

PMS - (New 550Vdc rating; expanded range; new lugs)

Metallized polypropylene film capacitor

MKP - Switching / Snubber - High current



Main applications

Switching capacitor for resonant circuits, industrial and motor speed controls, induction heaters, high frequency and high current applications

Dielectric

Polypropylene

Electrodes

Vacuum deposited metal layers

Coating

Solvent resistant plastic case with resin sealing (UL 94 V-0). Flame retardant execution

Construction

Extended metallized film with internal series connection (refer to general technical information)

Terminals

Tinned copper (brass) lugs (lead-free) for screw fixing (please refer to article table)

Degree of protection

IP00

Installation

Whatever position assuring correct heat dissipation. Arrangement of many components with box walls in contact not admitted; suggested minimum distance between side by side elements $\geq 1/8$ of the box thickness (B size). Box with lugs terminals must be free to correctly dissipate from all the body faces

Reference standard

IEC 61071, IEC 60068, RoHS compliant

Climatic category

40/85/56 (IEC 60068/1), GPD (DIN40040)

Operating temperature range (case)

-40°...+85°C (+100°C observing voltage and current de-rating)

Max. permissible ambient temperature

+70°C, operation at rated power, current, voltage and natural cooling (+85°C observing voltage and current de-rating)

Rated capacitance (Cr)

0,068F to 18,5 μ F. Refer to article table

Capacitance tolerance (at 1kHz)

$\pm 10\%$ (code=K), $\pm 5\%$ (code=J). Other tolerances upon request

Capacitance temperature coefficient

Refer to graphs in general technical information

Long term stability (at 1 kHz)

Capacitance variation $\leq \pm 1\%$ after a period of 2 years at standard environmental conditions

Rated voltage (Ur), +85°C

550, 700, 850, 1000, 1200, 1500, 2000, 2500, 3000 Vdc

Temperature de-rated voltage

For operating temperature (case) $> +85^\circ\text{C}$,
Ur must be decreased 1,5% for every °C exceeding +85°C
Urms must be decreased 2,5% for every °C exceeding +85°C

Non recurrent surge voltage (Upk), +85°C

900, 1100, 1300, 1550, 1750, 2200, 2600, 3300, 4000 Vdc

Self inductance

$\leq 1\text{nH/mm}$ of fixing pitch

Maximum pulse rise time

Refer to article table

Maximum peak current (Ipeak)

Refer to article table. Max. non repetitive Ipk = 1,5 x Ipeak

Dissipation factor (DF), max.

Tg $\delta \times 10^{-4}$, measured at 25 $\pm 5^\circ\text{C}$, 1kHz

Cr $\leq 0,1\mu\text{F}$	0,1 μF <Cr $\leq 1\mu\text{F}$	1 μF <Cr $\leq 6,8\mu\text{F}$	6,8 μF <Cr $\leq 9\mu\text{F}$	Cr $> 9\mu\text{F}$
6	5	6	7	10

Insulation resistance (IR)

$\geq 3000\text{s}$ but need not exceed 30G Ω (typical value), when measured between terminals, at 25 $\pm 5^\circ\text{C}$, after 1 minute of electrification at 100Vdc

Test voltage between terminals (Ut)

1,6xUr (DC) applied for 10s / 2xUr (DC) applied for 2s, at 25 $\pm 5^\circ\text{C}$

Test voltage between terminals and case (Utc)

3kV 50+60Hz applied for 60s at 25 $\pm 5^\circ\text{C}$

Damp heat test (steady state)

Test conditions:
Temperature= +40 $\pm 2^\circ\text{C}$
Relative humidity=93 $\pm 2\%$
Test duration= 56 days

Performance:

Capacitance change $\leq \pm 2\%$
DF change ≤ 0.0010 at 1kHz
IR $\geq 50\%$ of initial limit value

Typical capacitance change versus operating time

-3% after 30'000 hours at Urms or after 100'000 hours at Ur

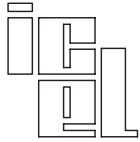
Life expectancy

$\geq 100'000$ hours (Ur); 30'000 hours (Urms)

Failure quota

300/10⁹ component hours

Warning: this specification must be completed with the data given in the "General technical information" chapter



