

# PMC

## Metallized polypropylene film capacitor

### MKP - Switching - 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 (refer to general technical information)

#### Terminals

Tinned copper 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)

1,5 $\mu$ F to 60 $\mu$ 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)

250, 330, 400, 600, 700 Vdc

#### Temperature de-rated voltage

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

#### Non recurrent surge voltage (Upk)

400, 500, 600, 800, 1000 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 $\leq 5\mu\text{F}$	$5\mu\text{F} < \text{Cr} \leq 25\mu\text{F}$	Cr $> 25\mu\text{F}$
5	8	10

#### Insulation resistance (IR)

$\geq 3000\text{s}$  but need not exceed  $30\text{G}\Omega$  (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  $\leq 0.0010$  at 1kHz  
IR  $\geq 50\%$  of initial limit value

#### Typical capacitance change versus operating time

-5% after 30'000 hours at Urms or after 100'000 hours at Ur

#### Life expectancy

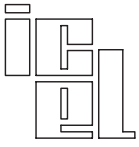
$\geq 100'000$  hours (Ur); 30'000 hours (Urms)

#### Failure quota

300/10<sup>9</sup> component hours

### Warning

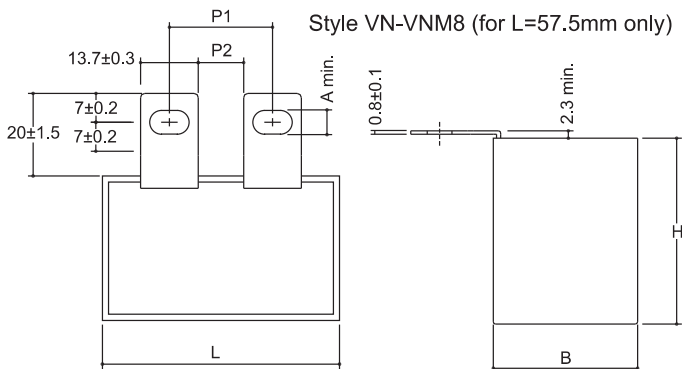
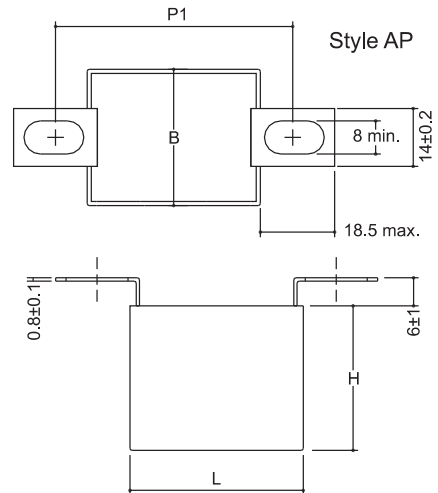
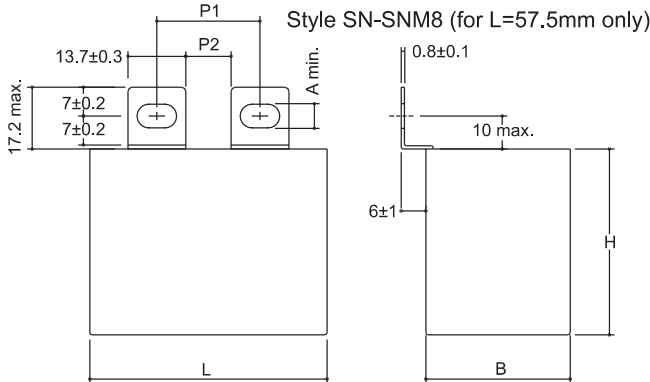
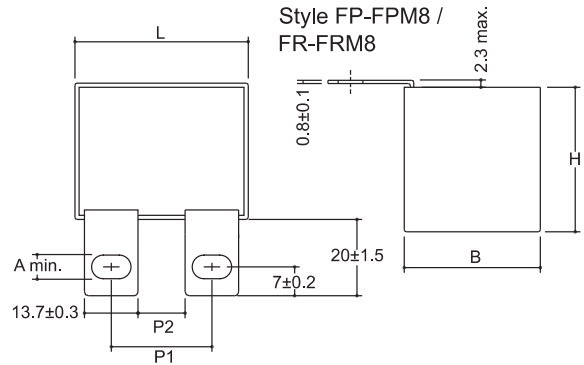
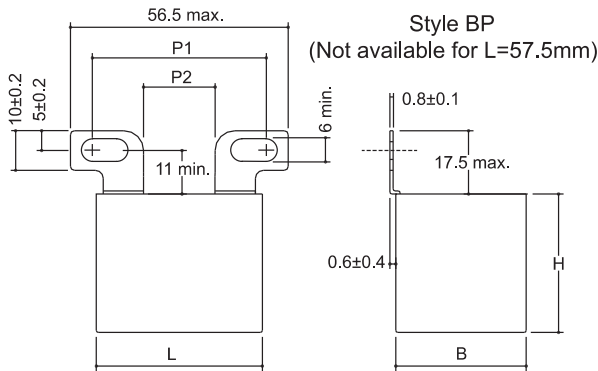
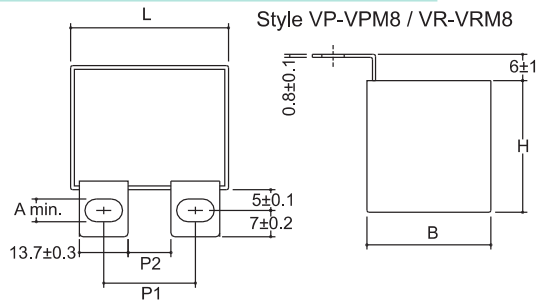
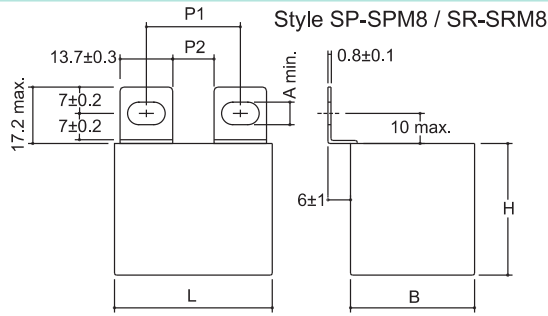
This specification must be completed with the data given in the "General technical information" chapter



