

LT SERIES ▪ STANDARD, MULTI-PIN 85°C TYPE

KEY FEATURES

- ALUMINUM ELECTROLYTIC CAPACITOR ▪ Snap-In (Multi-Pin) type
- Useful life: 85°C ▪ 3 000 hours up to 5 000 hours
- Miniature dimensions
- High reliability
- Polarity-protected assembly

NOT FOR NEW DESIGNS

Recommendation LP series



SPECIFICATIONS

Items		Performance Characteristics										
Operating Temperature Range		-40 ~ +85°C					-25 ~ +85°C					
Rated Voltage Range	V _R	16 ~ 350V DC					385 ~ 500V DC					
Surge Voltage	V _S	(V _R ≤ 315V): V _S = 1.15·V _R					(V _R > 315V): V _S = 1.10·V _R					
Capacitance Range	C _R	390 ~ 82000µF					220 ~ 2700µF					
Cap. Tolerance	ΔC	±20% (120Hz ▪ 20°C)										
Leakage Current (20°C ▪ V _R applied)	I _{LEAK}	$\leq 3 \cdot \sqrt{C_R \cdot V_R}$ ▪ After 5 minutes [I _{LEAK} (µA) ; C _R (µF) ; V _R (V)]										
Dissipation Factor % (20°C ▪ 120Hz)	tanδ	µF / V DC	16	25	35	50	63	80	100	160 ~ 420	450 ~ 500	
		≤ 8200	35	30	25	20	20	15	15	15	20	
		10000 ~ 22000	40	35	30	30	25	20	-	-	-	
		≥ 27000	40	35	35	30	25	-	-	-	-	
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	16	25	35 ~ 100		160 ~ 250		315 ~ 350		400 ~ 500	
		Z-25°C/Z+20°C	5	4	4		4		8		8	
		Z-40°C/Z+20°C	15	15	12		8		12		-	
Lifetime Test			V _R ≤ 100V					V _R > 100V				
Useful Life 85°C (V _R & I _R applied)		Test	3 000 hours					5 000 hours				
		ΔC/C _R	≤ ±30% of initial measured value					≤ ±20% of initial measured value				
		tanδ	≤ 300% of initial specified value					≤ 200% of initial specified value				
		I _{Leak}	≤ the initial specified value					≤ the initial specified value				
		Deviation Rate @ Useful Life: 10 000 FIT = 1%/1000h with 60% confidence level ▪ parts show higher drift as test criteria										
Endurance 85°C (V _R & I _R applied)		Test	2 000 hours									
		ΔC/C _R	≤ ±20% of initial measured value					≤ ±15% of initial measured value				
		tanδ	≤ 200% of initial specified value					≤ 175% of initial specified value				
		I _{Leak}	≤ the initial specified value					≤ the initial specified value				
Shelf Life 85°C (V _R = 0)		Test	1 000 hours									
		ΔC/C _R	≤ ±20% of initial measured value					≤ ±15% of initial measured value				
		tanδ	≤ 200% of initial specified value					≤ 175% of initial specified value				
		I _{Leak}	≤ the initial specified value					≤ the initial specified value				
		Before measurement: Restore capacitor to 20°C, apply V _R for 30 min according JIS-C-5101-4										
Vibration Resistance Test		Max. 10g force, f _{RANGE} 10Hz ... 55Hz, amplitude 0.75mm; X/Y/Z-axis each 2h; capacitor rigidly clamped by body to surface ▪ IEC 60068-2-6										