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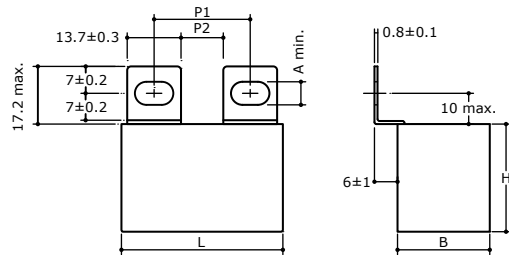
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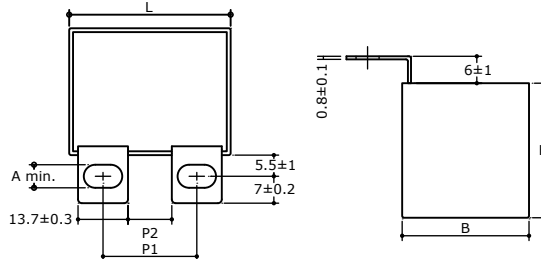


Dimensions in mm (drawings not in scale)

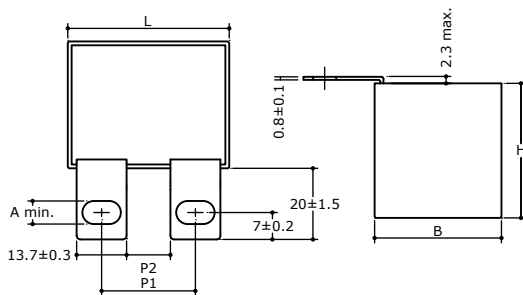
Style SP-SPM8 / SR-SRM8



Style VP-VPM8 / VR-VRM8



Style FP-FPM8 / FR-FRM8

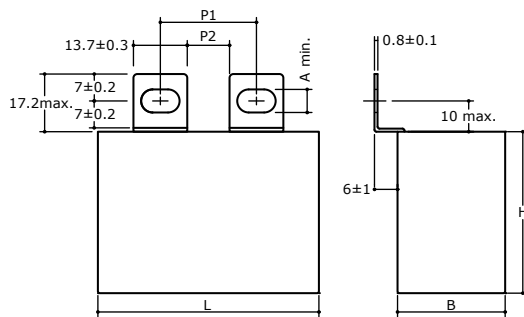


Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
SP-SPM8	42+42,5	23+28(M6) 25+26(M8)	11min.
VP-VPM8	57,5	37+42(M6) 39+40(M8)	24min.
FP-FPM8			
SR-SRM8	42+42,5	20+25(M6) 22+23(M8)	8min.
VR-VRM8	57.5	34+39(M6) 36+37(M8)	21min.
FR-FRM8			

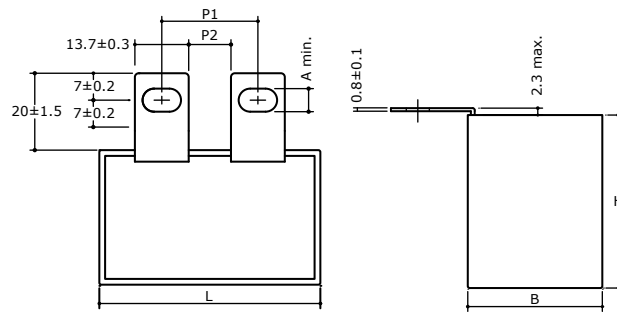
Fixing slot size (mm)**	
SP, VP, FP, SR, VR, FR	A=6min.
SPM8, VPM8, FPM8, SRM8, VRM8, FRM8	A=8min.

** Standard fixing slots for M6 screws, slots for M8 screws available upon request

Style SN-SNM8 (for L=57.5mm only)



Style VN-VNM8 (for L=57.5mm only)

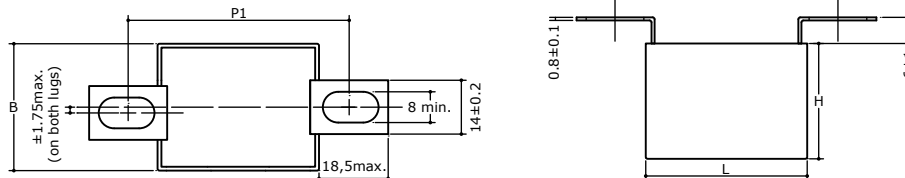


Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
SN-SNM8	42+42,5	Not available	
VN-VNM8	57.5	23+28(M6) 25+26(M8)	11min.

