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MKP 1841

Vishay Roederstein

Metallized Polypropylene Film Capacitor
Related Document: IEC 60384-16, CECC 31 200

MAIN APPLICATIONS:
High voltage, high current and high pulse operations, deflection circuits in TV sets (S-correction and fly-back tuning). Protection circuits in SMPS's. Snubber and electronic ballast circuits. Input and output filtering in SPS designs, storage, timing and integrating circuits.

MARKING:
Manufacturer's logo/type/C-value/rated voltage/tolerance/ date of manufacture

DIELECTRIC:
Polypropylene film

ELECTRODES:
Vacuum deposited aluminum

COATING:
Flame retardant plasitc case (UL-class 94 V-0), blue, epoxy resin sealed
Flame class B according to IEC 60065 available on request

CONSTRUCTION:
Extended double-sided metallized polyester film, internal series connection (630 VDC/400 VAC to 2000 VDC), double-sided metallized polyester carrier film (refer to general information)

LEADS:
Tinned wire

IEC TEST CLASSIFICATION:
55/100/56, according to IEC 60068

OPERATING TEMPERATURE RANGE:
- 55°C to + 100°C

CAPACITANCE RANGE:
470pF to 6.8µF

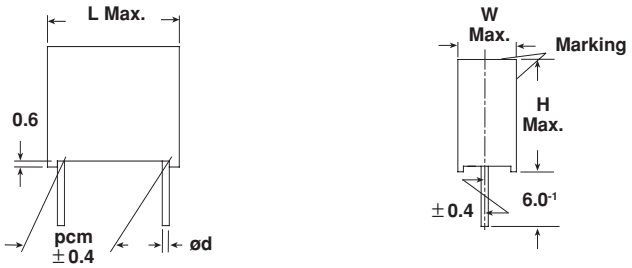
CAPACITANCE TOLERANCES:
± 20% (M), ± 10% (K), ± 5% (J)

RATED VOLTAGES (U_R):
160 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC, 1600 VDC, 2000 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz:
100 VAC, 160 VAC, 220 VAC, 250 VAC, 400 VAC, 600 VAC, 650 VAC, 700 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE)
1.6 x U_R for 2 s

Dimensions in millimeters



PCM	W	Ø d
7.5		0.6
10 - 37.5	< 16.0	0.8
10 - 37.5	≥ 16.0	1.0

INSULATION RESISTANCE:
Measured at 100 VDC after one minute

For C ≤ 0.33µF:
100,000 MΩ minimum value (150,000 MΩ typical value)

TIME CONSTANT:
Measured at 100 VDC after one minute

For C > 0.33µF:
30,000 s minimum value (50,000 s typical value)

TEMPERATURE COEFFICIENT:
- 250 x 10^{-6}/°C (typical value)

CAPACITANCE DRIFT:
Up to + 40°C, ± 0.5% for a period of two years

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 2mm long leads

PULL TEST ON LEADS:
≥ 30 N in direction of leads according to IEC 60068-2-21

RELIABILITY:
Operational life > 300,000 h
Failure rate < 2 FIT (40°C and 0.5 x U_R)

For further details, please refer to the general information provided in this catalog.

MAXIMUM PULSE RISE TIME

PCM	Maximum pulse rise time d_v/d_t [V/µs]						
(mm)	160 VDC	250 VDC	400 VDC	630 VDC	1000 VDC	1600 VDC	2000 VDC
7.5	1800	2200	3600	4500	—	—	—
10	820	1140	1840	2280	—	—	—
15	410	560	910	3430	6600	11,100	20,300
22.5	260	320	520	2120	2800	3800	6200
27.5	202	240	400	1524	2000	2680	4200
37.5	140	170	280	980	1280	1690	2600

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

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DISSIPATION FACTOR TAN δ

MEASURED AT	C ≤ 0.1µF	0.1µF < C ≤ 1.0µF	C > 1.0µF
1kHz	0.3×10^{-3}	0.3×10^{-3}	0.3×10^{-3}
10kHz	0.4×10^{-3}	0.5×10^{-3}	—
100kHz	1.5×10^{-3}	—	—
	Maximum value		

