600	89×190	27.2	25	47
550	6800	89×170	27.5	21	39
550	6800	89×190	28.9	21	39
550	8200	89×220	36.5	17	32
550	8200	100×170	35	17	32
550	8200	100×220	40	17	32
550	10000	89×240	42.5	14	27
550	10000	100×200	42.4	14	27
550	10000	100×250	43	14	27
600	1200	63.5×95	7	150	280
600	1500	63.5×110	8.4	120	220
600	1800	63.5×125	9.7	95	180
600	1800	76.2×95	9.5	95	180
600	2200	63.5×145	11.4	79	150
600	2200	76.2×110	11.2	79	150
600	2700	63.5×170	13.5	63	120
600	2700	76.2×125	13.2	63	120
600	3300	76.2×145	15.5	53	100
600	3900	76.2×170	21.1	45	85
600	3900	89×130	19.8	45	85
600	4700	76.2×190	22.5	37	71
600	4700	89×150	24	37	71
600	5600	89×170	26	31	59
650	1000	63.5×100	7.2	170	330
650	1200	63.5×110	8	150	280
650	1500	63.5×130	9.2	120	220
650	1800	63.5×150	10.5	95	180
650	2200	63.5×170	12.3	79	150
650	2700	76.2×150	14.5	63	120
650	3300	76.2×170	16.8	53	100
650	3900	89×155	22	45	85
650	4700	89×190	28	37	71

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RU series

RU Series 105℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Long useful life
- High reliability
- High ripple current capability
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc)
Rated voltage V_R	160 to 500 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R VR > 315V 1.10 V_R
Rated capacitance C_R	820 to 33000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	⩾600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH
	d ⩾ 63.5 mm: approx. 20 nH
	Capacitors with low-inductance design:
	d ⩾ 63.5 mm: approx. 15 nH

Useful life 85 °C; V_R, $I_{AC,R}$	>12000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ⩽ ±10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

V_R(V)	160~450	⩾500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

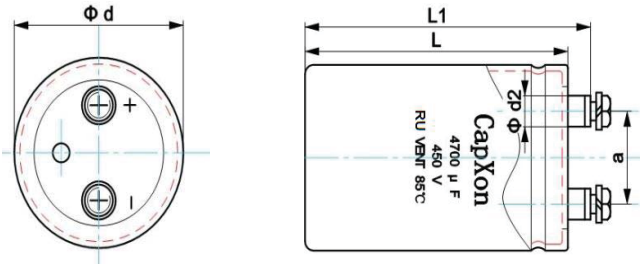
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
200	3300	51×80	8.59	33	60
200	3900	51×95	9.78	28	51
200	4700	51×105	11.3	24	42
200	4700	63.5×80	11.4	24	42
200	5600	51×115	12.4	20	36
200	5600	63.5×95	12.9	20	36
200	6800	63.5×95	14	16	29
200	8200	63.5×115	17.6	13	24
200	8200	76.2×95	18	13	24
200	10000	63.5×130	19.8	11	20
200	10000	76.2×105	20	11	20
200	12000	76.2×115	22.3	9	17
200	15000	76.2×140	27.8	7	13
200	15000	89×120	28.4	7	13
200	18000	76.2×155	30.5	6	11
200	18000	89×140	31.8	6	11
200	22000	76.2×190	34.6	5	9
200	22000	89×170	35.9	5	9
200	27000	76.2×220	39.4	4	7
200	27000	89×195	40.6	4	7
200	33000	89×220	45.9	3	6
250	2700	51×80	7.28	41	74
250	3300	51×80	8.9	33	60
250	3900	51×105	9.93	28	51
250	3900	63.5×80	10	28	51
250	4700	51×130	11.6	24	42
250	4700	63.5×95	11.7	24	42
250	5600	63.5×95	12.3	20	36
250	6800	63.5×115	15.4	16	29
250	6800	76.2×95	15.8	16	29
250	8200	63.5×130	17.4	13	24
250	8200	76.2×105	17.6	13	24
250	10000	76.2×115	20.2	11	20
250	10000	89×120	22.5	11	20
250	12000	76.2×140	24.2	9	17
250	12000	89×120	24.7	9	17
250	15000	76.2×160	27.5	7	13
250	15000	89×140	28.3	7	13
250	18000	76.2×190	30.6	6	11
250	18000	89×170	31.7	6	11
250	22000	76.2×220	34.8	5	9
250	22000	89×195	35.9	5	9
250	27000	89×220	40.8	4	7
350	1500	51×80	6.44	72	130
350	1800	51×80	9.51	61	110
350	2200	51×80	9.7	50	90
350	2200	51×95	10.8	50	90
350	2200	63.5×80	11.3	50	90
350	2700	51×95	12	41	74
350	2700	63.5×80	12.6	41	74
350	3300	51×115	14.3	33	60
350	3300	63.5×90	14.5	33	60
350	3900	51×130	16.2	28	51
350	3900	63.5×95	16.3	28	51
350	3900	63.5×105	16.6	28	51
350	4700	63.5×105	17.9	24	42
350	4700	76.2×95	19.3	24	42
350	5600	63.5×120	19.4	20	36
350	5600	76.2×95	20.2	20	36
350	6800	63.5×140	23.2	16	29
350	6800	76.2×105	23.1	16	29
350	6800	89×100	25	16	29
350	8200	76.2×115	25.1	13	24
350	8200	89×120	29.6	13	24
350	10000	76.2×140	32.1	11	20
350	10000	89×120	33.2	11	20
350	12000	76.2×170	35.3	9	17
350	12000	89×140	37.3	9	17
350	15000	76.2×190	41	7	13
350	15000	89×160	41.9	7	13
350	18000	89×195	48.1	6	11
350	22000	89×220	50.5	5	9
400	1000	51×80	4.6	110	200
400	1500	51×80	7	72	130
400	1800	51×95	9.98	61	110
400	2200	51×100	11.2	50	90
400	2200	63.5×80	11.6	50	90
400	2700	51×115	13.2	41	74
400	2700	63.5×95	13.9	41	74
400	3300	51×130	14.6	33	60
400	3300	63.5×105	15	33	60
400	3900	63.5×105	16.1	28	51
400	3900	76.2×95	18.3	28	51
400	4700	63.5×130	20.2	24	42
400	4700	76.2×95	20	24	42
400	5600	63.5×140	21.5	20	36
400	5600	76.2×115	21.8	20	36
400	6800	76.2×130	25.2	16	29
400	6800	89×120	27.3	16	29
400	8200	76.2×155	29.2	13	24
400	8200	89×120	29.1	13	24
400	10000	76.2×165	32.5	11	20
400	10000	89×140	34.7	11	20
400	12000	76.2×220	39.5	8	17
400	12000	89×160	38	8	17
400	15000	76.2×230	42.1	7	13
400	15000	89×180	41.6	7	13
400	18000	89×220	46.4	6	11
450	1200	51×80	7.11	94	170
450	1500	51×80	7.79	72	130
450	1800	51×105	9.59	61	110
450	1800	63.5×80	9.77	61	110
450	2200	51×115	11	50	90
450	2200	63.5×95	11.4	50	90
450	2700	63.5×95	12.6	41	74
450	2700	76.2×95	14.2	41	74
450	3300	63.5×115	14.4	33	60
450	3300	76.2×95	15	33	60
450	3900	63.5×130	16.2	28	51
450	3900	76.2×105	16.3	28	51
450	4700	76.2×115	20.4	24	42
450	5600	76.2×130	22.9	20	36
450	5600	89×120	24.2	20	36
450	6800	76.2×155	27.3	16	29
450	8200	76.2×190	29.6	13	24
450	8200	89×170	30.7	13	24
450	10000	76.2×220	32.6	11	20
450	10000	89×170	33.4	11	20
450	12000	89×195	37.7	9	17
500	820	51×80	5.09	180	320

CapXon

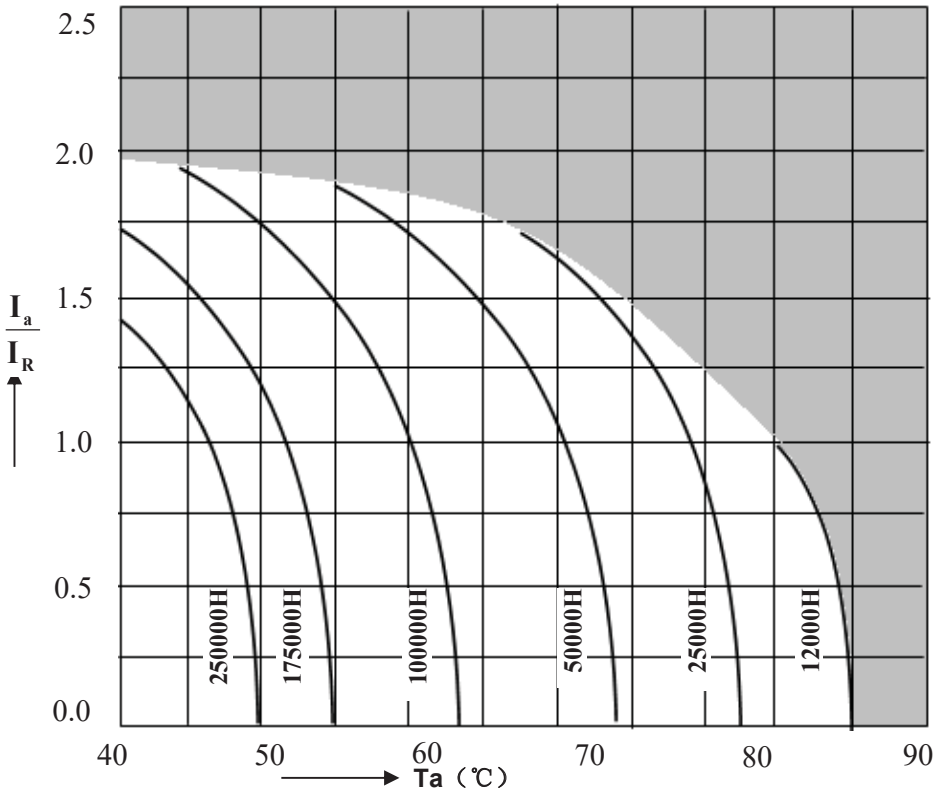
RU series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	1000	51×95	5.8	150	270
500	1200	51×95	6.57	120	220
500	1200	63.5×80	7	120	220
500	1500	51×115	7.68	100	180
500	1500	63.5×80	7.79	100	180
500	1800	51×130	8.77	83	150
500	1800	63.5×95	8.83	83	150
500	2200	63.5×105	10	67	120
500	2700	63.5×115	11.5	55	98
500	2700	76.2×95	11.9	55	98
500	3300	63.5×140	13.2	45	80
500	3300	76.2×115	13.5	45	80
500	3900	76.2×130	15.1	38	68
500	4700	76.2×120	18.7	31	56
500	5600	76.2×165	19.9	26	47
500	5600	89×140	20.8	26	47
500	6800	76.2×190	22.8	22	39
500	6800	89×170	23.5	22	39
500	8200	76.2×220	26.2	18	32
500	8200	89×195	26.6	18	32
500	10000	89×220	30.4	15	27

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RJ series

RJ Series 85°C

Features

Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Long useful life
- High reliability
- All-welded construction ensures reliable electrical contact
- Version with low-inductance design available
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