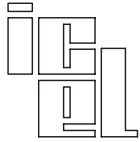
Fixing slot size (mm)**	
SN, VN	A= 6min.
SNM8, VNM8	A= 8min.

** Standard fixing slots for M6 screws, slots for M8 screws available upon request

Style AP



Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
AP	42+42,5	51+64 (M8)	-
	57.5	65+78 (M8)	-

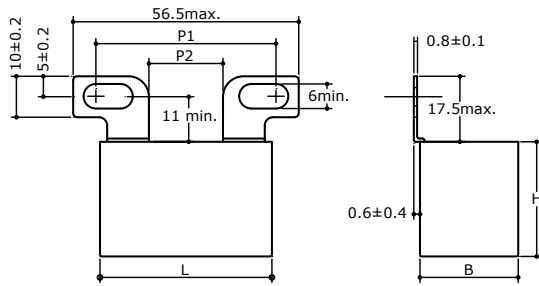


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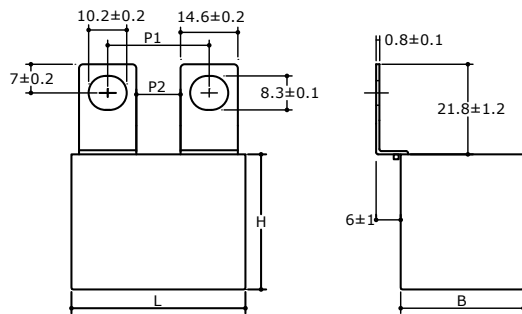
Dimensions in mm (drawings not in scale)

Style **BP** (Not available for L=57.5mm)



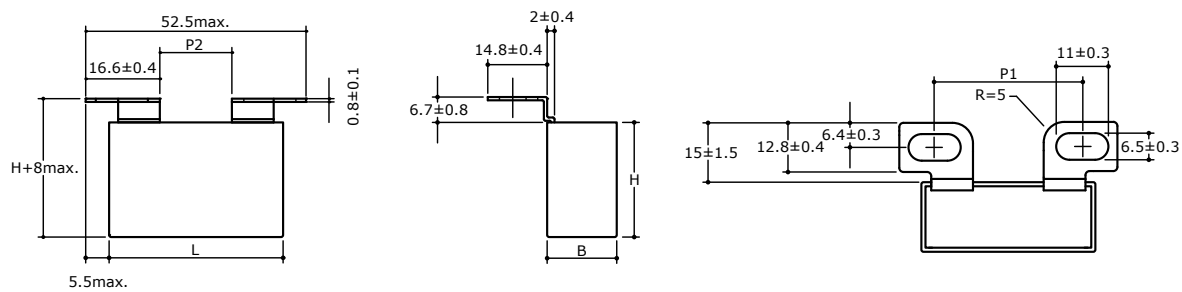
Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
BP	42÷42.5	32÷45 (M6)	17min.
	57.5	Not available	

Style **SL** (M8 slots only)

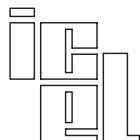


Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
SL	42÷42.5	22÷24 (M8)	8min.
	57.5	36÷38 (M8)	21min.

Style **BN** (M6 slots only; not available for L=57.5mm and for L=42÷42,5mm having B>22mm)



Fixing pitch and distance between lugs (mm)			
Lugs style	L	P1	P2
BN	42÷42.5	30÷37 (M6)	15min.
		Not available for B>22	
	57.5	Not available	



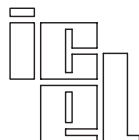
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PMS article table (different values available upon request) - (^)= NOT FOR NEW DESIGN: replaced with 30x45x42.5mm box

