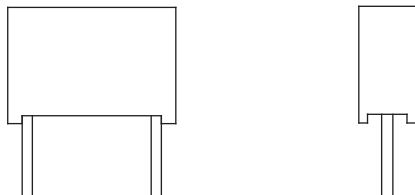




## AC and Pulse Metallized Polypropylene Film Capacitors MKP Radial Potted Type



### FEATURES

- Material categorization:  
for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### APPLICATIONS

- Pulse operations
- SMPS and thyristor circuits
- Storage, filter, timing, sample and hold circuits



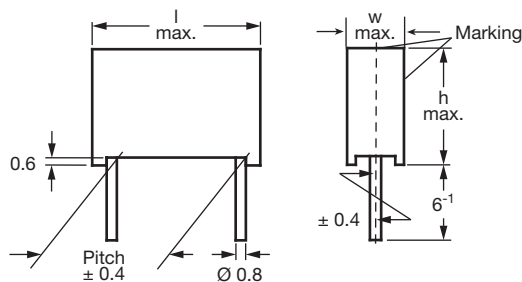
QUICK REFERENCE DATA	
Capacitance range	4700 pF to 10 $\mu$ F
Capacitance tolerances	$\pm 20\%$ (M), $\pm 10\%$ (K), $\pm 5\%$ (J)
Climatic testing class according to IEC 60068	55/100/56
Operating temperature range	-55 °C to +100 °C
Dielectric	Polypropylene film
Electrodes	Metallized
Construction	Extended metallized film (refer to general information following the link in note below table)
Coating	Flame retardant plastic case, epoxy resin sealed UL-class 94 V-0
Leads	Tinned wire
Rated voltages ( $U_R$ )	100 V <sub>DC</sub> , 160 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub>
Insulation resistance	Measured at 100 V <sub>DC</sub> after one minute <b>For C <math>\leq</math> 0.33 <math>\mu</math>F:</b> 25 000 M $\Omega$ ( $U_R$ 100 V <sub>DC</sub> )
Permissible AC voltages (RMS) up to 60 Hz	63 V <sub>AC</sub> , 100 V <sub>AC</sub> , 160 V <sub>AC</sub> , 220 V <sub>AC</sub> , 250 V <sub>AC</sub>
Test voltage (electrode/electrode)	1.6 x $U_R$ for 2 s
Time constant	Measured at 100 V <sub>DC</sub> after one minute <b>For C &gt; 0.33 <math>\mu</math>F:</b> 30 000 s minimum value
Temperature coefficient	-250 x 10 <sup>-6</sup> /°C (typical value)
Capacitance drift	Up to +40 °C, < 0.5 % for a period of two years
Dielectric absorption	0.05 % (typical value) according to IEC 60068-2-21
Derating for DC and AC category voltage $U_C$	At +85 °C: $U_C = 1.0 U_R$ At +100 °C: $U_C = 0.7 U_R$
Self inductance	~ 6 nH measured with 2 mm long leads
Pull test on leads	$\geq 30$ N in direction of leads according to IEC 60068-2-21

### Note

- For further details, please refer to the general information available at [www.vishay.com/doc?26033](http://www.vishay.com/doc?26033)



**DIMENSIONS** in millimeters



LEAD DIAMETER $d_t$	W	PITCH
$0.5 \pm 0.05$	-	5 to 7.5
$0.6 \pm 0.06$	-	10
$0.6 \pm 0.06$	$\leq 6$	15
$0.8 \pm 0.08$	$> 6$	15
$0.8 \pm 0.08$	$< 16$	22.5 to 37.5
$1.0 \pm 0.1$	$\geq 16$	22.5 to 37.5

**MAXIMUM PULSE RISE TIME**

PCM (mm)	MAXIMUM PULSE RISE TIME $dV/dt$ [V/ $\mu$ s]				
	100 V <sub>DC</sub>	160 V <sub>DC</sub>	250 V <sub>DC</sub>	400 V <sub>DC</sub>	630 V <sub>DC</sub>
5	390	-	-	-	-
7.5	-	240	300	-	-
10	-	175	220	380	510
15	-	100	125	200	280
22.5	-	60	75	120	160
27.5	-	45	60	95	120
37.5	-	30	40	65	85

**Note**

- If the maximum pulse voltage is less than the rated voltage higher  $dV/dt$  values can be permitted.