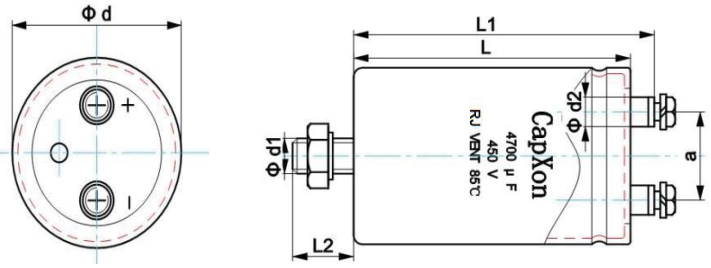
Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated voltage V_R	160 to 450 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	1500 to 22000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) 160~450 D.F. (%)max. 15
Self-inductance ESL	d = 51 mm: approx. 17 nH d ⩾ 63.5 mm: approx. 20 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 15 nH
Useful life 85 °C; V_R,$I_{AC,R}$ — >10000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R — 2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) 160~450 $Z_{-25℃}$ / $Z_{20℃}$ 4 $Z_{-40℃}$ / $Z_{20℃}$ 10
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve						
	d±2	L±3	L_1±3	L_2+/-1	d_1	$d_2$max.	a±0.5
M5	63.5	80~140	86.5~146.5	16	M12	10.3	28.6
M5/M6	76.2/89	100~240	106.4~246.5	16	M12	10.3	31.8
M5/M6	76.2/89	100~240	106.4~246.5	16	M12	17.5	31.8
M6	100	100~240	110~250	16	M12	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

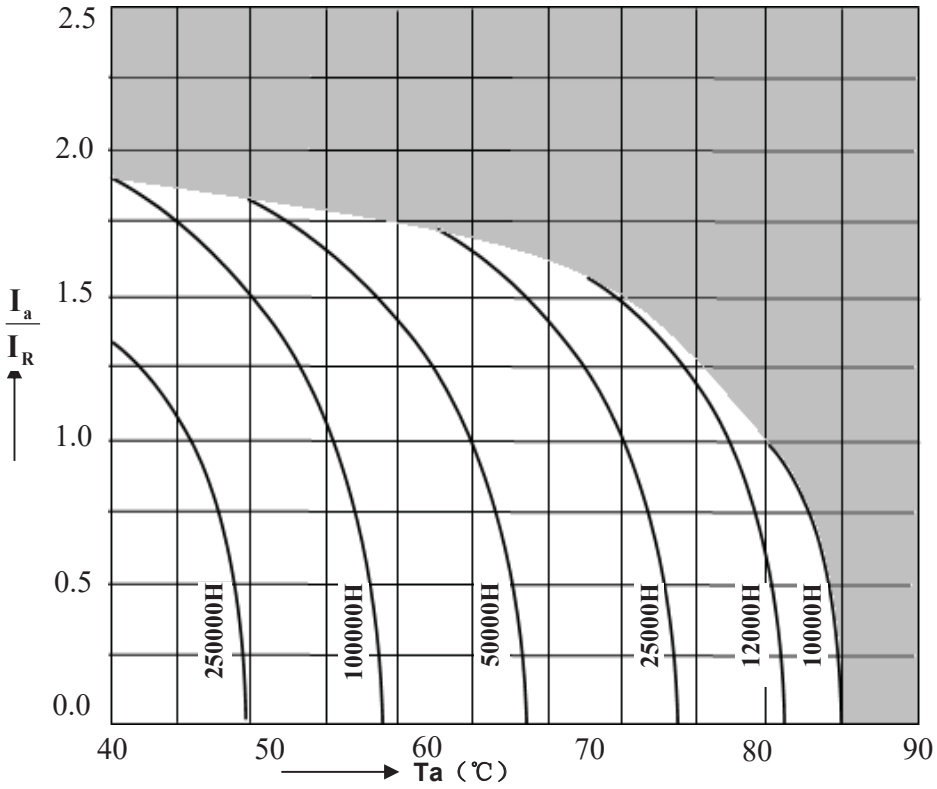
RJ series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	2700	63.5×80	12.8	42	74
350	3300	63.5×100	14.2	34	60
350	3900	63.5×105	14.6	29	51
350	4700	63.5×120	15	24	42
350	4700	63.5×140	15.5	24	42
350	4700	76.2×100	19.7	24	42
350	5600	63.5×140	21.5	20	36
350	6800	76.2×120	22.5	17	29
350	6800	76.2×140	24	17	29
350	6800	89×100	23	17	29
350	8200	76.2×160	26	14	24
350	10000	76.2×160	27.5	11	20
350	10000	89×120	26	11	20
350	12000	76.2×180	29	10	17
350	12000	76.2×220	32	10	17
350	15000	89×160	34	8	13
350	15000	89×220	39	8	13
350	18000	89×220	40	6	11
350	22000	89×230	42	5	9
400	2700	63.5×105	10.8	42	74
400	3300	63.5×100	11	34	60
400	3300	63.5×120	12	34	60
400	3900	76.2×100	14	29	51
400	3900	76.2×105	14.3	29	51
400	4700	76.2×100	15.7	24	42
400	4700	76.2×120	17	24	42
400	5600	76.2×140	18.8	20	36
400	6800	76.2×140	22	17	29
400	6800	76.2×160	23	17	29
400	8200	76.2×160	23.5	14	24
400	10000	76.2×160	24	11	20
400	10000	89×130	25	11	20
400	12000	89×160	25.5	10	17
400	12000	89×220	28.5	10	17
400	15000	76.2×230	33	8	13
400	15000	89×180	32	8	13
400	15000	89×220	35	8	13
400	18000	89×240	38	6	11
450	1500	63.5×80	11.4	74	130
450	2200	63.5×100	12.5	52	90
450	2200	63.5×105	12.8	52	90
450	2200	63.5×120	13.5	52	90
450	2700	76.2×105	14.6	42	74
450	3300	63.5×120	15	34	60
450	3300	63.5×140	16	34	60
450	3300	76.2×120	17.7	34	60
450	3900	76.2×120	18	29	51
450	3900	76.2×140	19	29	51
450	4700	76.2×120	18.3	24	42
450	4700	76.2×140	19.6	24	42
450	4700	76.2×160	20.5	24	42
450	5600	76.2×160	21	20	36
450	6800	76.2×160	22	17	29
450	8200	76.2×220	25.6	14	24
450	10000	76.2×220	26	11	20
450	10000	89×170	26	11	20

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RY series

RY Series 105℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

- Long useful life
- High reliability
- High ripple current capability
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃
Rated voltage V_R	160 to 450 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	150 to 22000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) 160~450 D.F. (%)max. 15
Self-inductance ESL	d = 51 mm: approx. 17 nH d ⩾ 63.5 mm: approx. 20 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 15 nH
Useful life 85 °C; V_R, $I_{AC,R}$	>12000 h Requirements: △C/C ⩽15% of initial value ESR ⩽1. 75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) 160~450 $Z_{-25℃}$ / $Z_{20℃}$ 4 $Z_{-40℃}$ / $Z_{20℃}$ 10
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

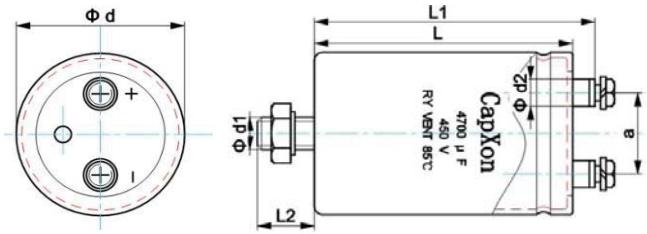
Frequency(Hz)	50	120	300	1K	≧3K
Multiplier	0.8	1	1.2	1.3	1.4

CapXon

RY series

Dimensional drawings

Threaded stud mounting



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve						
	d±2	L±3	L_1±3	L_2+/-1	d_1	$d_2$max.	a±0.5
M5	63.5	80~140	86.5~146.5	16	M12	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	16	M12	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	16	M12	17.5	31.8
M6	100	100~240	110~250	16	M12	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

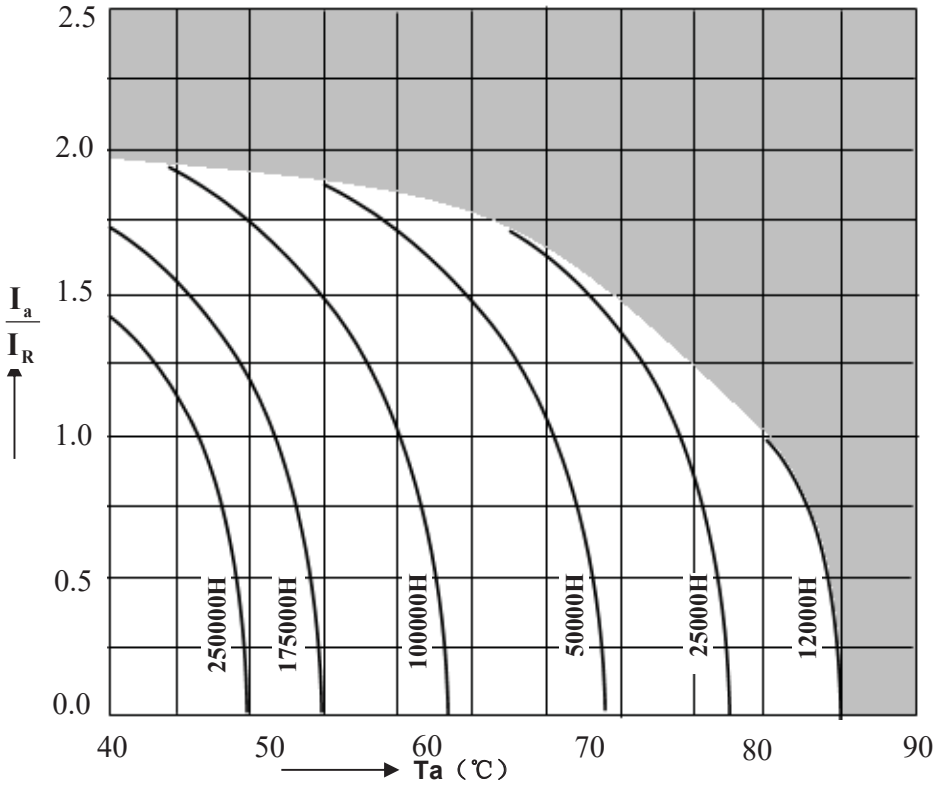
RY series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	2700	63.5×80	16	41	74
350	3300	63.5×100	19	33	60
350	3900	63.5×105	21	28	51
350	4700	63.5×120	22	24	42
350	4700	63.5×140	23.5	24	42
350	4700	76.2×100	24	24	42
350	5600	63.5×140	28	20	36
350	5600	76.2×105	30	20	36
350	6800	76.2×120	31	16	29
350	6800	76.2×140	33	16	29
350	6800	89×100	34	16	29
350	8200	76.2×140	36	13	24
350	8200	76.2×160	38	13	24
350	10000	76.2×160	42	11	20
350	10000	89×120	42	11	20
350	12000	76.2×180	45	9	17
350	12000	76.2×220	49	9	17
350	12000	89×145	51	9	17
350	15000	76.2×220	53	7	13
350	15000	89×160	53	7	13
350	15000	89×220	55	7	13
350	18000	89×220	58	6	11
350	22000	89×230	60	5	9
400	2700	63.5×105	17	41	74
400	3300	63.5×100	20	33	60
400	3300	63.5×120	21.5	33	60
400	3900	76.2×100	23	28	51
400	3900	76.2×105	23.5	28	51
400	4700	76.2×100	26	24	42
400	4700	76.2×120	28	24	42
400	5600	76.2×140	30	20	36
400	6800	76.2×140	33	16	29
400	6800	76.2×160	35	16	29
400	8200	76.2×160	36.5	13	24
400	10000	76.2×190	38	11	20
400	10000	89×160	39	11	20
400	12000	89×160	41	9	17
400	12000	89×220	46	9	17
400	15000	76.2×230	48	7	13
400	15000	89×180	52	7	13
400	15000	89×220	57	7	13
400	18000	89×240	60	6	11
450	1500	63.5×80	13	72	130
450	2200	63.5×100	14	50	90
450	2200	63.5×105	15	50	90
450	2200	63.5×120	16	50	90
450	2700	76.2×105	18	41	74
450	3300	63.5×140	23	33	60
450	3300	76.2×100	23	33	60
450	3300	76.2×120	25	33	60
450	3900	76.2×120	25	28	51
450	3900	76.2×140	26.7	28	51
450	4700	76.2×120	27	24	42
450	4700	76.2×140	28	24	42
450	4700	76.2×160	29	24	42
450	5600	76.2×160	31.5	20	36
450	6800	76.2×160	32	16	29
450	8200	76.2×220	36	13	24
450	10000	76.2×220	40	11	20
450	10000	89×170	40	11	20