Ur Vdc	Urms Vac ⁽⁴⁾	UpK Vdc	Cap. µF	Dimension in mm			du/dt V/µs	Ipeak A	Irms ⁽²⁾ A	ESR ⁽²⁾ mΩ	ICEL Code ⁽¹⁾
				B	H	L					
550	340	900	2	17	28	42,5	110	220	13	4,3	PMS1554200*##
550	340	900	2,2	17	28	42,5	110	242	13,5	4,1	PMS1554220*##
550	340	900	2,5	17	32	42	110	275	15	3,8	PMS1554250*##A
550	340	900	2,5	24,5	27,5	42,5	110	275	15	3,8	PMS1554250*##
550	340	900	3	22	30	42,5	110	330	16,5	3,2	PMS1554300*##A
550	340	900	3	24,5	27,5	42,5	110	330	16,5	3,2	PMS1554300*##
550	340	900	3,3	22	30	42,5	110	363	17,5	3,1	PMS1554330*##
550	340	900	3,9	22	33,5	42,5	110	429	19	2,7	PMS1554390*##
550	340	900	4,7	28	37	42,5	110	517	22,5	2,3	PMS1554470*##
550	340	900	5	28	37	42,5	110	550	23	2,3	PMS1554500*##
550	340	900	5,6	28	37	42,5	110	610	24,5	2,1	PMS1554560*##A
550	340	900	5,6	33,5	35,5	42,5	110	610	24,5	2,1	PMS1554560*##
550	340	900	6,8	30	45	42,5	110	748	29,5	1,9	PMS1554680*##
550	340	900	7,5	33	45	42,5	110	825	31	1,8	PMS1554750*##
550	340	900	10	30	45	57,5	72	720	29	2,1	PMS1555100*##
550	340	900	13	35	50	57,5	72	936	33	1,9	PMS1555130*##
550	340	900	15	38	57,5	57,5	72	1080	34,5	1,7	PMS1555150*##
550	340	900	18,5	38	57,5	57,5	72	1332	38	1,6	PMS1555180*##
700	420	1100	1,5	17	28	42,5	150	225	15	3,5	PMS1704150*##B
700	420	1100	1,5	24,5	27,5	42,5	150	225	15,5	3,5	PMS1704150*##
700	420	1100	2	24,5	27,5	42,5	150	300	17,5	3,1	PMS1704200*##
700	420	1100	2	22	30	42,5	150	300	17,5	3,1	PMS1704200*##A
700	420	1100	2,2	22	33,5	42,5	150	330	18	3	PMS1704220*##
700	420	1100	2,5	22	33,5	42,5	150	375	20	2,6	PMS1704250*##
700	420	1100	3	33,5	35,5	42,5	150	450	22,5	2,6	PMS1704300*##
700	420	1100	3	28	37	42,5	150	450	22,5	2,6	PMS1704300*##A
700	420	1100	3,3	33,5	35,5	42,5	150	495	23	2,5	PMS1704330*##
700	420	1100	3,3	28	37	42,5	150	495	23	2,5	PMS1704330*##A
700	420	1100	4	33,5	35,5	42,5	150	600	24	2,1	PMS1704400*##
700	420	1100	4,7	30	45	42,5	150	600	29,5	1,7	PMS1704470*##A
700	420	1100	4,7	33	45	42,5	150	705	29,5	1,7	PMS1704470*## (^)
700	420	1100	5	30	45	42,5	150	750	30,5	1,7	PMS1704500*##A
700	420	1100	5	33	45	42,5	150	750	30,5	1,7	PMS1704500*## (^)
700	420	1100	5,6	33	45	42,5	150	840	32,5	1,6	PMS1704560*##
700	420	1100	6,8	30	45	57,5	100	680	29	2,2	PMS1704680*##
700	420	1100	9	35	50	57,5	100	900	34	1,8	PMS1704900*##
700	420	1100	10	38	57,5	57,5	100	1000	35,5	1,9	PMS1705100*##
700	420	1100	12	38	57,5	57,5	100	1200	37	1,7	PMS1705120*##
850	500	1300	1	17	28	42,5	200	200	14,5	3,6	PMS1854100*##
850	500	1300	1,2	22	30	42,5	200	240	16,5	3,2	PMS1854120*##A
850	500	1300	1,2	24,5	27,5	42,5	200	240	16,5	3,2	PMS1854120*##
850	500	1300	1,5	22	33,5	42,5	200	300	18,5	2,6	PMS1854150*##
850	500	1300	2,2	28	37	42,5	200	440	25	2,2	PMS1854220*##
850	500	1300	2,2	33,5	35,5	42,5	200	440	25	2,2	PMS1854220*##
850	500	1300	2,5	33,5	35,5	42,5	200	500	26	2	PMS1854250*##
850	500	1300	2,7	33,5	35,5	42,5	200	540	26,5	2	PMS1854270*##
850	500	1300	3	30	45	42,5	200	600	30	1,7	PMS1854300*##A
850	500	1300	3	33	45	42,5	200	600	30	1,7	PMS1854300*## (^)
850	500	1300	3,3	30	45	42,5	200	660	30,5	1,7	PMS1854330*##A
850	500	1300	3,3	33	45	42,5	200	660	30,5	1,7	PMS1854330*## (^)
850	500	1300	4	33	45	42,5	200	800	32	1,6	PMS1854400*##
850	500	1300	4,7	30	45	57,5	110	517	29	2,0	PMS1854470*##
850	500	1300	5	30	45	57,5	110	550	29,5	2,0	PMS1854500*##
850	500	1300	5,6	35	50	57,5	110	616	33	1,9	PMS1854560*##
850	500	1300	6	35	50	57,5	110	693	34	1,9	PMS1854600*##
850	500	1300	6,8	38	57,5	57,5	110	748	35	1,8	PMS1854680*##
850	500	1300	8	38	57,5	57,5	110	880	36,5	1,7	PMS1854800*##
1000	575	1550	0,68	17	28	42,5	225	153	14	4	PMS2103680*##
1000	575	1550	1	22	30	42,5	225	225	17	3,2	PMS2104100*##A
1000	575	1550	1	24,5	27,5	42,5	225	225	17	3,2	PMS2104100*##
1000	575	1550	1,2	22	33,5	42,5	225	270	18,5	2,9	PMS2104120*##