CAPACI-TANCE	CAPACI-TANCE CODE	VOLTAGE CODE 16 160 VDC/ 100 VAC				VOLTAGE CODE 25 250 VDC/ 160 VAC				VOLTAGE CODE 40 400 VDC/ 220 VAC				VOLTAGE CODE 63 630 VDC/ 250 VAC			
		W	H	L	PCM	W	H	L	PCM	W	H	L	PCM	W	H	L	PCM
470 pF	- 147	—	—	—	—	—	—	—	—	—	—	—	—	4.5	9.5	10.0	7.5
680 pF	- 168	—	—	—	—	—	—	—	—	—	—	—	—	3.0	8.5	10.0	7.5
1000 pF	- 210	—	—	—	—	—	—	—	—	—	—	—	—	3.0	8.5	10.0	7.5
1500 pF	- 215	—	—	—	—	—	—	—	—	—	—	—	—	3.0	8.5	10.0	7.5
2200 pF	- 222	—	—	—	—	—	—	—	—	—	—	—	—	3.0	8.5	10.0	7.5
3300 pF	- 233	—	—	—	—	—	—	—	—	—	—	—	—	4.0	9.0	10.0	7.5
4700 pF	- 247	—	—	—	—	—	—	—	—	4.5	9.5	10.0	7.5	—	—	—	—
6800 pF	- 268	—	—	—	—	4.0	9.0	10.0	7.5	5.0	10.5	10.3	7.5	—	—	—	—
0.01 µF	- 310	4.0	9.0	10.0	7.5	4.5	9.5	10.0	7.5	4.5	9.5	13.0	10	—	—	—	—
0.015 µF	- 315	5.0	10.5	10.3	7.5	4.5	9.5	10.0	7.5	5.5	10.5	13.0	10	—	—	—	—
0.022 µF	- 322	4.0	9.0	13.0	10	4.5	9.5	13.0	10	6.5	11.5	13.0	10	—	—	—	—
0.033 µF	- 333	4.5	9.5	13.0	10	5.5	10.5	13.0	10	5.5	10.5	18.0	15	—	—	—	—
0.047 µF	- 347	5.5	10.5	13.0	10	6.5	11.5	13.0	10	6.5	12.5	18.0	15	—	—	—	—
0.068 µF	- 368	6.5	11.5	13.0	10	5.5	10.5	18.0	15	7.5	13.5	18.0	15	—	—	—	—
0.10 µF	- 410	5.5	10.5	18.0	15	6.5	12.5	18.0	15	8.5	14.5	18.0	15	—	—	—	—
0.15 µF	- 415	6.5	12.5	18.0	15	7.5	13.5	18.0	15	8.5	16.5	26.5	22.5	—	—	—	—
0.22 µF	- 422	7.5	13.5	18.0	15	8.5	17.5	18.0	15	10.5	18.5	26.5	22.5	—	—	—	—
0.33 µF	- 433	8.5	17.5	18.0	15	8.5	16.5	26.5	22.5	11.0	21.0	26.5	22.5	—	—	—	—
0.47 µF	- 447	8.5	16.5	26.5	22.5	10.5	18.5	26.5	22.5	13.5	23.5	31.5	27.5	—	—	—	—
0.68 µF	- 468	9.0	17.0	26.5	22.5	11.0	21.0	26.5	22.5	15.0	24.5	31.5	27.5	—	—	—	—
1.0 µF	- 510	11.0	21.0	26.5	22.5	11.5	20.5	31.5	27.5	14.5	24.5	41.5	37.5	—	—	—	—
1.5 µF	- 515	13.5	23.5	31.5	27.5	15.0	24.5	31.5	27.5	18.0	32.5	41.5	37.5	—	—	—	—
2.2 µF	- 522	15.0	24.5	31.5	27.5	16.5	29.5	31.5	27.5	20.0	40.0	42.5	37.5	—	—	—	—
3.3 µF	- 533	18.0	33.0	31.5	27.5	20.0	35.0	31.5	27.5	—	—	—	—	—	—	—	—
4.7 µF	- 547	18.0	32.5	41.5	37.5	20.0	40.0	42.5	37.5	—	—	—	—	—	—	—	—
6.8 µF	- 568	20.0	40.0	42.5	37.5	—	—	—	—	—	—	—	—	—	—	—	—

Further C-values upon request

RECOMMENDED PACKAGING

LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	PCM 7.5 - 10	PCM 15	PCM 22.5 - 27.5	PCM 37.5
D	AMMO	16.5	S*	MKP 1841-310-405-D	X	X	—	—
G	AMMO	18.5	S*	MKP 1841-310-405-G	X	X	—	—
F	REEL	16.5	350	MKP 1841-310-405-F	X	X	—	—
W	REEL	18.5	350	MKP 1841-310-405-W	X	X	—	—
V	REEL	18.5	500	MKP 1841-522-165-V	—	X	X	—
G	AMMO	18.5	L*	MKP 1841-522-165-G	—	—	X	—
—	BULK	—	—	MKP 1841-547-255	X	X	X	X

*S = box size 55 x 210 x 340mm (W x H x L)
*L = box size 60 x 510 x 360mm (W x H x L)

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Metallized Polypropylene, Related Document: IEC 60384-16, CECC 31 200