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RK series

RK Series 105℃

Features

General capacitors

Applications

- Frequency converters
- Professional power supplies
- Uninterruptible power supplies

Features

- Wide temperature range
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated voltage V_R	10 to 100 V DC
Surge voltage V_S	1.15 V_R
Rated capacitance C_R	1000 to 1000000 µF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

WV \ ⌀D	35	51	63.5	76.2	89
10	75	100	120	150	180
16	60	70	80	120	140
25	40	50	70	80	130
35	30	50	60	70	90
40	30	50	60	70	90
50	25	30	50	60	80
63	20	25	30	40	60
80	20	20	25	30	50
100	15	20	25	30	30

Self-inductance ESL	d = 35 mm: approx. 10 nH
	d = 51 mm: approx. 15 nH
	d ⩾ 63.5 mm: approx. 20 nH

Useful life 105 °C; V_R,$I_{AC,R}$	>4000 h	Requirements: △C/C ⩽45% of initial value ESR ⩽3 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R	2000 h	Post test requirements: DC/C ⩽ ±15% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

$Z_{-25℃}$ / $Z_{20℃}$	3
$Z_{-40℃}$ / $Z_{20℃}$	12

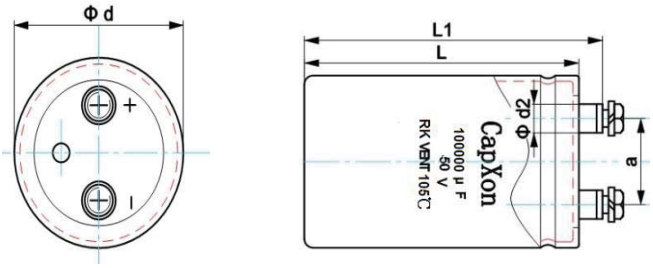
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	≧3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
10	27000	35×50	4.9	20	37
10	33000	35×50	5.1	15	30
10	39000	35×60	5.9	13	26
10	47000	35×80	7.1	12	21
10	56000	35×80	8	12	18
10	68000	35×100	8.5	10	18
10	68000	51×80	8.5	10	20
10	82000	35×100	8.9	8.0	17
10	100000	35×120	10.7	7.5	16
10	100000	51×80	10.7	7.5	16
10	120000	51×80	11	7.2	14
10	150000	51×100	13.2	7.0	12
10	180000	51×120	15.7	6.8	11
10	220000	51×120	16.8	6.5	10
10	270000	63.5×120	19.6	6.3	9.0
10	330000	63.5×120	20.5	6.0	8.5
10	390000	76.2×120	21.3	5.8	8.0
10	470000	76.2×120	22	5.5	7.5
10	560000	76.2×140	23.6	5.3	7.0
10	680000	89×140	26	5.0	6.5
10	680000	89×170	27.5	5.0	6.5
10	1000000	89×220	30	4.8	6.0
16	18000	35×50	4.2	24	44
16	22000	35×50	4.7	21	36
16	22000	35×60	4.9	21	36
16	27000	35×50	5.5	18	29
16	33000	35×65	5.7	16	24
16	33000	35×80	6.7	16	24
16	39000	35×65	6.8	14	20
16	47000	35×80	7.3	13	18
16	47000	35×100	8.8	13	18
16	56000	35×100	9	12	16
16	68000	35×100	9.2	12	15
16	68000	51×80	9.5	12	15
16	82000	51×80	10.7	10	14
16	100000	51×80	11	9.0	13
16	100000	51×100	12.5	9.0	13
16	120000	51×100	13.1	8.0	12
16	150000	51×120	15.5	7.0	11
16	180000	51×120	15.7	6.0	10
16	220000	63.5×120	18	5.5	9.5
16	270000	63.5×120	20	5.3	9.0
16	330000	76.2×120	21.3	5.0	8.8
16	390000	76.2×120	21.5	4.8	8.5
16	470000	76.2×140	24.2	4.5	8.3
16	470000	76.2×160	25.5	4.5	8.3
16	470000	89×140	26.5	4.5	8.3
16	560000	89×140	28.1	4.2	8.0
16	680000	89×140	28.5	4.0	7.8
16	1000000	89×220	35	3.8	7.5
25	10000	35×50	2.9	27	53
25	12000	35×50	3.7	23	44
25	15000	35×50	5.3	21	35
25	15000	35×55	5.5	21	35
25	18000	35×60	5.5	19	29
25	22000	35×60	6.5	14	24
25	22000	35×80	7.4	14	24
25	27000	35×80	8	12	20
25	33000	35×80	8.8	10	18
25	33000	35×100	9.7	10	18

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
25	39000	35×100	10	9.0	17
25	47000	35×105	11	8.0	15
25	47000	35×120	11.7	8.0	15
25	47000	51×80	12	8.0	17
25	56000	51×80	12.5	7.0	14
25	68000	51×80	13	6.0	13
25	68000	51×100	14.3	6.0	13
25	82000	51×100	14.6	5.5	12
25	100000	51×105	15	5.0	10
25	100000	51×120	16	5.0	10.0
25	100000	63.5×100	16.3	5.0	10.0
25	120000	63.5×100	17	4.7	9.0
25	150000	63.5×105	18	4.5	8.0
25	150000	63.5×120	19	4.5	8.0
25	180000	63.5×120	19.5	4.3	7.0
25	220000	76.2×105	20	4.0	6.0
25	220000	76.2×115	20.8	4.0	6.0
25	220000	76.2×120	21.2	4.0	6.0
25	270000	76.2×120	21.7	3.7	5.0
25	330000	76.2×145	24	3.7	4.5
25	330000	76.2×160	25	3.7	4.5
25	330000	89×130	25	3.7	4.5
25	330000	89×140	26	3.7	4.5
25	390000	89×140	26.5	3.5	4.4
25	470000	89×170	28	3.3	4.3
25	680000	89×220	31	3.0	4.2
35	6800	35×50	2.6	30.0	59
35	8200	35×50	3.3	25.0	49
35	10000	35×50	3.6	20.0	40
35	10000	35×60	3.8	20.0	40
35	12000	35×60	4.8	19.0	33
35	15000	35×60	5.6	17.0	27
35	15000	35×80	6	17.0	27
35	18000	35×80	6.3	15.0	22
35	22000	35×80	7.6	13.0	18
35	22000	35×100	7.9	13.0	18
35	27000	35×100	8.2	11.0	15
35	33000	35×120	10.2	9.0	13
35	33000	51×80	10.7	9.0	13
35	39000	51×80	11	7.0	12
35	47000	51×100	12.5	5.0	11
35	56000	51×100	13	4.8	10.5
35	68000	51×120	14.5	4.5	10.0
35	82000	63.5×100	14.8	4.3	9.3
35	100000	63.5×120	17.6	4.1	9.0
35	120000	63.5×120	18	4.0	8.5
35	150000	76.2×120	20	3.6	8.0
35	180000	76.2×120	20.5	3.5	7.5
35	220000	76.2×140	23.4	3.3	7.0
35	220000	76.2×160	25	3.3	7.0
35	220000	89×130	24.5	3.3	7.0
35	220000	89×140	25	3.3	7.0
35	270000	89×140	25.5	3.2	6.5
35	330000	89×160	30	3.1	6.3
35	330000	89×170	31	3.1	6.3
35	470000	89×220	34	3.0	6.0
40	10000	35×55	5.3	17.0	38
40	15000	35×80	7.4	12.0	23
40	22000	35×105	9.5	8.5	17
40	33000	51×80	11	6.0	12

CapXon

RK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
40	47000	51×105	14	5.0	10.0
40	68000	51×105	15	4.5	9.0
40	100000	63.5×105	18	4.1	8.2
40	150000	76.2×105	20	3.6	7.2
40	220000	76.2×143	24	3.3	5.0
50	3300	35×50	2.2	47	100
50	3900	35×50	2.8		85
50	4700	35×50	3.3	35	71
50	5600	35×50	3.5	29	59
50	6800	35×50	3.7	25	49
50	6800	35×80	4.5	25	49
50	8200	35×60	4.5	23	40
50	10000	35×60	5.5	18	33
50	10000	35×80	5.8	18	33
50	12000	35×80	6	15	28
50	15000	35×80	7.6	13	22
50	18000	35×100	8	11	18
50	22000	35×120	9.8	9.0	15
50	22000	51×80	10	9.0	18
50	27000	51×80	10.2	8.0	15
50	33000	51×100	11.2	7.0	13
50	33000	51×115	11.5	7.0	13
50	33000	51×120	12	7.0	13
50	39000	51×120	13.2	6.5	12
50	47000	51×120	14.5	6.0	11
50	47000	63.5×100	14.5	6.0	11
50	56000	63.5×100	14.6	5.8	9.0
50	68000	63.5×115	16	5.5	8.0
50	68000	63.5×120	16.6	5.5	8.0
50	82000	76.2×120	18.9	5.3	7.0
50	100000	76.2×120	19.5	5.0	7.0
50	120000	76.2×120	20	4.8	6.8
50	150000	89×130	22.5	4.5	6.5
50	150000	89×140	23.9	4.5	6.5
50	180000	89×140	24.2	4.3	6.3
50	180000	89×155	25	4.3	6.3
50	220000	89×170	26.5	4.0	6.0
50	330000	89×220	32	3.8	5.5
63	2200	35×50	2.1	65	120
63	2700	35×50	2.3	46	98
63	3300	35×50	2.5	42	80
63	3900	35×50	2.8	37	68
63	4700	35×50	3.5	30	56
63	4700	35×55	4.4	30	56
63	5600	35×60	4.7	26	47
63	6800	35×60	5.3	22	39
63	6800	35×80	6	22	39
63	8200	35×80	6.2	18	32
63	10000	35×80	7.2	14	27
63	10000	35×100	7.8	14	27
63	10000	35×105	8.1	14	27
63	12000	35×100	8.3	12	22
63	15000	35×120	8.8	9.5	19
63	15000	51×80	9.5	9.5	19
63	18000	51×80	10	9.0	17
63	22000	51×100	11	7.0	14
63	22000	51×105	12	7.0	14
63	27000	51×120	12.5	6.3	12
63	33000	51×120	14	5.5	11
63	33000	63.5×100	14.5	5.5	11