⁽¹⁾Change the * symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20% and the ## characters with the needed style code - ⁽²⁾Max. at 100kHz, +70°C for case operating T= +85°C (at T amb. >+70°C and T case >+85°C voltage and current de-rating must be observed), C tol. ≤±10% (for wider C tolerances, ESR variation must be taken in consideration) - ⁽³⁾Typical values at 100kHz (for operating frequencies far from the reference, ESR variation and related power dissipation variation must be taken in consideration) - ⁽⁴⁾Not suitable for across the line application



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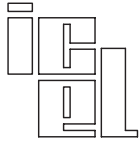
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Ur Vdc	Urms Vac ⁽⁴⁾	UpK Vdc	Cap. µF	Dimension in mm			du/dt V/µs	Ipeak A	Irms ⁽²⁾ A	ESR ⁽²⁾ mΩ	ICEL Code ⁽¹⁾
				B	H	L					
1000	575	1550	1,5	28	37	42,5	225	337,5	23	2,5	PMS2104150*##
1000	575	1550	2	33,5	35,5	42,5	225	450	25,5	2,0	PMS2104200*##
1000	575	1550	2	30	45	42,5	225	450	27	2,0	PMS2104200*##A
1000	575	1550	2,2	30	45	42,5	225	495	28,5	1,9	PMS2104220*##
1000	575	1550	2,5	33	45	42,5	225	562,5	30,5	1,8	PMS2104250*##
1000	575	1550	3,3	30	45	57,5	135	445,5	29	2,2	PMS2104330*##
1000	575	1550	4,7	35	50	57,5	135	634,5	33,5	1,8	PMS2104470*##
1000	575	1550	5,6	38	57,5	57,5	135	756	35	1,7	PMS2104560*##
1000	575	1550	6	38	57,5	57,5	135	810	36	1,7	PMS2104600*##
1200	630	1750	0,47	17	28	42,5	225	119,8	12,5	4,9	PMS2123470*##
1200	630	1750	0,68	22	30	42,5	225	173	15	4,1	PMS2123680*##A
1200	630	1750	0,68	24,5	27,5	42,5	255	173	15	4,1	PMS2123680*##
1200	630	1750	1	28	37	42,5	255	255	19,5	3,2	PMS2124100*##
1200	630	1750	1,2	28	37	42,5	255	306	22	2,8	PMS2124120*##
1200	630	1750	1,5	33,5	35,5	42,5	255	382	24	2,4	PMS2124150*##
1200	630	1750	2	33	45	42,5	255	510	28,5	1,9	PMS2124200*##
1200	630	1750	2,2	33	45	42,5	255	561	29,5	1,8	PMS2124220*##
1200	630	1750	2,5	30	45	57,5	150	375	28,5	2,4	PMS2124250*##
1200	630	1750	3	35	50	57,5	150	450	32	2,0	PMS2124300*##
1200	630	1750	3,3	35	50	57,5	150	495	32,5	2,0	PMS2124330*##
1200	630	1750	4	38	57,5	57,5	150	600	34	1,9	PMS2124400*##
1200	630	1750	4,7	38	57,5	57,5	150	705	35,5	1,7	PMS2124470*##
1500	650	2200	0,33	17	28	42,5	320	105,6	12	5,3	PMS2153330*##B
1500	650	2200	0,33	24,5	27,5	42,5	320	105,6	12	5,3	PMS2153330*##