**DISSIPATION FACTOR  $\tan \delta$**

MEASURED AT	$C \leq 0.1 \mu F$	$0.1 \mu F < C \leq 1.0 \mu F$	$C > 1.0 \mu F$
1 kHz	$\leq 10 \times 10^{-4}$	$\leq 10 \times 10^{-4}$	$\leq 40 \times 10^{-4}$
10 kHz	$\leq 10 \times 10^{-4}$	$\leq 10 \times 10^{-4}$	-
100 kHz	$\leq 10 \times 10^{-4}$	-	-
Maximum values			



ELECTRICAL DATA						
U <sub>RDC</sub> (V)	CAP. (μF)	CAPACITANCE CODE	VOLTAGE CODE	V <sub>AC</sub>	DIMENSIONS w x h x l (mm)	PCM (mm)
100	0.0047	-247	01	63	3.5 x 8.0 x 7.2	5.0
	0.0068	-268			3.5 x 8.0 x 7.2	5.0
	0.010	-310			3.5 x 8.0 x 7.2	5.0
	0.015	-315			3.5 x 8.0 x 7.2	5.0
	0.022	-322			3.5 x 8.0 x 7.2	5.0
	0.033	-333			3.5 x 8.0 x 7.2	5.0
	0.047	-347			4.5 x 9.0 x 7.2	5.0
	0.068	-368			4.5 x 9.0 x 7.2	5.0
	0.100	-410			6.0 x 11.0 x 7.2	5.0
160	0.033	-333	16	100	3.0 x 8.0 x 10.0	7.5
	0.047	-347			3.0 x 8.0 x 10.0	7.5
	0.068	-368			4.0 x 10.0 x 12.5	10.0
	0.10	-410			4.0 x 10.0 x 12.5	10.0
	0.15	-415			5.0 x 11.0 x 12.5	10.0
	0.22	-422			5.0 x 11.0 x 17.5	15.0
	0.33	-433			6.0 x 12.0 x 17.5	15.0
	0.47	-447			7.0 x 13.5 x 17.5	15.0
	0.68	-468			8.5 x 15.0 x 17.5	15.0
	1.0	-510			7.0 x 16.5 x 26.0	22.5
	1.5	-515			8.5 x 18.0 x 26.0	22.5
	2.2	-522			9.0 x 19.0 x 31.5	27.5
	3.3	-533			11.0 x 21.0 x 31.0	27.5
	4.7	-547			12.5 x 22.5 x 41.5	37.5
	6.8	-568			14.5 x 24.5 x 41.5	37.5
10.0	-610	16.0 x 28.5 x 41.5	37.5			
250	0.010	-310	25	160	3.0 x 8.0 x 10.0	7.5
	0.015	-315			3.0 x 8.0 x 10.0	7.5
	0.022	-322			3.0 x 8.0 x 10.0	7.5
	0.033	-333			4.0 x 10.0 x 12.5	10.0
	0.047	-347			4.0 x 10.0 x 12.5	10.0
	0.068	-368			4.0 x 10.0 x 12.5	10.0
	0.10	-410			4.0 x 10.0 x 12.5	10.0
	0.15	-415			5.0 x 11.0 x 17.5	15.0
	0.22	-422			5.0 x 11.0 x 17.5	15.0
	0.33	-433			6.0 x 12.0 x 17.5	15.0
	0.47	-447			7.0 x 13.5 x 17.5	15.0
	0.68	-468			6.0 x 15.5 x 26.0	22.5
	1.0	-510			7.0 x 16.5 x 26.0	22.5
	1.5	-515			9.0 x 19.0 x 31.5	27.5
	2.2	-522			11.0 x 21.0 x 31.0	27.5
	3.3	-533			13.0 x 23.0 x 31.0	27.5
	4.7	-547			12.5 x 22.5 x 41.5	37.5
	6.8	-568			14.5 x 24.5 x 41.5	37.5
10.0	-610	16.0 x 28.5 x 41.5	37.5			



