Metallized Polypropylene Film Capacitor
Related Document: IEC 60384-16

MAIN APPLICATIONS:
Pulse operations, deflection circuits in TV sets (S-correction), SMPS and thyristor circuits, storage, filter, timing and sample and hold circuits.

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

DIELECTRIC:
Polypropylene film

ELECTRODES:
Vacuum deposited aluminum

COATING:
Plastic-wrapped, epoxy resin sealed

CONSTRUCTION:
Extended metallized 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:
1000pF to 10μF

CAPACITANCE TOLERANCES:
± 10% (K), ± 5% (J), ± 2.5% (H), ± 1% (F)
± 1% only up to maximum body diameter of 14.5 x 31.5mm

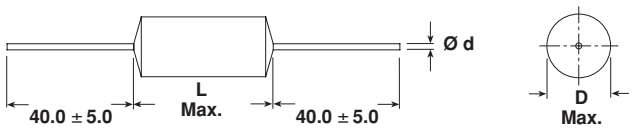
RATED VOLTAGES (U_R):
160 VDC, 250 VDC, 400 VDC, 630 VDC

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

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

INSULATION RESISTANCE:
Measured at 100 VDC after one minute
For C ≤ 0.33μF:
100,000 MΩ minimum value

Dimensions in millimeters



d	D	L
0.6	≤ 9.0	≤ 19.0
0.8	< 16.5	>26.5
1.0	≥ 16.5	≥ 26.5

TIME CONSTANT:
Measured at 100 VDC for one minute
For C > 0.33μF:
30,000 s minimum 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:
~ 12 nH measured with 6mm long leads

PULL TEST ON LEADS:
≥ 20 N in direction of leads according to IEC 60068-2-21

BEND TEST ON LEADS:
2 bends through 90° with half of the force used in pull test

DIELECTRIC ABSORPTION:
0.05% (typical value) according to IEC 60384-1

RELIABILITY:
Operational life > 300,000 h
Failure rate < 5 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

CAPACITOR LENGTH (mm)	Maximum pulse rise time d_v/d_t [V/μs]			
	160 VDC	250 VDC	400 VDC	630 VDC
11	240	300	515	700
14	175	220	380	510
19	100	125	200	280
26.5	60	75	120	160
31.5	45	60	95	120
41.5	30	40	65	85

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

DISSIPATION FACTOR TAN δ

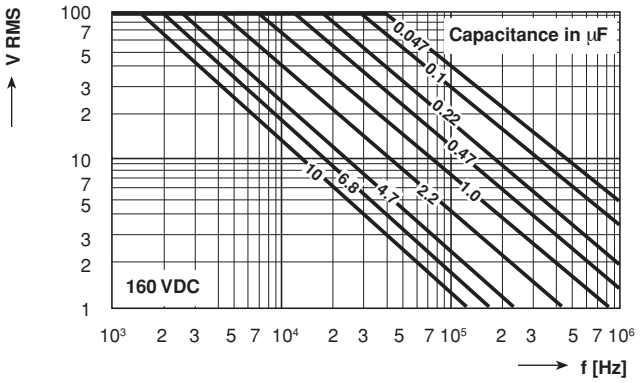
MEASURED AT	C ≤ 0.1µF	0.1µF < C ≤ 1.0µF	C > 1.0µF
1kHz	0.4 x 10^{-3}	0.4 x 10^{-3}	1 x 10^{-3}
10kHz	0.6 x 10^{-3}	0.6 x 10^{-3}	—
100kHz	4 x 10^{-3}	—	—
	Maximum values		