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 63 630 VDC/ 400 VAC				VOLTAGE CODE 10 1000 VDC/ 600VAC				VOLTAGE CODE 13 1600 VDC/ 650 VAC				VOLTAGE CODE 20 2000 VDC/ 700 VAC			
		W	H	L	PCM	W	H	L	PCM	W	H	L	PCM	W	H	L	PCM
470 pF	- 147	—	—	—	—	—	—	—	—	—	—	—	—	5.5	10.5	18.0	15
680 pF	- 168	—	—	—	—	—	—	—	—	—	—	—	—	5.5	10.5	18.0	15
1000 pF	- 210	—	—	—	—	—	—	—	—	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5
1500 pF	- 215	—	—	—	—	—	—	—		5.5	10.5	18.0	15	6.5	14.5	26.5	22.5
2200 pF	- 222	—	—	—	—	5.5	10.5	18.0	15	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5
3300 pF	- 233	—	—	—	—	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5
4700 pF	- 247	5.5	10.5	18.0	15	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5
6800 pF	- 268	5.5	10.5	18.0	15	7.5	13.5	18.0	15	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5
0.010 µF	- 310	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5	10.5	18.5	26.5	22.5
0.015 µF	- 315	6.5	12.5	18.0	15	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5	9.0	18.5	31.5	27.5
0.022 µF	- 322	7.5	13.5	18.0	15	7.5	15.5	26.5	22.5	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5
0.033 µF	- 333	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5	9.0	18.5	31.5	27.5	13.5	23.5	31.5	27.5
0.047 µF	- 347	8.5	16.5	26.5	22.5	9.0	18.5	31.5	27.5	11.5	20.5	31.5	27.5	12.5	22.5	41.5	37.5
0.068 µF	- 368	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	12.5	22.5	41.5	37.5	14.5	24.5	41.5	37.5
0.10 µF	- 410	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5	14.5	24.5	41.5	37.5	16.0	28.5	41.5	37.5
0.15 µF	- 415	13.5	23.5	31.5	27.5	12.5	22.5	41.5	37.5	16.0	28.5	41.5	37.5	—	—	—	—
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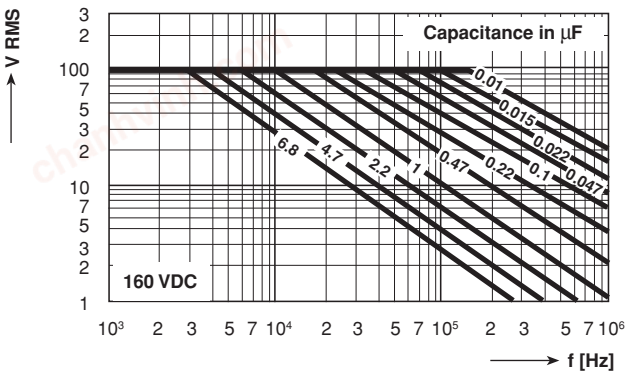
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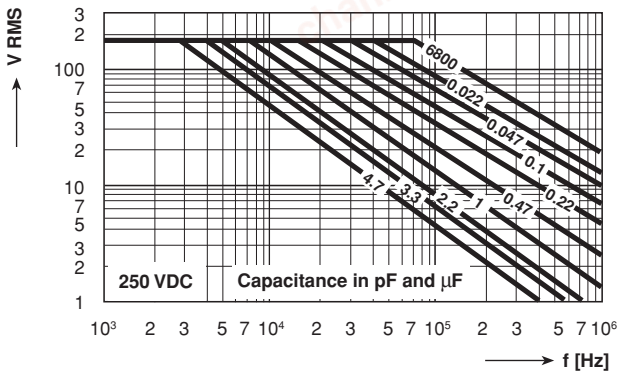
LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (MM)	REEL DIAMETER (MM)	ORDERING CODE EXAMPLE	PCM 15	PCM 22.5 - 27.5	PCM 37.5
D	AMMO	16.5	S*	MKP 1841-315/635-D	X	—	—
G	AMMO	18.5	S*	MKP 1841-315/635-G	X	—	—
F	REEL	16.5	350	MKP 1841-315/635-F	X	—	—
W	REEL	18.5	350	MKP 1841-315/635-W	X	—	—
V	REEL	18.5	500	MKP 1841-410/105-V	X	X	—
G	AMMO	18.5	L*	MKP 1841-410/105-G	—	X	—
—	BULK	—	—	MKP 1841-447/105	X	X	X

*S = box size 55 x 210 x 340mm (W x H x L)
*L = box size 60 x 510 x 360mm (W x H x L)