ELECTRICAL DATA						
U <sub>RDC</sub> (V)	CAP. (µF)	CAPACITANCE CODE	VOLTAGE CODE	V <sub>AC</sub>	DIMENSIONS w x h x l (mm)	PCM (mm)
400	0.010	-310	40	220	4.0 x 10.0 x 12.5	10.0
	0.015	-315			4.0 x 10.0 x 12.5	10.0
	0.022	-322			4.0 x 10.0 x 12.5	10.0
	0.033	-333			4.0 x 10.0 x 12.5	10.0
	0.047	-347			5.0 x 11.0 x 17.5	15.0
	0.068	-368			5.0 x 11.0 x 17.5	15.0
	0.10	-410			5.0 x 11.0 x 17.5	15.0
	0.15	-415			6.0 x 12.0 x 17.5	15.0
	0.22	-422			7.0 x 13.5 x 17.5	15.0
	0.33	-433			6.0 x 15.5 x 26.0	22.5
	0.47	-447			7.0 x 16.5 x 26.0	22.5
	0.68	-468			9.0 x 19.0 x 31.5	27.5
	1.0	-510			11.0 x 21.0 x 31.0	27.5
	1.5	-515			13.0 x 23.0 x 31.0	27.5
	2.2	-522			12.5 x 22.5 x 41.5	37.5
	3.3	-533			14.5 x 24.5 x 41.5	37.5
4.7	-547	18.0 x 32.5 x 41.5	37.5			
630	0.010	-310	63	250 <sup>(1)</sup>	4.0 x 10.0 x 12.5	10.0
	0.015	-315			4.0 x 10.0 x 12.5	10.0
	0.022	-322			4.0 x 10.0 x 12.5	10.0
	0.033	-333			5.0 x 11.0 x 17.5	15.0
	0.047	-347			5.0 x 11.0 x 17.5	15.0
	0.068	-368			5.0 x 11.0 x 17.5	15.0
	0.10	-410			6.0 x 12.0 x 17.5	15.0
	0.15	-415			6.0 x 15.5 x 26.0	22.5
	0.22	-422			7.0 x 16.5 x 26.0	22.5
	0.33	-433			8.5 x 18.0 x 26.0	22.5
	0.47	-447			9.0 x 19.0 x 31.5	27.5
	0.68	-468			11.0 x 21.0 x 31.0	27.5
	1.0	-510			13.0 x 23.0 x 31.0	27.5
	1.5	-515			14.5 x 24.5 x 41.5	37.5
	2.2	-522			16.0 x 28.5 x 43.0	37.5

**Notes**

- Further C-values upon request.
- <sup>(1)</sup> Not suitable for mains applications.  
Please refer to X-capacitors in our catalog "RFI Suppression Components".