STANDARD RATINGS
NOT FOR NEW DESIGNS

V_R (V)	C_R (μ F)	$\varnothing D$ (mm)	L (mm)	Typ. ESR +20°C • 120Hz (m Ω)	Max. ESR +20°C • 120Hz (m Ω)	I_R - Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
16	47000	35	30	9	11	5910	LT473M016P300A ☐☐
	56000	35	60	7	10	6510	LT563M016P600A ☐☐
	56000	40	50	7	10	6510	LT563M016Q500A ☐☐
	68000	35	80	6	8	7230	LT683M016P800A ☐☐
	68000	40	60	6	8	7230	LT683M016Q600A ☐☐
	82000	40	80	5	7	8190	LT823M016Q800A ☐☐
25	33000	35	50	11	14	5790	LT333M025P500A ☐☐
	39000	35	60	9	12	6270	LT393M025P600A ☐☐
	39000	40	50	9	12	6270	LT393M025Q500A ☐☐
	47000	35	80	8	10	7110	LT473M025P800A ☐☐
	47000	40	60	8	10	7110	LT473M025Q600A ☐☐
	56000	40	80	6	8	7430	LT563M025Q800A ☐☐
35	68000	40	80	5	7	8580	LT683M025Q800A ☐☐
	22000	35	50	14	18	5010	LT223M035P500A ☐☐
	27000	35	60	13	17	5850	LT273M035P600A ☐☐
	33000	35	80	11	14	6030	LT333M035P800A ☐☐
	33000	40	60	11	14	6410	LT333M035Q600A ☐☐
	39000	35	80	9	12	6940	LT393M035P800A ☐☐
50	39000	40	60	9	12	7030	LT393M035Q600A ☐☐
	47000	40	80	8	10	7550	LT473M035Q800A ☐☐
	15000	35	50	20	27	4560	LT153M050P500A ☐☐
	18000	35	60	17	22	5100	LT183M050P600A ☐☐
	18000	40	50	17	22	5100	LT183M050Q500A ☐☐
	22000	35	80	14	18	5770	LT223M050P800A ☐☐
63	22000	40	60	14	18	5770	LT223M050Q600A ☐☐
	27000	40	60	11	15	6190	LT273M050Q600A ☐☐
	12000	35	60	21	28	4680	LT123M063P600A ☐☐
	12000	40	50	21	28	4830	LT123M063Q500A ☐☐
	15000	35	80	17	22	4930	LT153M063P800A ☐☐
	15000	40	60	17	22	5030	LT153M063Q600A ☐☐
80	18000	35	80	14	18	5890	LT183M063P800A ☐☐
	18000	40	80	14	18	6030	LT183M063Q800A ☐☐
	4700	35	50	33	42	3230	LT472M080P500A ☐☐
	6800	35	50	23	29	3650	LT682M080P500A ☐☐
	8200	35	60	19	24	3950	LT822M080P600A ☐☐
	8200	40	50	19	24	3950	LT822M080Q500A ☐☐
	10000	35	80	15	20	4450	LT103M080P800A ☐☐
	10000	40	60	15	20	4450	LT103M080Q600A ☐☐
100	12000	40	80	13	17	5130	LT123M080Q800A ☐☐
	15000	40	80	10	13	5610	LT153M080Q800A ☐☐
	5600	35	60	27	36	3670	LT562M100P600A ☐☐
	5600	40	50	27	36	3670	LT562M100Q500A ☐☐
	6800	35	80	23	29	3970	LT682M100P800A ☐☐
	6800	40	60	23	29	3970	LT682M100Q600A ☐☐

☐☐: See description at end of standard ratings

STANDARD RATINGS
NOT FOR NEW DESIGNS

V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R - Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
100	8200	40	80	19	24	4500	LT822M100Q800A □□
160	1800	35	50	61	110	2490	LT182M160P500A □□
	2200	35	60	50	90	2800	LT222M160P600A □□
	2200	40	50	50	90	2800	LT222M160Q500A □□
	2700	35	80	41	74	3030	LT272M160P800A □□
	2700	40	60	41	74	3030	LT272M160Q600A □□
	3300	40	80	33	60	3290	LT332M160Q800A □□
220	1000	35	50	110	200	2050	LT102M220P500A □□
	1200	35	50	94	170	2270	LT122M220P500A □□
	1500	35	60	72	130	2470	LT152M220P600A □□
	1800	35	80	61	110	2680	LT182M220P800A □□
	1800	40	60	61	110	2680	LT182M220Q600A □□
	2700	40	80	41	74	3060	LT272M220Q800A □□
250	390	35	50	280	510	1210	LT391M250P500A □□
	1000	35	60	110	200	2130	LT102M250P600A □□
	1200	35	60	94	170	2270	LT122M250P600A □□
	1200	40	50	94	170	2270	LT122M250Q500A □□
	1500	35	80	72	130	2400	LT152M250P800A □□
	1500	40	60	72	130	2400	LT152M250Q600A □□
	1800	40	80	61	110	2820	LT182M250Q800A □□
385	470	35	40	230	420	2870	LT471M385P400A □□
	560	35	45	200	360	3220	LT561M385P450A □□
	680	35	50	160	290	3670	LT681M385P500A □□
	680	40	40	160	290	3620	LT681M385Q400A □□
	820	35	55	130	240	4160	LT821M385P550A □□
	820	40	45	130	240	4090	LT821M385Q450A □□
	1000	35	65	110	200	4820	LT102M385P650A □□
	1000	40	50	110	200	4640	LT102M385Q500A □□
	1000	45	40	110	200	4480	LT102M385V400A □□
	1200	35	75	94	170	5530	LT122M385P750A □□
	1200	40	60	94	170	5320	LT122M385Q600A □□
	1200	45	45	94	170	5040	LT122M385V450A □□
	1500	35	90	72	130	6570	LT152M385P900A □□
	1500	40	70	72	130	6220	LT152M385Q700A □□
	1500	45	55	72	130	5910	LT152M385V550A □□
	1800	40	80	61	110	7090	LT182M385Q800A □□
	1800	45	60	61	110	6600	LT182M385V600A □□
	2200	40	95	50	90	8280	LT222M385Q950A □□
2200	45	75	50	90	7750	LT222M385V750A □□	
2700	45	85	41	74	8900	LT272M385V850A □□	
400	470	35	40	230	420	2880	LT471M400P400A □□
	560	35	45	200	360	3240	LT561M400P450A □□
	560	40	40	200	360	3290	LT561M400Q400A □□
	680	35	50	160	290	3690	LT681M400P500A □□