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
63	33000	63.5×105	15	5.5	11
63	39000	63.5×100	15	5.3	11
63	47000	63.5×105	17	4.8	10
63	56000	63.5×120	18	4.5	9.0
63	68000	63.5×140	19.5	4.3	8.0
63	68000	76.2×105	19	4.3	8.0
63	68000	76.2×120	20	4.3	8.0
63	82000	76.2×140	21	4.1	7.5
63	100000	76.2×140	22.5	4.0	7.0
63	100000	76.2×145	23	4.0	7.0
63	100000	89×130	24	4.0	7.0
63	120000	89×140	25	3.8	6.5
63	150000	89×160	27	3.5	6.0
63	150000	89×170	28	3.5	6.0
63	220000	89×220	29.5	3.3	5.0
80	2200	35×50	2.4	63	120
80	2700	35×50	2.7	45	98
80	3300	35×50	3	40	80
80	3900	35×60	3.4	35	68
80	4700	35×60	4.6	28	56
80	5600	35×80	5	25	47
80	6800	35×80	5.5	21	39
80	8200	35×100	6.5	17	32
80	10000	35×120	8.5	13	27
80	12000	51×80	8.6	12	22
80	15000	51×100	10	9.0	18
80	18000	51×120	10.5	8.0	15
80	22000	51×100	13	7.0	12
80	22000	51×120	13.5	7.0	12
80	22000	63.5×100	13.7	7.0	15
80	27000	63.5×100	14	6.0	12
80	33000	51×140	14	5.5	11
80	33000	76.2×100	15	5.5	11
80	39000	76.2×100	15	5.3	10
80	47000	63.5×140	16.5	4.8	9.0
80	47000	76.2×120	16.5	4.8	8.5
80	56000	76.2×120	18.5	4.5	8.0
80	68000	76.2×140	22	4.3	7.0
80	82000	89×130	22.5	4.0	6.5
80	100000	89×160	24.8	3.8	6.3
80	100000	89×170	25	3.8	6.3
80	150000	89×220	27	3.5	6.0
100	1000	35×50	1.4	65.0	120
100	1500	35×50	2.2	52.0	104
100	1800	35×50	2.7	43.0	85
100	2200	35×50	3	35.0	70
100	2200	35×60	4.1	35.0	60
100	2700	35×60	4.7	29.0	55
100	3300	35×80	5.7	24.0	48
100	3900	35×80	6	21.0	42
100	4700	35×100	6.5	18.0	35
100	4700	35×105	6.7	18.0	35
100	4700	51×80	6.5	18.0	35
100	5600	35×100	6.8	15.0	30
100	6800	35×120	7	12.0	24
100	6800	51×80	8.7	12.0	24
100	6800	51×100	9.5	12.0	19
100	8200	51×80	10	9.0	32
100	10000	51×100	10.5	7	14
100	10000	51×105	11	7	14

CapXon

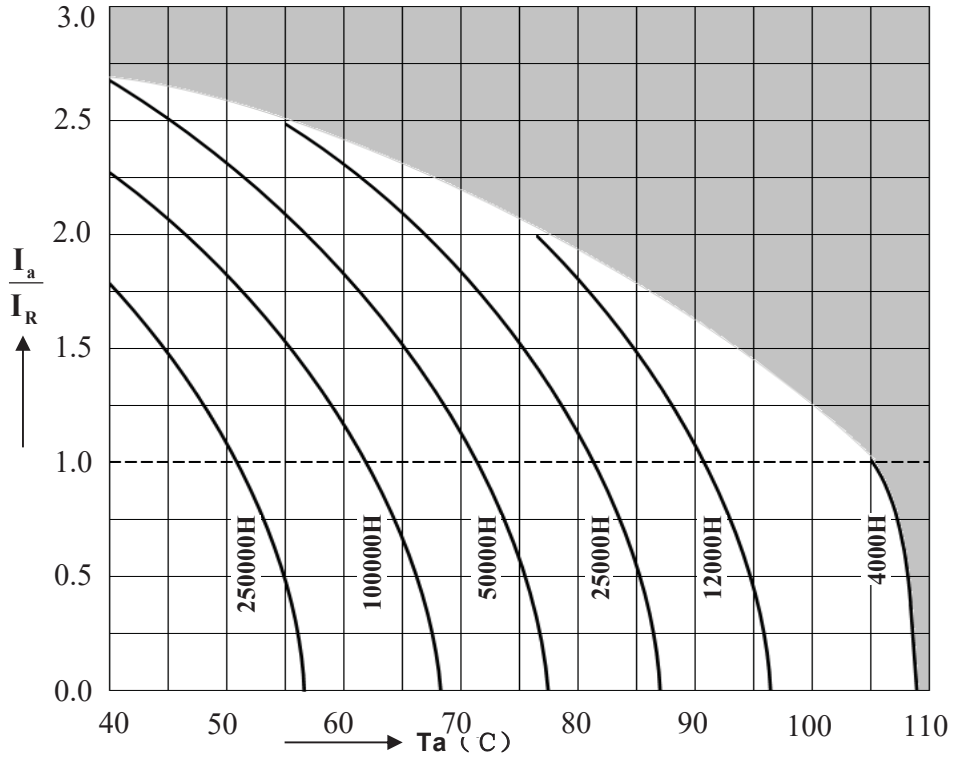
RK series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
100	10000	51×120	12.5	7	14
100	12000	51×120	13	6	12
100	15000	63.5×100	14.5	5	10
100	15000	63.5×105	15	5	10
100	15000	63.5×120	16	5	10
100	18000	63.5×100	16	4.8	9.5
100	22000	63.5×120	16.5	4.5	9.0
100	22000	76.2×100	16.5	4.5	9.0
100	22000	76.2×105	17	4.5	9.0
100	22000	76.2×120	18	4.5	9.0
100	27000	76.2×120	18.5	4.3	8.5
100	33000	76.2×120	16	4.0	8.0
100	33000	76.2×130	19.5	4.0	8.0
100	33000	76.2×140	20.5	4.0	8.0
100	33000	76.2×145	21	4.0	8.0
100	39000	76.2×140	21	3.8	7.8
100	47000	76.2×160	23	3.5	7.5
100	47000	89×130	22	3.5	7.5
100	47000	89×140	23.5	3.5	7.5
100	56000	89×140	24	3.3	7.3
100	68000	89×160	25.5	3.2	7.0
100	68000	89×170	26	3.2	7.0
100	100000	89×220	28	3.0	6.5
100	100000	89×230	30	3.0	6.5

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RL series

RL Series 105℃

Features

Long load life

Applications

- Frequency converters
- Professional power supplies
- Uninterruptible power supplies

Features

- Outstanding reliability
- Wide temperature range
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

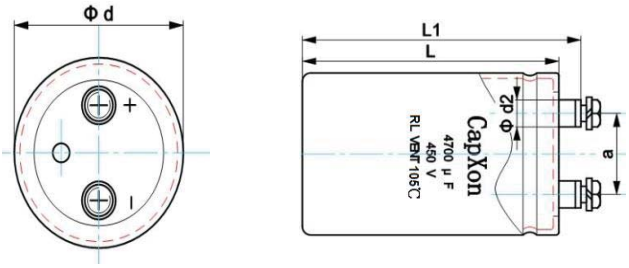
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160Vdc~450Vdc) -25 to +105℃(500Vdc)
Rated voltage V_R	160 to 500 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	220 to 22000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) | 160~450 | 500~550 D.F. (%)max. | 15 | 20
Self-inductance ESL	d = 51 mm: approx. 17 nH d ⩾ 63.5 mm: approx. 20 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 15 nH
Useful life 105 °C; V_R,$I_{AC,R}$	>10000 h: Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R	2000 h: Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) | 160~450 | ⩾500 $Z_{-25℃}$ / $Z_{20℃}$ | 4 | 4 $Z_{-40℃}$ / $Z_{20℃}$ | 10 | -
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	680	35×50	1.6	150	290
160	820	35×80	2.2	120	240
160	1000	35×80	2.5	100	200
160	1200	35×80	2.7	87	170
160	1500	35×80	2.9	67	130
160	1800	35×100	3.6	56	110
160	2200	35×120	4.2	46	90
160	2700	35×120	4.6	38	74
160	3300	51×100	5.8	31	60
160	3900	51×120	6.8	26	51
160	4700	51×120	7.5	22	42
160	5600	51×120	8.3	18	36
160	6800	63.5×120	10.2	15	29
160	8200	76.2×100	11.5	12	24
160	10000	76.2×120	13	10	20
160	12000	76.2×140	14.5	9	17
160	15000	89×140	17.3	7	13
200	470	35×50	1.3	220	420
200	560	35×80	1.7	180	360
200	680	35×80	1.9	150	290
200	820	35×80	2.1	120	240
200	1000	35×100	2.6	100	200
200	1200	35×120	3.1	87	170
200	1500	35×120	3.5	67	130
200	1800	51×80	3.8	56	110
200	2200	51×100	4.7	46	90
200	2700	51×120	5.7	38	74
200	3300	51×120	6.2	31	60
200	3900	63.5×100	7.1	26	51
200	4700	63.5×120	8.3	22	42
200	5600	76.2×100	9.4	18	36
200	6800	76.2×120	11	15	29
200	8200	76.2×140	13	12	24
200	10000	89×140	15.8	10	20
250	330	35×50	1.1	310	600
250	390	35×80	1.5	260	510
250	470	35×80	1.6	220	420
250	560	35×80	1.8	180	360
250	680	35×100	2.1	150	290
250	820	35×100	2.3	120	240
250	1000	35×120	2.8	100	200
250	1200	51×80	3.2	87	170
250	1500	51×100	3.9	67	130
250	1800	51×120	4.6	56	110
250	2200	51×120	5.1	46	90
250	2700	63.5×100	6	38	74
250	3300	63.5×120	7	31	60
250	3900	76.2×100	7.9	26	51
250	4700	76.2×120	9.2	22	42
250	5600	76.2×140	10.7	18	36
250	6800	89×140	12.9	15	29
350	330	35×80	2.2	310	600
350	470	35×80	2.9	220	420
350	680	51×60	3.7	150	290
350	820	51×60	3.8	120	240
350	1000	51×75	6.4	100	200
350	1000	51×80	6.6	100	200
350	1200	51×75	6.6	87	170
350	1200	51×80	6.7	87	170
350	1500	51×80	8	67	130