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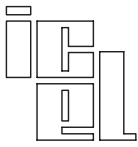
### MKP - Switching - High current



Fixing slot size (mm)	
SP, VP, FP, SR, VR, FR, SN, VN	A = 6 min
SPM8, VPM8, FPM8, SRM8, VRM8, FRM8, SNM8, VNM8	A = 8 min.

Fixing pitch and distance between lugs (mm)				
Lug style	L	P1		P2
		M6	M8	min.
SP-SPM8	42,5	23 ÷ 28	25 ÷ 26	11
VP-VPM8	57,5	37 ÷ 42	39 ÷ 40	24
FP-FPM8				
SR-SRM8	42,5	20 ÷ 25	22 ÷ 23	8
VR-VRM8	57,5	34 ÷ 39	36 ÷ 37	21
FR-FRM8				
SN-SNM8	42,5	Not available		
VN-VNM8	57,5	23 ÷ 28	25 ÷ 26	11
AP	42,5	-	51 ÷ 64	-
	57,5	-	65 ÷ 78	-
BP	42,5	32 ÷ 45	-	17
	57,5	Not available		

**Note:** standard fixing slots are for M6 screws; execution with slots for M8 screws upon request only (AP excluded)



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PMC article table (different values available upon request)

Ur Vdc	Urms Vac <sup>(4)</sup>	UpK Vdc	Cap. µF	Dimension in mm			du/dt V/µs	Ipeak A	Irms <sup>(2)</sup> A	ESR <sup>(2)</sup> mΩ	ICEL Code <sup>(1)</sup>
				B	H	L					
250	160	400	10	17	28	42,5	25	250	17,5	2,6	PMC1255100*##B
250	160	400	10	24,5	27,5	42,5	25	250	19	2,6	PMC1255100*##
250	160	400	15	22	33,5	42,5	25	375	22	2,2	PMC1255150*##B
250	160	400	15	33,5	35,5	42,5	25	375	24,5	2,2	PMC1255150*##
250	160	400	20	33,5	35,5	42,5	25	500	27	1,9	PMC1255200*##
250	160	400	22	33,5	35,5	42,5	25	550	27,5	1,9	PMC1255220*##
250	160	400	25	33,5	35,5	42,5	25	625	28	1,8	PMC1255250*##
250	160	400	30	33	45	42,5	25	750	30	1,7	PMC1255300*##
250	160	400	33	33	45	42,5	25	825	31	1,7	PMC1255330*##
250	160	400	35	33	45	42,5	25	875	31	1,7	PMC1255350*##
250	160	400	40	30	45	57,5	15	600	28,5	2,4	PMC1255400*##
250	160	400	50	35	50	57,5	15	750	33	2,1	PMC1255500*##
250	160	400	60	35	50	57,5	15	900	34,5	1,9	PMC1255600*##
330	220	500	4,7	17	28	42,5	30	141	15	3,6	PMC1334470*##
330	220	500	6,8	24,5	27,5	42,5	30	204	18,5	2,8	PMC1334680*##
330	220	500	10	22	33,5	42,5	30	300	21	2,4	PMC1335100*##
330	220	500	15	33,5	35,5	42,5	30	450	26,5	2	PMC1335150*##
330	220	500	20	33	45	42,5	30	600	29,5	1,8	PMC1335200*##
330	220	500	22	33	45	42,5	30	660	30,5	1,7	PMC1335220*##
330	220	500	25	30	45	57,5	17	425	26,5	2,7	PMC1335250*##
330	220	500	30	30	45	57,5	17	510	27,5	2,5	PMC1335300*##
330	220	500	35	35	50	57,5	17	595	31	2,3	PMC1335350*##
330	220	500	40	35	50	57,5	17	680	32,5	2,1	PMC1335400*##
400	275	600	4	17	28	42,5	40	160	15,5	3,2	PMC1404400*##B