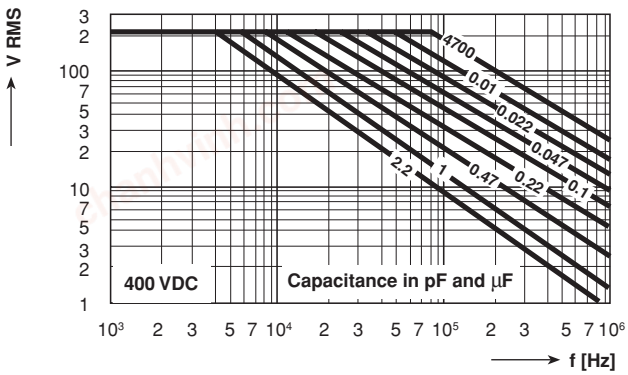
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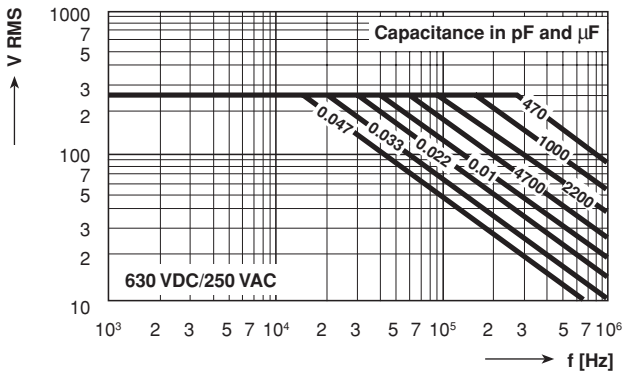
Permissible AC Voltage versus Frequency



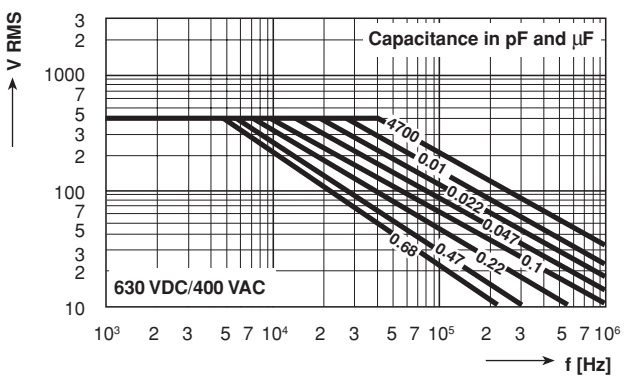
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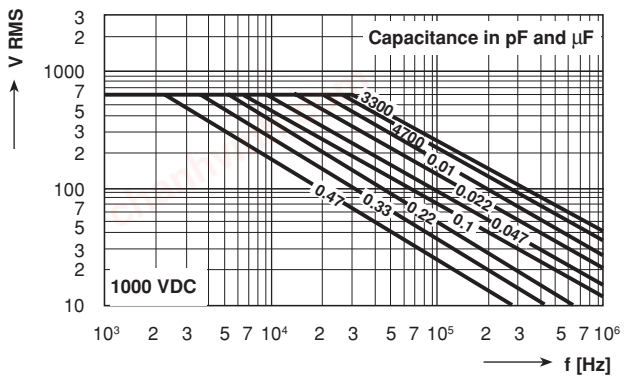
Permissible AC Voltage versus Frequency



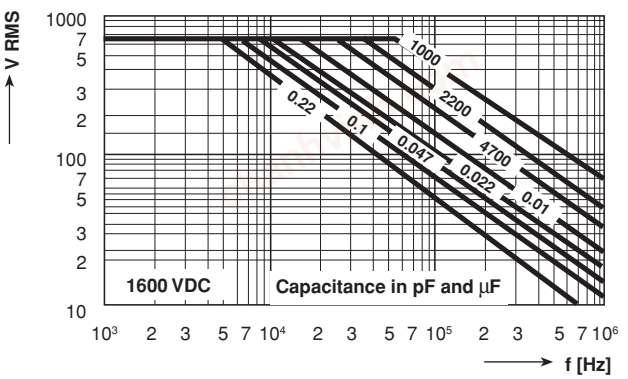
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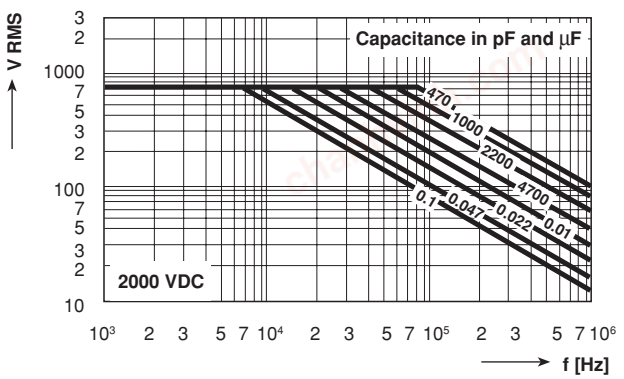
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