1500	650	2200	0,47	22	30	42,5	320	150,4	14,5	4,3	PMS2153470*##A
1500	650	2200	0,47	24,5	27,5	42,5	320	150,4	14,5	4,3	PMS2153470*##
1500	650	2200	0,68	33,5	35,5	42,5	320	217,6	18,5	3,6	PMS2153680*##
1500	650	2200	1	33,5	35,5	42,5	320	320	23,5	2,5	PMS2154100*##
1500	650	2200	1,2	30	45	42,5	320	384	27,5	2,1	PMS2154120*##
1500	650	2200	1,3	33	45	42,5	320	416	28,5	2,1	PMS2154130*##
1500	650	2200	1,5	30	45	57,5	175	262,5	25	3,0	PMS2154150*##
1500	650	2200	2	35	50	57,5	175	350	29	2,5	PMS2154200*##
1500	650	2200	2,2	35	50	57,5	175	385	29,5	2,4	PMS2154220*##
1500	650	2200	3	38	57,5	57,5	175	525	34	2	PMS2154300*##
2000	700	2600	0,22	17	28	42,5	410	90,2	11,5	6,4	PMS2203220*##B
2000	700	2600	0,22	24,5	27,5	42,5	410	90,2	11,5	6,4	PMS2203220*##
2000	700	2600	0,27	24,5	27,5	42,5	410	110,7	13	5,6	PMS2203270*##
2000	700	2600	0,33	22	30	42,5	410	135,3	14	4,6	PMS2203330*##
2000	700	2600	0,47	28	37	42,5	410	192,7	19	3,7	PMS2203470*##A
2000	700	2600	0,47	33,5	35,5	42,5	410	192,7	18,5	3,7	PMS2203470*##
2000	700	2600	0,56	33,5	35,5	42,5	410	229,6	21	3,3	PMS2203560*##
2000	700	2600	0,68	30	45	42,5	410	278,8	23,5	2,9	PMS2203680*##A
2000	700	2600	0,68	33	45	42,5	410	278,8	23,5	2,9	PMS2203680*## (^)
2000	700	2600	0,82	33	45	42,5	410	336,2	25,5	2,6	PMS2203820*##
2000	700	2600	1	30	45	57,5	225	225	23	3,5	PMS2204100*##
2000	700	2600	1,5	35	50	57,5	225	337,5	27,5	2,7	PMS2204150*##
2000	700	2600	2	38	57,5	57,5	225	450	32	2,2	PMS2204200*##
2500	725	3300	0,1	17	28	42,5	550	55	8	11,7	PMS2253100*##
2500	725	3300	0,12	17	28	42,5	550	66	9	10,1	PMS2253120*##B
2500	725	3300	0,12	24,5	27,5	42,5	550	66	9	10,1	PMS2253120*##
2500	725	3300	0,15	24,5	27,5	42,5	550	82,5	10	8,3	PMS2253150*##
2500	725	3300	0,18	24,5	27,5	42,5	550	99	11,5	7,2	PMS2253180*##
2500	725	3300	0,22	22	33,5	42,5	550	121	13,5	6,0	PMS2253220*##
2500	725	3300	0,22	33,5	35,5	42,5	550	121	14	6,0	PMS2253220*##
2500	725	3300	0,33	33,5	35,5	42,5	550	181,5	17,5	4,4	PMS2253330*##
2500	725	3300	0,39	33,5	35,5	42,5	550	214,5	18,5	3,9	PMS2253390*##
2500	725	3300	0,47	33	45	42,5	550	258,5	22	3,4	PMS2253470*##
2500	725	3300	0,56	33	45	42,5	550	308	23	3,1	PMS2253560*##
2500	725	3300	0,68	30	45	57,5	280	190,4	22,5	3,8	PMS2253680*##
2500	725	3300	1	35	50	57,5	280	280	26,5	2,9	PMS2254100*##
2500	725	3300	1,2	38	57,5	57,5	280	330	29,5	2,7	PMS2254120*##