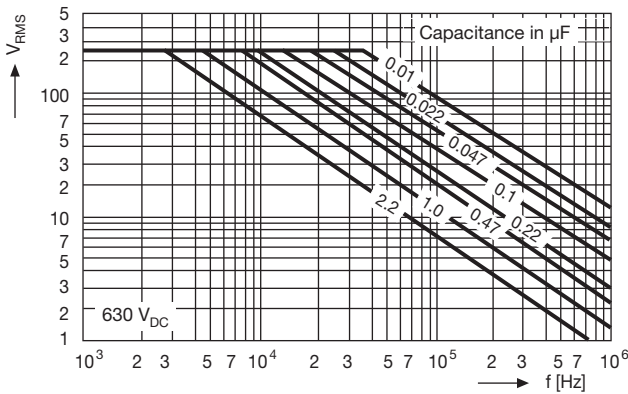
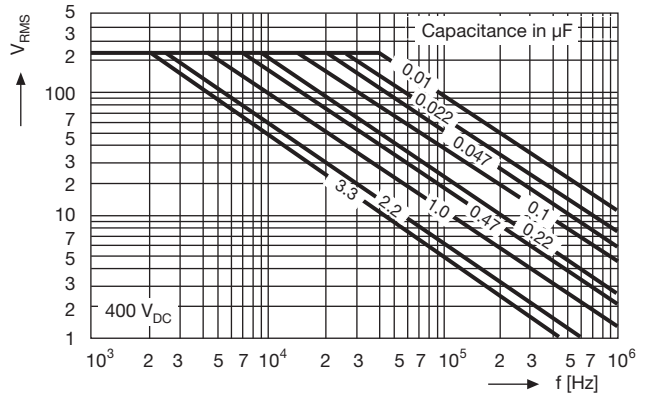
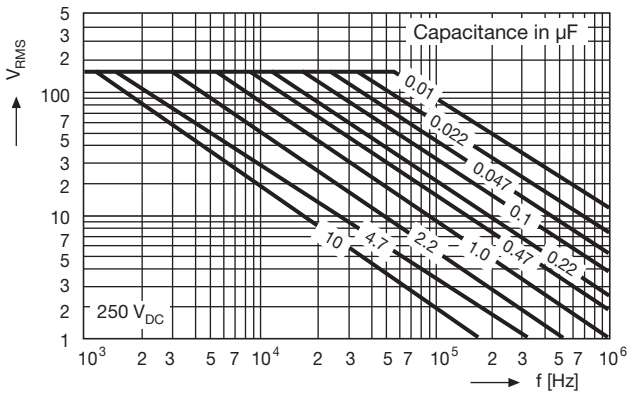
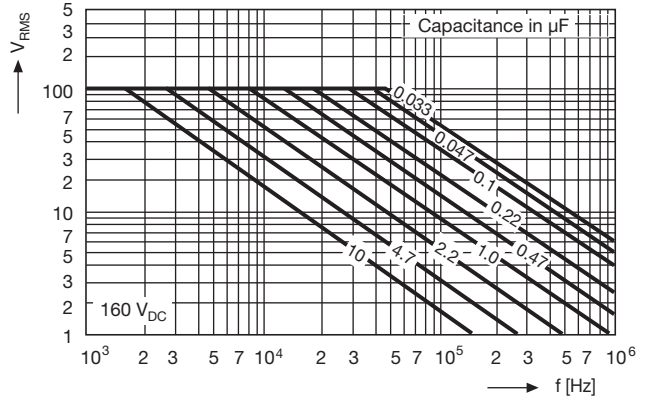
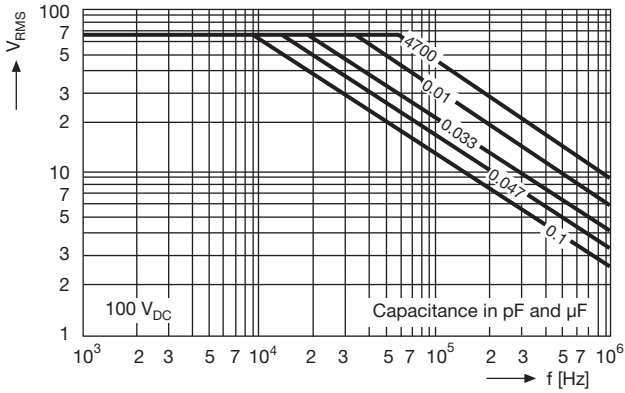
RECOMMENDED PACKAGING								
LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	PCM 7.5 TO 10	PCM 15	PCM 22.5 TO 27.5	PCM 37.5
D	Ammo	16.5	S <sup>(1)</sup>	MKP1840310405D	x	x	-	-
G	Ammo	18.5	S <sup>(1)</sup>	MKP1840310405G	x	x	-	-
F	Reel	16.5	350	MKP1840310405F	x	x	-	-
W	Reel	18.5	350	MKP1840310405W	x	x	-	-
V	Reel	18.5	500	MKP1840522255V	-	x	x	-
G	Ammo	18.5	L <sup>(2)</sup>	MKP1840522255G	-	-	x	-
-	Bulk	-	-	MKP1840547255	x	x	x	x

**Notes**

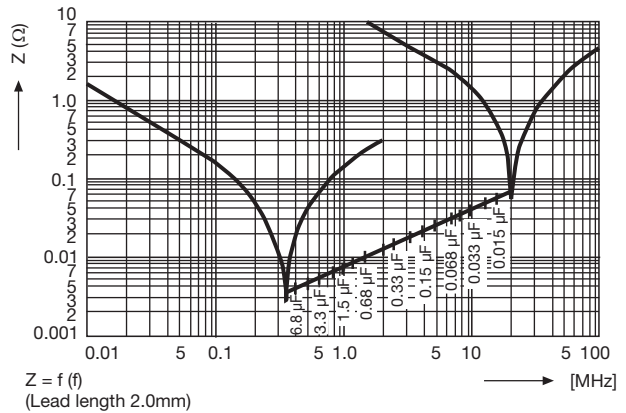
- <sup>(1)</sup> S = box size 55 mm x 210 mm x 340 mm (w x h x l)
- <sup>(2)</sup> L = box size 60 mm x 360 mm x 510 mm (w x h x l)



**PERMISSIBLE AC VOLTAGE VS. FREQUENCY**



**IMPEDANCE VS. FREQUENCY**





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