□□: See description at end of standard ratings

STANDARD RATINGS
NOT FOR NEW DESIGNS

V_R (V)	C_R (μ F)	ϕ D (mm)	L (mm)	Typ. ESR +20°C - 120Hz (m Ω)	Max. ESR +20°C - 120Hz (m Ω)	I_R - Max. Ripple Current +85°C - 120Hz (mA rms)	CapXon Part Number
400	680	40	40	160	290	3640	LT681M400Q400A ☐☐
	820	35	60	130	240	4240	LT821M400P600A ☐☐
	820	40	50	130	240	4190	LT821M400Q500A ☐☐
	820	45	40	130	240	4130	LT821M400V400A ☐☐
	1000	35	70	110	200	4900	LT102M400P700A ☐☐
	1000	40	55	110	200	4750	LT102M400Q550A ☐☐
	1000	45	45	110	200	4660	LT102M400V450A ☐☐
	1200	35	80	94	170	5620	LT122M400P800A ☐☐
	1200	40	60	94	170	5350	LT122M400Q600A ☐☐
	1200	45	50	94	170	5220	LT122M400V500A ☐☐
	1500	35	95	72	130	6680	LT152M400P950A ☐☐
	1500	40	75	72	130	6340	LT152M400Q750A ☐☐
	1500	45	55	72	130	5940	LT152M400V550A ☐☐
	1800	40	85	61	110	7240	LT182M400Q850A ☐☐
	1800	45	65	61	110	6790	LT182M400V650A ☐☐
	2200	45	80	50	90	7930	LT222M400V800A ☐☐
2700	45	90	41	74	9110	LT272M400V900A ☐☐	
420	390	35	40	280	510	2470	LT391M420P400A ☐☐
	470	35	45	230	420	2800	LT471M420P450A ☐☐
	560	35	50	200	360	3150	LT561M420P500A ☐☐
	560	40	40	200	360	3150	LT561M420Q400A ☐☐
	680	35	55	160	290	3600	LT681M420P550A ☐☐
	680	40	45	160	290	3570	LT681M420Q450A ☐☐
	820	35	65	130	240	4130	LT821M420P650A ☐☐
	820	40	50	130	240	4030	LT821M420Q500A ☐☐
	820	45	40	130	240	3960	LT821M420V400A ☐☐
	1000	35	75	110	200	4780	LT102M420P750A ☐☐
	1000	40	60	110	200	4650	LT102M420Q600A ☐☐
	1000	45	45	110	200	4480	LT102M420V450A ☐☐
	1200	35	85	94	170	5490	LT122M420P850A ☐☐
	1200	40	70	94	170	5300	LT122M420Q700A ☐☐
	1200	45	55	94	170	5140	LT122M420V550A ☐☐
	1500	40	80	72	130	6210	LT152M420Q800A ☐☐
	1500	45	65	72	130	5990	LT152M420V650A ☐☐
	1800	40	95	61	110	7150	LT182M420Q950A ☐☐
1800	45	70	61	110	6720	LT182M420V700A ☐☐	
2200	45	85	50	90	7830	LT222M420V850A ☐☐	
450	330	35	40	440	800	2290	LT331M450P400A ☐☐
	390	35	40	380	680	2560	LT391M450P400A ☐☐
	470	35	45	310	560	2900	LT471M450P450A ☐☐
	470	40	40	310	560	2940	LT471M450Q400A ☐☐
	560	35	55	260	470	3300	LT561M450P550A ☐☐
	560	40	45	260	470	3300	LT561M450Q450A ☐☐
680	35	60	220	390	3770	LT681M450P600A ☐☐	