400	275	600	4	24,5	27,5	42,5	40	160	17	3,2	PMC1404400*##
400	275	600	5	24,5	27,5	42,5	40	200	18,5	2,8	PMC1404500*##
400	275	600	6,8	22	33,5	42,5	40	272	21	2,4	PMC1404680*##B
400	275	600	6,8	33,5	35,5	42,5	40	272	23,5	2,4	PMC1404680*##
400	275	600	10	33,5	35,5	42,5	40	400	26,5	2	PMC1405100*##
400	275	600	12,5	33	45	42,5	40	500	29	1,9	PMC1405125*##
400	275	600	15	33	45	42,5	40	600	30	1,8	PMC1405150*##
400	275	600	20	30	45	57,5	20	400	26,5	2,8	PMC1405200*##
400	275	600	22	35	50	57,5	20	440	29	2,7	PMC1405220*##
400	275	600	25	35	50	57,5	20	500	30	2,5	PMC1405250*##
600	350	800	2,2	17	28	42,5	55	121	14	4,1	PMC1604220*##
600	350	800	2,5	24,5	27,5	42,5	55	137	16	3,8	PMC1604250*##
600	350	800	3	24,5	27,5	42,5	55	165	17	3,4	PMC1604300*##
600	350	800	3,3	24,5	27,5	42,5	55	181,5	17	3,3	PMC1604330*##
600	350	600	4	22	33,5	42,5	55	220	20	2,6	PMC1604400*##B
600	350	800	4	33,5	35,5	42,5	55	220	23	2,6	PMC1604400*##
600	350	800	4,7	33,5	35,5	42,5	55	258,5	24	2,4	PMC1604470*##
600	350	800	5	33,5	35,5	42,5	55	275	24	2,4	PMC1604500*##
600	350	800	6,8	33	45	42,5	55	374	27,5	2,1	PMC1604680*##
600	350	800	9	33	45	42,5	55	495	30	1,8	PMC1604900*##
600	350	800	10	30	45	57,5	30	300	23,5	3,6	PMC1605100*##
600	350	800	12,5	35	50	57,5	30	375	26	3,3	PMC1605125*##
600	350	800	15	35	50	57,5	30	450	27,5	3	PMC1605150*##
700	400	1000	1,2	17	28	42,5	70	84	12	5,3	PMC1704100*##
700	400	1000	1,5	24,5	27,5	42,5	70	105	14,5	4,6	PMC1704150*##
700	400	1000	2	24,5	27,5	42,5	70	140	16	3,8	PMC1704200*##
700	400	1000	2,5	22	33,5	42,5	70	175	17,5	3,3	PMC1704250*##
700	400	1000	2,5	33,5	35,5	42,5	70	175	20,5	3,3	PMC1704250*##
700	400	1000	3	33,5	35,5	42,5	70	210	21,5	3	PMC1704300*##
700	400	1000	3,3	33,5	35,5	42,5	70	231	22	2,9	PMC1704330*##
700	400	1000	4	33	45	42,5	70	280	25,5	2,5	PMC1704400*##
700	400	1000	4,7	33	45	42,5	70	329	27	2,2	PMC1704470*##
700	400	1000	5	33	45	42,5	70	350	27	2,2	PMC1704500*##
700	400	1000	6,8	30	45	57,5	40	272	22,5	3,8	PMC1704680*##
700	400	1000	8	35	50	57,5	40	320	25,5	3,5	PMC1704800*##
700	400	1000	9	35	50	57,5	40	360	26,5	3,2	PMC1704900*##

<sup>(1)</sup>Change the \* symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20% and the ## characters with the needed style code - <sup>(2)</sup>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% - <sup>(3)</sup>Typical values at 100kHz - <sup>(4)</sup>Not suitable for across the line application