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	1500	51×96	8.7	67	130
350	1800	51×96	8.8	56	110
350	1800	51×120	9.7	56	110
350	2200	51×98	10.1	46	90
350	2200	51×120	11	46	90
350	2700	51×98	10.5	38	74
350	2700	51×125	11.7	38	74
350	2700	63.5×85	11.9	38	74
350	2700	63.5×100	12.8	38	74
350	3300	51×118	11.5	31	60
350	3300	51×145	12.6	31	60
350	3300	63.5×100	13.8	31	60
350	3900	63.5×100	15.1	26	51
350	3900	63.5×130	16.9	26	51
350	3900	76.2×100	16.7	26	51
350	4700	63.5×115	17.9	22	42
350	4700	76.2×110	19.4	22	42
350	5600	63.5×135	20.5	18	36
350	5600	63.5×170	22.8	18	36
350	5600	76.2×125	22.2	18	36
350	5600	89×105	24.1	18	36
350	6800	63.5×189	26.4	15	29
350	6800	76.2×125	24.3	15	29
350	6800	76.2×150	26.3	15	29
350	6800	89×119	27.3	15	29
350	8200	63.5×244	32.5	12	24
350	8200	76.2×136	27.5	12	24
350	8200	76.2×170	30.4	12	24
350	8200	89×120	28.5	12	24
350	8200	89×150	31.4	12	24
350	10000	76.2×190	31.6	10	20
350	10000	76.2×220	33.8	10	20
350	10000	89×136	29.7	10	20
350	10000	89×170	32.7	10	20
350	12000	76.2×240	35.3	9	17
350	12000	89×136	29.8	9	17
350	12000	89×190	34.3	9	17
350	12000	100×190	36.8	9	17
350	15000	89×176	39	7	13
350	15000	89×220	43	7	13
350	15000	100×250	48.7	7	13
350	18000	89×186	40	6	11
350	18000	89×240	44.9	6	11
350	22000	89×230	45.2	5	9
350	22000	89×270	48.7	5	9
350	22000	100×250	50	5	9
400	220	35×80	1.7	460	900
400	330	35×80	2.4	310	600
400	470	35×100	3.2	220	420
400	680	51×60	3.8	150	290
400	680	51×80	4.3	150	290
400	1000	51×75	6.5	100	200
400	1000	51×80	6.7	100	200
400	1200	51×80	7	87	170
400	1200	51×96	7.7	87	170
400	1500	51×96	8.8	67	130
400	1500	51×115	9.5	67	130
400	1800	51×105	9.6	56	110
400	1800	51×140	10.8	56	110
400	1800	63.5×85	9.9	56	110

CapXon

RL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	2200	51×105	10.5	46	90
400	2200	51×125	11.3	46	90
400	2200	63.5×85	10.8	46	90
400	2200	63.5×100	11.6	46	90
400	2700	51×145	13.6	38	74
400	2700	63.5×90	12.4	38	74
400	2700	63.5×115	13.7	38	74
400	3300	63.5×95	14.5	31	60
400	3300	63.5×130	16.7	31	60
400	3300	76.2×75	14.7	31	60
400	3300	76.2×100	16.5	31	60
400	3900	63.5×100	15.8	26	51
400	3900	63.5×150	18.9	26	51
400	3900	76.2×85	15.3	26	51
400	3900	76.2×110	18.3	26	51
400	3900	76.2×130	19.7	26	51
400	4700	63.5×120	18.6	22	42
400	4700	63.5×170	21.7	22	42
400	4700	76.2×95	18.6	22	42
400	4700	76.2×130	21.2	22	42
400	5600	63.5×135	22.1	18	36
400	5600	63.5×190	25.8	18	36
400	5600	76.2×105	21.9	18	36
400	5600	76.2×150	25.6	18	36
400	5600	89×105	24.3	18	36
400	6800	63.5×250	31.2	15	29
400	6800	76.2×125	25.2	15	29
400	6800	76.2×170	28.9	15	29
400	6800	89×105	25.9	15	29
400	6800	89×125	27.9	15	29
400	6800	89×140	29.3	15	29
400	6800	89×150	31	15	29
400	6800	89×155	31.4	15	29
400	8200	76.2×170	30.6	12	24
400	8200	76.2×210	33.7	12	24
400	8200	89×115	28.2	12	24
400	8200	89×125	29.2	12	24
400	8200	89×160	32.5	12	24
400	8200	89×170	33.4	12	24
400	10000	76.2×220	36.4	10	20
400	10000	89×135	31.9	10	20
400	10000	89×190	37.1	10	20
400	10000	100×190	39.6	10	20
400	12000	89×165	36.8	9	17
400	12000	89×190	39.1	9	17
400	12000	89×220	41.8	9	17
400	12000	100×220	44.6	9	17
400	15000	89×195	39.6	7	13
400	15000	89×240	43.5	7	13
400	15000	100×220	44.6	7	13
400	18000	89×235	44	6	11
400	18000	89×270	46.9	6	11
450	220	35×80	1.9	460	900
450	330	35×100	2.5	310	600
450	470	51×60	3	220	420
450	560	51×60	3.3	180	360
450	680	51×85	4.5	150	290
450	1000	51×85	6.9	100	200
450	1000	51×105	7.6	100	200
450	1200	51×85	7.4	87	170

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	1200	51×115	8.5	87	170
450	1500	51×100	9.1	67	130
450	1500	51×115	9.6	67	130
450	1800	51×100	9.5	56	110
450	1800	63.5×85	10	56	110
450	2200	51×120	11.5	46	90
450	2200	63.5×100	12	46	90
450	2700	51×143	13.8	38	74
450	2700	63.5×100	13.2	38	74
450	2700	63.5×130	14.8	38	74
450	2700	76.2×85	13.7	38	74
450	2700	76.2×115	15.6	38	74
450	3300	63.5×115	14.7	31	60
450	3300	63.5×150	16.6	31	60
450	3300	76.2×95	16.2	31	60
450	3300	76.2×130	18.5	31	60
450	3900	63.5×135	18	26	51
450	3900	63.5×170	20	26	51
450	3900	76.2×105	17.9	26	51
450	3900	76.2×130	19.8	26	51
450	3900	89×105	19.6	26	51
450	4700	63.5×165	21.6	22	42
450	4700	76.2×115	20.4	22	42
450	4700	76.2×130	21.5	22	42
450	4700	76.2×150	22.9	22	42
450	4700	89×105	21.5	22	42
450	5600	63.5×244	29.4	18	36
450	5600	76.2×135	22.5	18	36
450	5600	76.2×150	25.9	18	36
450	5600	76.2×190	28.8	18	36
450	5600	89×105	24.8	18	36
450	5600	89×125	26.1	18	36
450	5600	89×150	28.9	18	36
450	6800	76.2×170	29	15	29
450	6800	76.2×190	30.5	15	29
450	6800	76.2×220	32.6	15	29
450	6800	89×115	26.7	15	29
450	6800	89×125	27.7	15	29
450	6800	89×170	31.6	15	29
450	8200	76.2×195	33.6	12	24
450	8200	76.2×240	37	12	24
450	8200	89×145	32.1	12	24
450	8200	89×190	36.2	12	24
450	10000	89×165	34.9	10	20
450	10000	89×190	37.2	10	20
450	10000	89×220	39.7	10	20
450	10000	100×220	42.3	10	20
450	12000	89×195	39.4	9	17
450	12000	89×230	42.5	9	17
450	12000	100×250	47	9	17
450	15000	89×235	44.4	7	13
450	15000	89×250	45.7	7	13
500	680	51×75	4.1	200	390
500	1000	51×90	5.1	140	270
500	1200	51×115	5.9	110	220
500	1200	63.5×80	5.7	110	220
500	1500	51×135	7.1	92	180
500	1500	63.5×90	6.7	92	180
500	1800	63.5×100	7.8	77	150
500	1800	76.2×70	7.5	77	150

CapXon

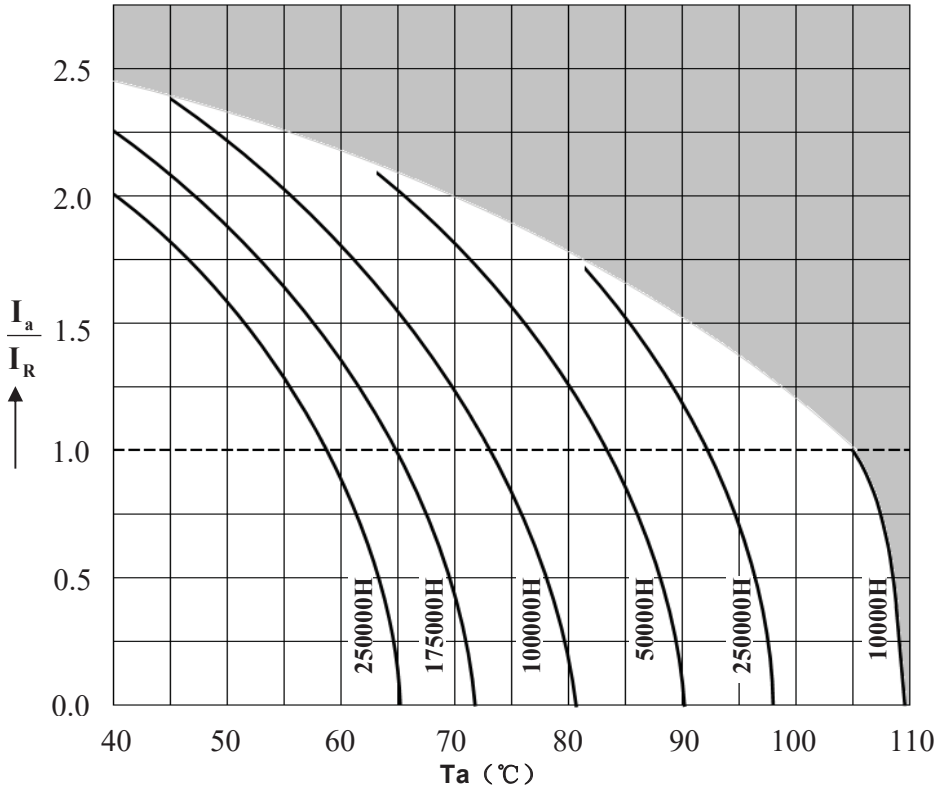
RL series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
500	2200	63.5×120	8.6	62	120
500	2200	76.2×95	8.6	62	120
500	2700	63.5×135	9.8	50	98
500	2700	76.2×105	9.7	50	98
500	3300	63.5×165	11	41	80
500	3300	76.2×130	11	41	80
500	3900	76.2×145	13.1	35	68
500	3900	89×105	12.5	35	68
500	4700	76.2×165	14.5	29	56
500	4700	89×125	14	29	56
500	5600	89×145	15.9	24	47
500	6800	89×165	18.6	20	39
500	8200	89×205	20.3	17	32

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RM series

RM Series 105℃

Features

Long useful life

Applications

- Frequency converters
- Professional power supplies
- Hybrid electric vehicles(HEV)
- Traction

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Features

- High reliability
- long useful life
- Extremely high ripple current capability
- Wide temperature range
- All-welded construction ensures reliable electrical contact
- low-inductance design
- Self-extinguishing electrolyte
- RoHS-compatible