☐☐: See description at end of standard ratings

STANDARD RATINGS
NOT FOR NEW DESIGNS

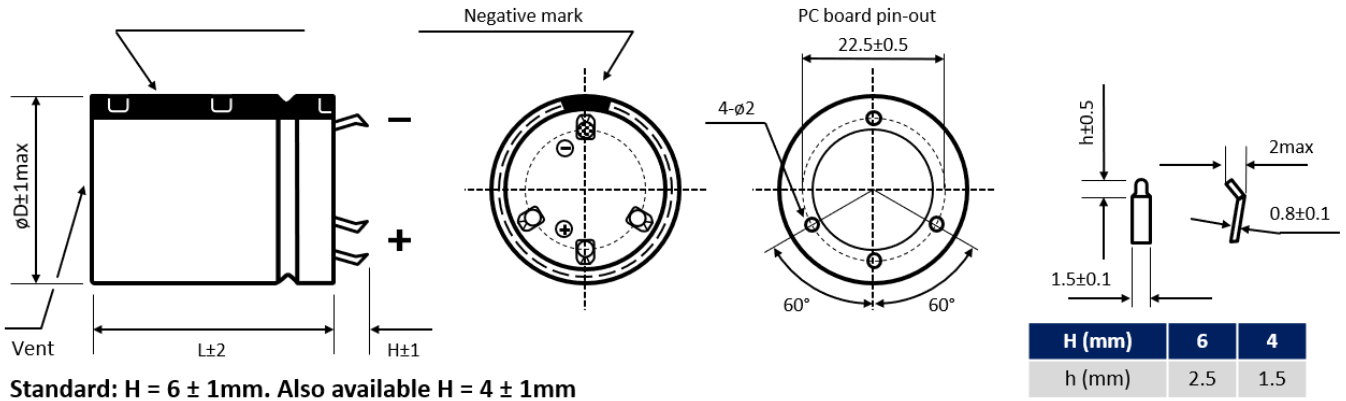
V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R = Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
450	680	40	50	220	390	3740	LT681M450Q500A □□
	680	45	40	220	390	3700	LT681M450V400A □□
	820	35	70	180	320	4340	LT821M450P700A □□
	820	40	55	180	320	4230	LT821M450Q550A □□
	820	45	45	180	320	4170	LT821M450V450A □□
	1000	35	80	150	270	5040	LT102M450P800A □□
	1000	40	60	150	270	4740	LT102M450Q600A □□
	1000	40	65	150	270	4870	LT102M450Q650A □□
	1000	45	50	150	270	4710	LT102M450V500A □□
	1200	35	95	120	220	5820	LT122M450P950A □□
	1200	40	75	120	220	5560	LT122M450Q750A □□
	1200	45	60	120	220	5390	LT122M450V600A □□
	1500	40	90	100	180	6590	LT152M450Q900A □□
	1500	45	70	100	180	6280	LT152M450V700A □□
	1800	45	80	83	83	150	7150
2200	45	95	67	67	120	8310	LT222M450V950A □□
500	220	35	40	670	1210	1300	LT221M500P400A □□
	270	35	45	540	980	1480	LT271M500P450A □□
	330	35	50	440	800	1690	LT331M500P500A □□
	330	40	40	440	800	1720	LT331M500Q400A □□
	390	35	55	380	680	1900	LT391M500P550A □□
	390	40	45	380	680	1920	LT391M500Q450A □□
	470	35	60	310	560	2160	LT471M500P600A □□
	470	40	50	310	560	2160	LT471M500Q500A □□
	470	45	40	310	560	2170	LT471M500V400A □□
	560	35	70	260	470	2460	LT561M500P700A □□
	560	40	55	260	470	2430	LT561M500Q550A □□
	560	45	45	260	470	2430	LT561M500V450A □□
	680	35	80	220	390	2840	LT681M500P800A □□
	680	40	65	220	390	2790	LT681M500Q650A □□
	680	45	50	220	390	2750	LT681M500V500A □□
	820	35	95	180	320	3290	LT821M500P950A □□
	820	40	75	180	320	3190	LT821M500Q750A □□
	820	45	60	180	320	3140	LT821M500V600A □□
	1000	40	85	150	270	3690	LT102M500Q850A □□
	1000	45	70	150	270	3610	LT102M500V700A □□
1200	45	80	120	220	4110	LT122M500V800A □□	
1500	45	100	100	180	4860	LT152M500VA00A □□	