⁽¹⁾Change the * symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20% and the ## characters with the needed style code - ⁽²⁾Max. at 100kHz, +70°C for case operating T= +85°C (at T amb. >+70°C and T case >+85°C voltage and current de-rating must be observed), C tol. ≤±10% (for wider C tolerances, ESR variation must be taken in consideration) - ⁽³⁾Typical values at 100kHz (for operating frequencies far from the reference, ESR variation and related power dissipation variation must be taken in consideration) - ⁽⁴⁾Not suitable for across the line application



PMS - (New 550Vdc rating; expanded range; new lugs)
Metallized polypropylene film capacitor
MKP - Switching / Snubber - High current



Ur Vdc	Urms Vac ⁽⁴⁾	UpK Vdc	Cap. µF	Dimension in mm			du/dt V/µs	I _{peak} A	I _{rms} ⁽²⁾ A	ESR ⁽²⁾ mΩ	ICEL Code ⁽¹⁾
				B	H	L					
3000	750	4000	0,068	17	28	42,5	750	51	8	14,5	PMS2302680*##B
3000	750	4000	0,068	24,5	27,5	42,5	750	51	8	14,5	PMS2302680*##
3000	750	4000	0,1	22	30	42,5	750	75	10	9,9	PMS2303100*##A
3000	750	4000	0,1	24,5	27,5	42,5	750	75	10	9,9	PMS2303100*##
3000	750	4000	0,12	22	33,5	42,5	750	90	11	8,8	PMS2303120*##B
3000	750	4000	0,12	33,5	35,5	42,5	750	90	11	8,8	PMS2303120*##
3000	750	4000	0,15	33,5	35,5	42,5	750	112,5	13,5	7,3	PMS2303150*##
3000	750	4000	0,18	28	37	42,5	750	135	15	6,3	PMS2303150*##A
3000	750	4000	0,18	33,5	35,5	42,5	750	135	14,5	6,3	PMS2303180*##
3000	750	4000	0,22	30	45	42,5	750	165	17,5	5,3	PMS2303220*##A
3000	750	4000	0,22	33	45	42,5	750	165	17,5	5,3	PMS2303220*## (^)
3000	750	4000	0,3	33	45	42,5	750	225	20,5	4,2	PMS2303300*##
3000	750	4000	0,39	30	45	57,5	370	144,3	19	5,2	PMS2303390*##
3000	750	4000	0,47	35	50	57,5	370	173,9	21,5	4,6	PMS2303470*##
3000	750	4000	0,56	35	50	57,5	370	207,2	23	4,1	PMS2303560*##
3000	750	4000	0,68	38	57,5	57,5	370	251,6	27	3,5	PMS2303560*##

⁽¹⁾Change the * symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20% and the ## characters with the needed style code - ⁽²⁾Max. at 100kHz, +70°C for case operating T= +85°C (at T amb. >+70°C and T case >+85°C voltage and current de-rating must be observed), C tol. ≤±10% (for wider C tolerances, ESR variation must be taken in consideration)- ⁽³⁾Typical values at 100kHz (for operating frequencies far from the reference, ESR variation and related power dissipation variation must be taken in consideration) - ⁽⁴⁾Not suitable for across the line application