Specifications

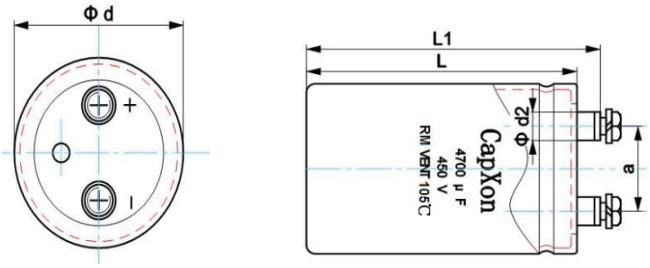
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160Vdc~450Vdc) -25 to +105℃(500Vdc)
Rated voltage V_R	160 to 500 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	180 to 68000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) | 160~450 | 500~550 D.F. (%)max. | 15 | 20
Self-inductance ESL	d = 51 mm: approx. 16 nH d ⩾ 63.5 mm: approx. 18 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 14 nH
Useful life 105 °C; V_R,$I_{AC,R}$ >6000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R 2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) | 160~450 | ⩾500 $Z_{-25℃}$ / $Z_{20℃}$ | 4 | 4 $Z_{-40℃}$ / $Z_{20℃}$ | 10 | -
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RM series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	470	35×50	1.1	230	420
160	560	35×50	1.3	200	360
160	680	35×50	1.4	160	290
160	820	35×50	1.5	130	240
160	1000	35×50	1.6	110	200
160	1200	35×60	2	94	170
160	1500	35×60	2.2	72	130
160	1800	35×80	2.6	61	110
160	2200	35×80	2.9	50	90
160	2700	35×100	3.4	41	74
160	3300	51×75	3.9	33	60
160	3900	51×75	4	28	51
160	4700	51×96	4.7	24	42
160	5600	51×96	5.2	20	36
160	6800	51×120	6.2	16	29
160	6800	63.5×96	6.2	16	29
160	8200	63.5×96	7.1	13	24
160	10000	63.5×120	8.5	11	20
160	10000	76.2×96	8.5	11	20
160	12000	76.2×100	9.5	9.2	17
160	15000	76.2×120	11.5	7.4	13
160	18000	76.2×140	13.5	6.1	11
160	22000	76.2×140	14	5.0	9.0
160	22000	89×130	14.8	5.0	9.0
160	27000	89×140	16.1	4.1	7.5
160	33000	89×140	16.6	3.3	7.0
160	47000	89×220	17.5	3.0	6.5
160	68000	100×250	19.3	2	6.0
200	330	35×50	1	330	600
200	390	35×50	1.1	280	510
200	470	35×50	1.2	230	420
200	560	35×50	1.4	200	360
200	680	35×50	1.5	160	290
200	820	35×50	1.6	130	240
200	1000	35×60	1.8	110	200
200	1200	35×60	2.1	94	170
200	1500	35×80	2.3	72	130
200	1800	35×80	2.7	61	110
200	2200	35×100	3.1	50	90
200	2200	51×75	3.2	50	90
200	2700	35×120	3.7	41	74
200	2700	51×96	3.7	41	74
200	3300	51×80	4.2	33	60
200	3900	51×100	5	28	51
200	4700	51×140	5.8	24	42
200	4700	63.5×96	5.4	24	42
200	5600	63.5×96	5.9	20	36
200	6800	63.5×115	7	16	29
200	8200	63.5×120	7.7	13	24
200	10000	76.2×115	9.7	11	20
200	12000	76.2×120	10.3	9	17
200	15000	76.2×140	11.6	7	13
200	15000	89×130	12.3	7	13
200	18000	89×140	13.6	6	11
200	22000	76.2×160	14	5.0	9
200	22000	89×140	15.2	5.0	9
200	33000	89×220	16.6	3.5	6
200	47000	89×250	19.9	3.0	5
250	270	35×50	0.9	410	740
250	330	35×50	1.1	330	600
250	390	35×50	1.2	280	510
250	470	35×50	1.3	230	420
250	560	35×50	1.5	200	360
250	680	35×60	1.6	160	290
250	820	35×80	1.7	130	240
250	1000	35×80	1.9	110	200
250	1200	35×80	2.2	94	170
250	1500	35×100	2.4	72	130
250	1500	51×75	2.5	72	130
250	1800	35×120	2.8	61	110
250	1800	51×75	2.8	61	110
250	2200	51×96	3.3	50	90
250	2700	51×100	3.8	41	74
250	3300	51×120	4.3	33	60
250	3300	63.5×96	4.3	33	60
250	3900	51×120	5.1	28	51
250	3900	63.5×96	4.7	28	51
250	4700	63.5×115	5.8	24	42
250	5600	63.5×120	6.4	20	36
250	6800	76.2×115	7.8	16	29
250	8200	76.2×120	8.5	13	24
250	10000	76.2×140	10.1	11	20
250	10000	89×140	10.3	11	20
250	12000	89×140	12	9	17
250	15000	89×157	12.6	7	13
250	22000	89×220	15.5	5.0	9
250	33000	100×250	17.1	3.3	6
315	180	35×50	0.8	620	1110
315	220	35×50	1	500	900
315	270	35×50	1.1	410	740
315	330	35×50	1.2	330	600
315	390	35×50	1.3	280	510
315	470	35×60	1.5	230	420
315	560	35×55	2.5	200	360
315	680	35×65	3	160	290
315	820	35×75	3.4	130	240
315	1000	35×80	3.9	110	200
315	1200	35×100	4.6	94	170
315	1500	51×70	5.5	72	130
315	1800	51×75	6.1	61	110
315	2200	51×90	7.3	50	90
315	2700	51×100	8.5	41	74
315	3300	63.5×85	10	33	60
315	3900	63.5×96	11.4	28	51
315	4700	76.2×85	13.2	24	42
315	5600	76.2×96	15.1	20	36
315	6800	76.2×110	17.7	16	29
315	8200	89×100	17.8	13	24
315	10000	89×115	20.2	11	20
350	180	35×50	0.9	620	1110
350	220	35×50	1.1	500	900
350	270	35×50	1.2	410	740
350	330	35×50	1.3	330	600
350	390	35×60	1.4	280	510
350	470	35×55	2.3	230	420
350	560	35×60	2.6	200	360
350	680	35×70	3.1	160	290
350	820	35×80	3.5	130	240
350	1000	35×90	4.1	110	200
350	1000	51×75	4.3	110	200

CapXon

RM series

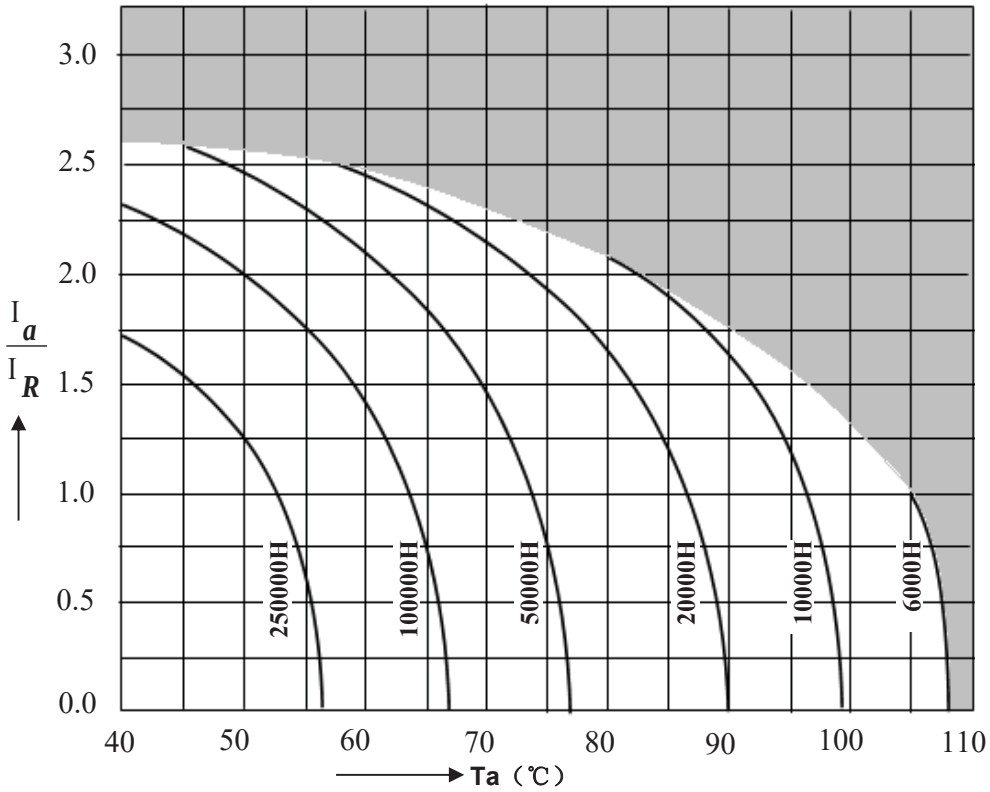
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	1200	51×65	4.7	94	170
350	1500	51×75	5.6	72	130
350	1800	51×85	6.5	61	110
350	2200	51×100	7.7	50	90
350	2700	51×105	8.7	41	74
350	2700	63.5×80	8.8	41	74
350	3300	51×130	10.1	33	60
350	3300	63.5×96	10.1	33	60
350	3900	63.5×105	11.2	28	51
350	3900	76.2×80	11.8	28	51
350	4700	63.5×130	12.7	24	42
350	4700	76.2×96	13.3	24	42
350	5600	63.5×130	14.2	20	36
350	5600	76.2×105	15.7	20	36
350	6800	76.2×125	18.7	16	29
350	6800	89×120	18.8	16	29
350	8200	76.2×143	19	13	24
350	8200	89×115	18.9	13	24
350	10000	76.2×160	19.5	11	20
350	10000	89×140	21	11	20
350	12000	76.2×190	24.8	9	17
350	12000	89×145	25.7	9	17
350	15000	76.2×220	29.1	7	13
350	15000	89×170	29.6	7	13
350	18000	89×200	33.2	6	11
400	180	35×50	1	620	1110
400	220	35×50	1.2	500	900
400	270	35×50	1.3	410	740
400	330	35×60	1.5	330	600
400	390	35×55	2.1	280	510
400	470	35×60	2.4	230	420
400	560	35×70	2.8	200	360
400	680	51×80	3.7	160	290
400	820	35×90	3.7	130	240
400	1000	51×65	4.4	110	200
400	1200	51×75	5	94	170
400	1500	51×80	5.8	72	130
400	1800	51×96	7	61	110
400	2200	51×115	8.1	50	90
400	2200	63.5×85	8.2	50	90
400	2700	51×130	9.4	41	74
400	2700	63.5×96	9.3	41	74
400	3300	63.5×105	10.8	33	60
400	3300	76.2×105	11.3	33	60
400	3900	63.5×118	11.8	28	51
400	3900	76.2×105	12.3	28	51
400	4700	63.5×143	13.5	24	42
400	4700	76.2×105	14.4	24	42
400	4700	89×97	14.9	24	42
400	5600	63.5×195	17.2	20	36
400	5600	76.2×130	15.8	20	36
400	5600	89×96	15.3	20	36
400	6800	76.2×143	19	16	29
400	6800	89×115	18.9	16	29
400	8200	76.2×170	20.6	13	24
400	8200	89×130	19.3	13	24
400	10000	76.2×190	21.8	11	20
400	10000	89×160	22	11	20
400	12000	76.2×220	27	9	17
400	12000	89×180	26	9	17