 □□: Enter **Y6** for multipin-type • 6mm pin length

 □□: Enter **Y4** for multipin type • 4mm pin length

DIMENSIONS ▪ All dimensions in mm

Multi-pin version ▪ Standard type


MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

V_R (V) / Frequency (Hz)	50/60	100/120	300	1k	10k	50k - 100k
$16 \leq V_R \leq 100$	0.88	1	1.07	1.15	1.15	1.15
$160 \leq V_R \leq 250$	0.81	1	1.17	1.32	1.45	1.5
$315 \leq V_R \leq 500$	0.77	1	1.16	1.3	1.41	1.43

PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

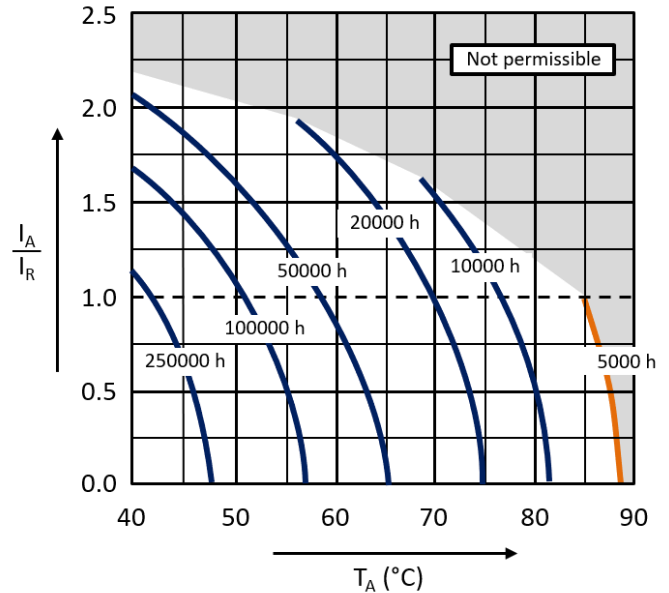
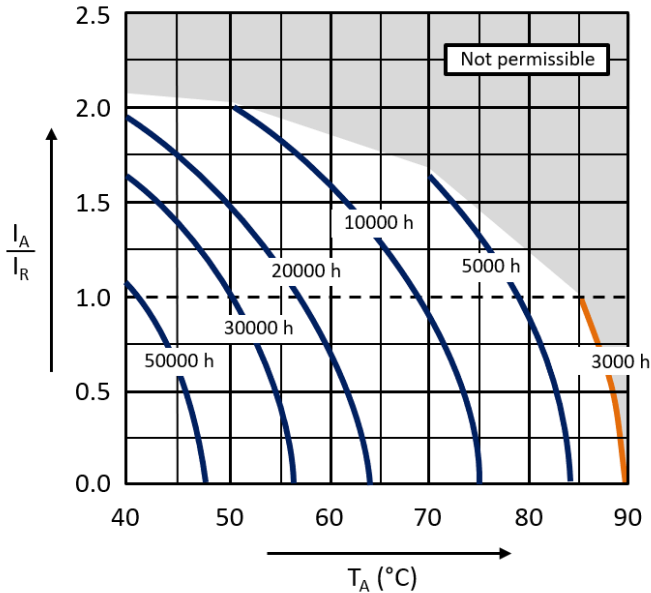
Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

General Precautions & Guidelines	Packaging Information	Vibration Test Profiles	3D Models

USEFUL LIFE

$V_R \leq 100V$

$V_R \geq 160V$



With: I_A : Application current
 I_R : Rated ripple current (A RMS)
 T_A : Application temperature of the capacitor

DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

Except for the written expressed warranties, CapXon does not impliedly, by assumption or whatever else, warrant, undertake, promise any other warranty or guaranty for any CapXon product.

For further information, please visit our website www.capxongroup.com or contact CapXon directly.