CAPACITANCE	CAPACITANCE 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*	
		D	L	D	L	D	L	D	L
1000 pF	- 210	—	—	—	—	—	—	5.0	11.0
1500 pF	- 215	—	—	—	—	—	—	5.0	11.0
2200 pF	- 222	—	—	—	—	—	—	5.0	11.0
3300 pF	- 233	—	—	—	—	—	—	5.0	11.0
4700 pF	- 247	—	—	—	—	—	—	5.0	11.0
6800 pF	- 268	—	—	—	—	5.0	11.0	5.5	11.0
0.01 µF	- 310	—	—	5.0	11.0	5.5	11.0	5.5	14.0
0.015 µF	- 315	—	—	5.0	11.0	6.0	11.0	6.5	14.0
0.022 µF	- 322	—	—	5.0	11.0	6.5	14.0	7.5	14.0
0.033 µF	- 333	5.0	11.0	5.5	11.0	7.0	14.0	7.0	19.0
0.047 µF	- 347	5.5	11.0	6.0	14.0	8.0	14.0	8.0	19.0
0.068 µF	- 368	6.0	11.0	6.5	14.0	8.5	19.0	9.0	19.0
0.1 µF	- 410	6.5	14.0	7.5	14.0	9.0	19.0	8.5	26.5
0.15 µF	- 415	7.5	14.0	7.0	19.0	8.0	26.5	10.5	26.5
0.22 µF	- 422	7.0	19.0	8.5	19.0	9.5	26.5	12.0	26.5
0.33 µF	- 433	8.0	19.0	8.0	26.5	11.5	26.5	14.5	26.5
0.47 µF	- 447	9.0	19.0	9.0	26.5	13.5	26.5	15.0	31.5
0.68 µF	- 468	8.5	26.5	11.0	26.5	14.0	31.5	18.0	31.5
1.0 µF	- 510	10.5	26.5	12.5	26.5	17.0	31.5	18.0	41.5
1.5 µF	- 515	12.0	26.5	13.0	31.5	20.5	31.5	22.0	41.5
2.2 µF	- 522	13.0	31.5	16.0	31.5	21.0	41.5	—	—
3.3 µF	- 533	15.5	31.5	19.0	31.5	—	—	—	—
4.7 µF	- 547	15.5	41.5	19.5	41.5	—	—	—	—
6.8 µF	- 568	18.5	41.5	23.0	41.5	—	—	—	—
10.0 µF	- 610	22.0	41.5	—	—	—	—	—	—

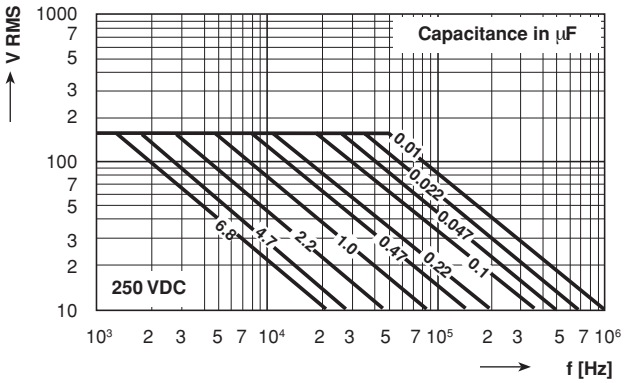
Further C-values upon request
PCM = L + 3.5mm
*Not suitable for mains applications.
Please refer to X-capacitors in our catalog “RFI Suppression Components”.

RECOMMENDED PACKAGING

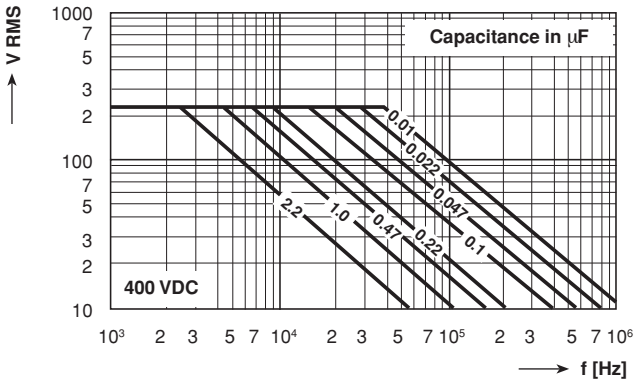
LETTER CODE	TYPE OF PACKAGING	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	
G	AMMO	—	MKP 1839-422-403-G	X
R	REEL	350	MKP 1839-422-403-R	X
—	BULK for L > 31.5mm	—	MKP 1839-522-403	X



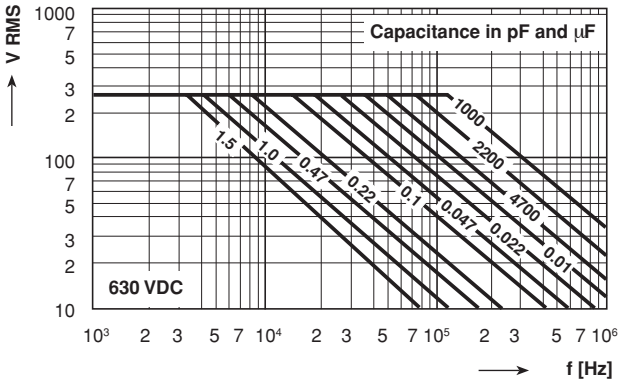
Permissible AC Voltage versus Frequency



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