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
400	15000	89×200	29.7	7	13
450	220	35×50	1.2	500	900
450	330	35×55	1.9	330	600
450	390	35×65	2.3	280	510
450	470	35×75	2.6	230	420
450	560	35×80	2.9	200	360
450	680	35×100	3.6	160	290
450	680	51×80	3.8	160	290
450	820	35×110	4.2	130	240
450	1000	51×80	4.7	110	200
450	1200	51×90	5.4	94	170
450	1500	51×90	5.85	72	130
450	1500	51×105	6.8	72	130
450	1500	63.5×80	7	72	130
450	1800	51×130	7.8	61	110
450	1800	63.5×96	7.8	61	110
450	2200	63.5×96	8.6	50	90
450	2700	63.5×118	10.2	41	74
450	2700	76.2×96	10.7	41	74
450	3300	63.5×145	11.5	33	60
450	3300	76.2×120	11	33	60
450	3300	89×97	13.1	33	60
450	3900	76.2×130	13.4	28	51
450	3900	89×120	14.9	28	51
450	4700	76.2×120	14.5	24	42
450	4700	89×120	16.7	24	42
450	5600	76.2×160	15.9	20	36
450	5600	89×120	15.4	20	36
450	6800	76.2×160	19.1	16	29
450	6800	89×140	19.2	16	29
450	8200	76.2×220	23.1	13	24
450	8200	89×170	23.7	13	24
450	10000	89×200	24	11	20
500	330	51×80	2.8	440	800
500	470	51×60	2.7	310	560
500	680	51×80	4.1	220	390
500	820	51×85	4.3	180	320
500	1000	51×105	4.8	150	270
500	1200	51×120	6	120	220
500	1200	63.5×85	5.8	120	220
500	1500	51×130	7	100	180
500	1500	63.5×96	7.1	100	180
500	1800	63.5×105	7.9	83	150
500	2200	63.5×130	9.4	67	120
500	2200	76.2×96	9.5	67	120
500	2700	63.5×145	10.3	55	98
500	2700	76.2×105	10.8	55	98
500	2700	89×97	11.6	55	98
500	3300	63.5×170	13	45	80
500	3300	76.2×130	12.2	45	80
500	3300	89×120	13.4	45	80
500	3900	76.2×145	13.5	38	68
500	3900	89×120	15	38	68
500	4700	76.2×170	16	31	56
500	4700	89×145	16.8	31	56
500	5600	76.2×220	18.1	26	47
500	5600	89×150	17.9	26	47
500	6800	89×170	20.8	22	39
500	8200	89×220	25.6	18	32
500	10000	89×250	30	15	27

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RH Series 105℃

Features

Standard capacitors

Applications

- Frequency converters
- Professional power supplies
- Traction

Features

- Outstanding reliability
- Wide temperature range
- Extra long useful life
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

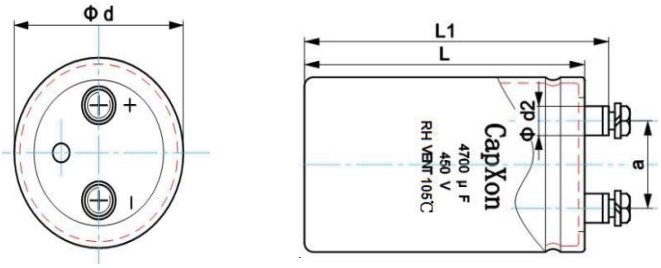
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160Vdc~450Vdc)
Rated voltage V_R	160 to 450 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	220 to 47000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) | 160~450 | 500~550 D.F. (%)max. | 15 | 20
Self-inductance ESL	d = 51 mm: approx. 17 nH d ⩾ 63.5 mm: approx. 20 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 15 nH
Useful life 105 °C; V_R,$I_{AC,R}$	>8000 h: Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R	2000 h: Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) | 160~450 | ⩾500 $Z_{-25℃}$ / $Z_{20℃}$ | 4 | 4 $Z_{-40℃}$ / $Z_{20℃}$ | 10 15 10 | -
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	d±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
35	⩽70mm >70mm	120 60
42	⩽70mm >70mm	120 60
51	⩽70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RH series

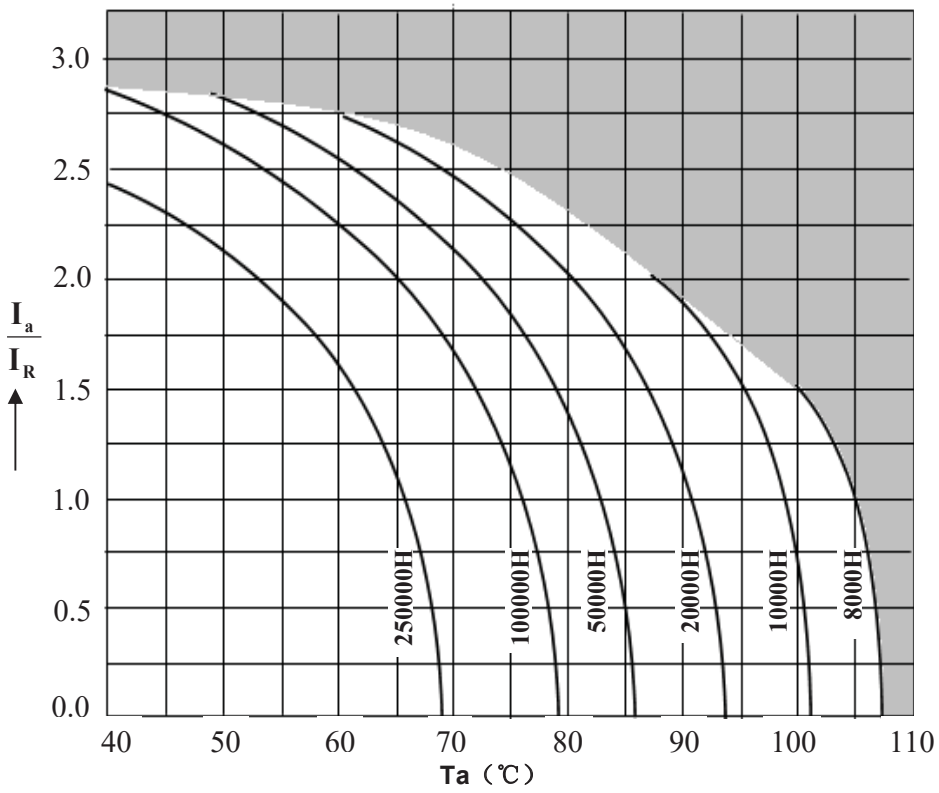
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	1000	35×60	1.9	110	200
160	1500	35×80	2.5	68	130
160	2200	35×100	3.3	48	90
160	3300	35×120	4.5	32	60
160	3300	51×80	4.5	32	60
160	4700	51×100	5.5	22	42
160	6800	51×140	7.8	15	29
160	6800	63.5×100	7.5	15	29
160	10000	63.5×120	8.8	10	20
160	15000	76.2×120	10.8	7	13
160	22000	76.2×140	13.8	5	9
160	22000	89×130	14.5	5	9
160	33000	89×140	15.5	3	6
160	47000	89×220	19.2	3	5
200	680	35×50	1.4	150	290
200	1000	35×60	2	110	200
200	1500	35×80	2.5	68	130
200	2200	35×120	3.6	48	90
200	2200	51×80	3.6	48	90
200	3300	51×80	4.6	32	60
200	3300	51×100	4.8	32	60
200	4700	51×140	6.4	22	42
200	4700	63.5×100	6.2	22	42
200	6800	63.5×120	7.7	15	29
200	10000	76.2×120	10	10	20
200	15000	76.2×140	11.5	7	13
200	15000	76.2×160	12.2	7	13
200	22000	76.2×160	15.5	5	9
200	22000	89×140	16.5	5	9
250	470	35×60	1.2	220	420
250	680	35×80	1.7	150	290
250	1000	35×100	2.5	110	200
250	1500	51×80	2.9	68	130
250	2200	51×100	4	48	90
250	3300	51×140	5.3	32	60
250	3300	63.5×100	5	32	60
250	4700	63.5×120	6.6	22	42
250	6800	76.2×120	8.3	15	29
250	10000	76.2×160	11	10	20
250	10000	89×140	11.5	10	20
250	15000	89×170	14.5	7	13
250	22000	89×220	17	5	9
350	330	35×60	1.6	320	600
350	470	35×80	2.3	220	420
350	680	35×100	3.3	150	290
350	1000	35×120	4.4	110	200
350	1000	51×80	4.6	110	200
350	1500	51×80	5.7	68	130
350	1500	51×100	6.8	68	130
350	2200	51×105	7.7	48	90
350	2200	51×120	8.3	48	90
350	2200	51×140	8.8	48	90
350	2700	63.5×80	8.7	39	74
350	3300	63.5×100	10	32	60
350	3300	63.5×120	10.8	32	60
350	3900	63.5×120	11.5	27	51
350	4700	63.5×145	12.6	22	42
350	4700	76.2×105	12.6	22	42
350	4700	76.2×120	13	22	42
350	5600	76.2×130	14.8	19	36

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
350	6800	76.2×140	16.5	15	29
350	8200	76.2×160	20	13	24
350	8200	89×145	21.5	13	24
350	10000	76.2×160	21.5	10	20
350	10000	76.2×190	23	10	20
350	10000	89×140	23	10	20
350	12000	76.2×220	27.5	9	17
350	12000	89×170	28.5	9	17
350	15000	89×190	30	7	13
350	18000	89×220	34	6	11
400	220	35×50	1.4	470	900
400	330	35×60	1.7	320	600
400	470	35×80	3.3	220	420
400	680	35×120	3.9	150	290
400	680	51×80	4.1	150	290
400	1000	51×80	4.7	110	200
400	1500	51×105	6.4	68	130
400	1500	51×120	7	68	130
400	2200	51×130	9.1	48	90
400	2200	63.5×100	8.3	48	90
400	2700	63.5×100	10	39	74
400	3300	63.5×130	11.5	32	60
400	3300	76.2×105	11.7	32	60
400	3300	76.2×120	12.2	32	60
400	3900	76.2×120	13	27	51
400	4700	76.2×120	14.5	22	42
400	4700	76.2×130	15	22	42
400	5600	76.2×145	17	19	36
400	6800	76.2×160	19.3	15	29
400	6800	89×145	20	15	29
400	8200	89×160	22	13	24
400	10000	89×160	24	10	20
400	12000	89×180	28	9	17
400	15000	89×200	31	7	13
450	220	35×50	1.4	470	900
450	330	35×60	1.7	320	600
450	470	35×80	3.5	220	420
450	680	35×120	4.2	150	290
450	680	51×80	5.5	150	290
450	1000	51×80	5.8	110	200
450	1000	51×105	6.5	110	200
450	1500	51×120	7.1	68	130
450	2200	63.5×100	8.4	48	90
450	2200	63.5×120	9.2	48	90
450	2700	63.5×130	11.3	39	74
450	3300	63.5×145	13.2	32	60
450	3300	76.2×120	12.7	32	60
450	3900	76.2×145	15	27	51
450	4700	76.2×120	15	22	42
450	4700	76.2×160	17	22	42
450	5600	76.2×130	16	19	36
450	5600	76.2×160	17.8	19	36
450	5600	89×145	20	19	36
450	6800	76.2×160	20	15	29
450	6800	76.2×220	22	15	29
450	6800	89×170	23	15	29
450	8200	89×180	24	13	24
450	10000	89×200	27	10	20
450	12000	89×236	29	9	17

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RQ series

RQ Series 105℃

Features

Long useful life

Applications

- Frequency converters
- Professional power supplies
- Hybrid electric vehicles(HEV)
- Traction

Features

- Long useful life
- High reliability
- Extremely high ripple current capability
- Wide temperature range
- All-welded construction ensures reliable electrical contact
- Low-inductance design
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

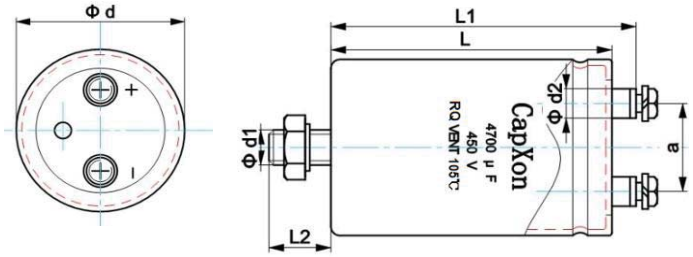
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160Vdc~450Vdc)
Rated voltage V_R	160 to 450 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	2200 to 47000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) 160~450 D.F. (%)max. 15
Self-inductance ESL	d = 51 mm: approx. 16 nH d ⩾ 63.5 mm: approx. 18 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 14 nH
Useful life 105 °C; V_R,$I_{AC,R}$ — >6000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R — 2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) 160~450 ⩾500 $Z_{-25℃}$ / $Z_{20℃}$ 4 4 $Z_{-40℃}$ / $Z_{20℃}$ 10 -
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Threaded stud mounting



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve						
	d±2	L±3	L_1±3	L_2+/-1	d_1	$d_2$max.	a±0.5
M5	63.5	80~140	86.5~146.5	16	M12	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	16	M12	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	16	M12	17.5	31.8
M6	100	100~240	110~250	16	M12	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RQ series

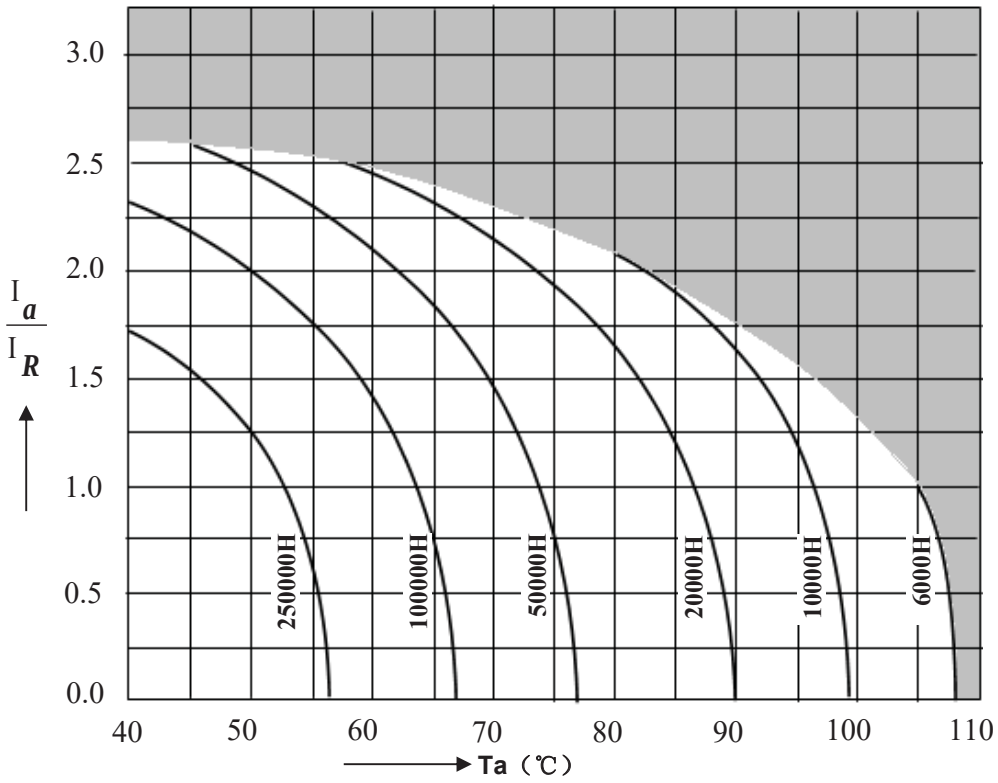
Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	6800	63.5×100	11	16	29
160	10000	63.5×120	12.5	11	20
160	15000	76.2×120	15.5	7	13
160	22000	76.2×140	20	5	9
160	22000	89×130	21	5	9
160	33000	89×140	22	3	6
160	47000	89×220	28	3	5
200	4700	63.5×100	8.8	24	42
200	6800	63.5×120	12	16	29
200	10000	76.2×120	13.5	11	20
200	15000	76.2×140	16	7	13
200	15000	76.2×160	17	7	13
200	22000	76.2×160	22	5	9
200	22000	89×140	24	5	9
250	3300	63.5×100	7.5	33	60
250	4700	63.5×120	9.5	24	42
250	6800	76.2×120	13	16	29
250	10000	76.2×160	15	11	20
250	10000	89×140	16	11	20
250	15000	89×170	20	7	13
250	22000	89×220	24.5	5	9
350	2700	63.5×80	16	41	74
350	3300	63.5×100	16.5	33	60
350	3300	63.5×120	17.5	33	60
350	3900	63.5×120	17.7	28	51
350	4700	63.5×145	18.6	24	42
350	4700	76.2×105	22.4	24	42
350	4700	76.2×120	23	24	42
350	5600	76.2×130	24	20	36
350	6800	76.2×140	26	16	29
350	8200	76.2×160	30	13	24
350	8200	89×145	34.5	13	24
350	10000	76.2×160	30.5	11	20
350	10000	76.2×190	33	11	20
350	10000	89×140	38.4	11	20
350	12000	76.2×220	35	9	17
350	12000	89×170	37	9	17
350	15000	89×190	38	7	13
350	18000	89×220	49	6	11
400	2200	63.5×100	13.5	50	90
400	2700	63.5×105	16.5	41	74
400	3300	63.5×130	17.5	33	60
400	3300	76.2×105	20.2	33	60
400	3300	76.2×120	21	33	60
400	3900	76.2×120	22.2	28	51
400	4700	76.2×120	23.5	24	42
400	4700	76.2×130	24.5	24	42
400	5600	76.2×145	27	20	36
400	6800	76.2×160	28.6	16	29
400	6800	89×145	33	16	29
400	8200	89×160	35	13	24
400	10000	89×160	39	11	20
400	12000	89×180	40	9	17
400	15000	89×200	42	7	13
450	2200	63.5×100	13	50	90
450	2200	63.5×120	14	50	90
450	2700	63.5×130	16	41	74
450	3300	63.5×145	18.5	33	60
450	3300	76.2×120	19	33	60
450	3900	76.2×145	22	28	51

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	4700	76.2×120	21	24	42
450	4700	76.2×160	23	24	42
450	5600	76.2×160	23.5	20	36
450	5600	89×145	30.5	20	36
450	6800	76.2×160	26.5	16	29
450	6800	76.2×220	30.5	16	29
450	6800	89×170	39	16	29
450	8200	89×180	42	13	24
450	10000	89×200	45	11	20

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RT series

RT Series 105℃

Features

Extremely Long useful life

Applications

- Frequency converters
- Professional power supplies
- Traction

Features

- Outstanding reliability
- Extra long useful life
- Wide temperature range
- Version with low-inductance design available
- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud

Specifications

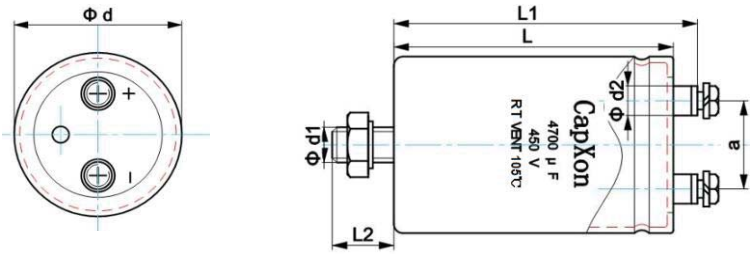
Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃(160Vdc~450Vdc)
Rated voltage V_R	160 to 450 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	2200 to 47000 µF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%) Working Voltage(VDC) | 160~450 D.F. (%)max. | 15
Self-inductance ESL	d = 51 mm: approx. 17 nH d ⩾ 63.5 mm: approx. 20 nH Capacitors with low-inductance design: d ⩾ 63.5 mm: approx. 15 nH
Useful life 105 °C; V_R, $I_{AC,R}$	>8000 h: Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 105 °C; V_R	2000 h: Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz V_R(V) | 160~450 | ⩾500 $Z_{-25℃}$ / $Z_{20℃}$ | 4 | 4 $Z_{-40℃}$ / $Z_{20℃}$ | 10 | -
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

Dimensional drawings

Threaded stud mounting



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve						
	d±2	L±3	L_1±3	L_2+/-1	d_1	$d_2$max.	a±0.5
M5	63.5	80~140	86.5~146.5	16	M12	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	16	M12	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	16	M12	17.5	31.8

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (pcs.)
63.5	all	24
76.2	all	15
89	all	12

Packing of screw

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

CapXon

RT series

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	6800	63.5×100	12	15	29
160	10000	63.5×120	13.8	10	20
160	15000	76.2×120	17	7	13
160	22000	76.2×140	22	5	9
160	22000	89×130	23	5	9
160	33000	89×140	24	3	6
160	47000	89×220	31	3	5
200	4700	63.5×100	9.7	22	42
200	6800	63.5×120	13.5	15	29
200	10000	76.2×120	15	10	20
200	15000	76.2×140	17.5	7	13
200	15000	76.2×160	18.5	7	13
200	22000	76.2×160	24	5	9
200	22000	89×140	26	5	9
250	3300	63.5×100	8.3	32	60
250	4700	63.5×120	10.5	22	42
250	6800	76.2×120	14.5	15	29
250	10000	76.2×160	16.5	10	20
250	10000	89×140	17.5	10	20
250	15000	89×170	22	7	13
250	22000	89×220	27	5	9
350	2700	63.5×80	17.5	39	74
350	3300	63.5×100	18	32	60
350	3300	63.5×120	19	32	60
350	3900	63.5×120	19.5	27	51
350	4700	63.5×145	20.5	22	42
350	4700	76.2×105	24.6	22	42
350	4700	76.2×120	25.5	22	42
350	5600	76.2×130	26.5	19	36
350	6800	76.2×140	28.5	15	29
350	8200	76.2×160	33	13	24
350	8200	89×145	39	13	24
350	10000	76.2×160	33.5	10	20
350	10000	76.2×190	36	10	20
350	10000	89×140	42	10	20
350	12000	76.2×220	38	9	17
350	12000	89×170	40	9	17
350	15000	89×190	42	7	13
350	18000	89×220	51	6	11
400	2200	63.5×100	14.8	48	90
400	2700	63.5×105	18.2	39	74
400	3300	63.5×130	19.3	32	60
400	3300	76.2×105	22	32	60
400	3300	76.2×120	23	32	60
400	3900	76.2×120	24	27	51
400	4700	76.2×120	25.8	22	42
400	4700	76.2×130	27	22	42
400	5600	76.2×145	30	19	36
400	6800	76.2×160	31.5	15	29
400	6800	89×145	36	15	29
400	8200	89×160	38.5	13	24
400	10000	89×160	43	10	20
400	12000	89×180	44	9	17
400	15000	89×200	46	7	13
450	2200	63.5×100	15	48	90
450	2200	63.5×120	16	48	90
450	2700	63.5×130	18.5	39	74
450	3300	63.5×145	21.5	32	60
450	3300	76.2×120	22	32	60
450	3900	76.2×145	25.5	27	51

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	4700	76.2×120	24.3	22	42
450	4700	76.2×160	26.5	22	42
450	5600	76.2×160	27.3	19	36
450	5600	89×145	35	19	36
450	6800	76.2×160	30.7	15	29
450	6800	76.2×220	35	15	29
450	6800	89×170	45	15	29
450	8200	89×180	48	13	24
450	10000	89×200	50	10	20

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions