

## Metallized Polypropylene Film Capacitor

### Related Document: IEC 60 384-16

#### 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 plastic case (UL-class 94 V-0), blue, epoxy resin sealed

#### CONSTRUCTION:

Extended double-sided metallized polyester film, internal series connection, single-sided metallized polypropylene 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 0.68μF

#### CAPACITANCE TOLERANCES:

± 20% (M), ± 10% (K), ± 5% (J)

#### RATED VOLTAGES (U<sub>R</sub>):

630 VDC, 1000 VDC, 1600 VDC, 2000 VDC

#### PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz:

400 VAC, 600 VAC, 650 VAC, 700 VAC

#### TEST VOLTAGE (ELECTRODE/ELECTRODE):

1.6 x U<sub>R</sub> for 2 s

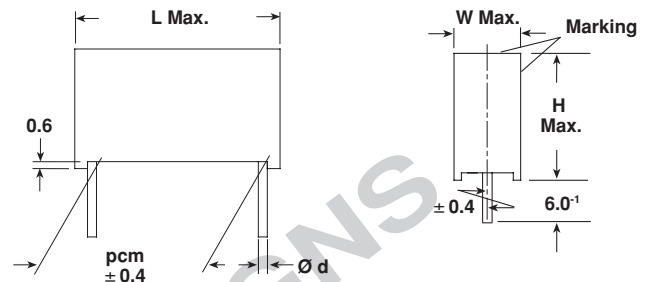
#### INSULATION RESISTANCE:

Measured at 100 VDC after one minute

#### For C ≤ 0.33μF:

100,000 MΩ minimum value

Dimensions in millimeters



W	Ø d
< 16.0	0.8
≥ 16.0	1.0

#### TIME CONSTANT:

Measured at 100 VDC after one minute

#### For C > 0.33μF:

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

#### DERATING FOR DC AND AC.

#### CATEGORY VOLTAGE U<sub>C</sub>:

At + 85°C: U<sub>C</sub> = 1.0 U<sub>R</sub>

At + 100°C: U<sub>C</sub> = 0.7 U<sub>R</sub>

#### 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 < 5 FIT (40°C and 0.5 x U<sub>R</sub>)

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

#### MAXIMUM PULSE RISE TIME

PCM (mm)	Maximum pulse rise time d <sub>v</sub> /d <sub>t</sub> [V/μs]			
	630 VDC	1000 VDC	1600 VDC	2000 VDC
15	3430	6600	11100	—
22.5	2120	2800	3800	6200
27.5	1524	2000	2680	4200
37.5	980	1280	1690	2600

If the maximum pulse voltage is less than the rated voltage higher d<sub>v</sub>/d<sub>t</sub> values can be permitted.

## DISSIPATION FACTOR TAN $\delta$

MEASURED AT	$C \leq 0.1\mu\text{F}$	$0.1\mu\text{F} < C \leq 1.0\mu\text{F}$
1kHz	$0.3 \times 10^{-3}$	$0.3 \times 10^{-3}$
10kHz	$0.4 \times 10^{-3}$	$0.4 \times 10^{-3}$
100kHz	$1.5 \times 10^{-3}$	—
Maximum values		

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 63 630 VDC/ 400 VAC				VOLTAGE CODE 10 1000 VDC/ 600 VAC				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
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	6.5	14.5	26.5	22.5
3300 pF	- 233	—	—	—	—	5.5	10.5	18.0	15	6.5	12.5	18.0	15	6.5	14.5	26.5	22.5
4700 pF	- 247	—	—	—	—	5.5	10.5	18.0	15	7.5	13.5	18.0	15	6.5	14.5	26.5	22.5
6800 pF	- 268	5.5	10.5	18.0	15	6.5	12.5	18.0	15	8.5	14.5	18.0	15	7.5	15.5	26.5	22.5
0.01 $\mu\text{F}$	- 310	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5	8.5	16.5	26.5	22.5
0.015 $\mu\text{F}$	- 315	6.5	12.5	18.0	15	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5
0.022 $\mu\text{F}$	- 322	7.5	13.5	18.0	15	6.5	14.5	26.5	22.5	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5
0.033 $\mu\text{F}$	- 333	8.5	14.5	18.0	15	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5	13.5	23.5	31.5	27.5
0.047 $\mu\text{F}$	- 347	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5
0.068 $\mu\text{F}$	- 368	8.5	16.5	26.5	22.5	11.0	21.0	26.5	22.5	11.5	20.5	31.5	27.5	16.5	29.5	31.5	27.5
0.1 $\mu\text{F}$	- 410	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5	16.0	28.5	41.5	37.5
0.15 $\mu\text{F}$	- 415	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5	14.5	24.5	41.5	37.5	—	—	—	—
0.22 $\mu\text{F}$	- 422	13.5	23.5	31.5	27.5	16.5	29.5	31.5	27.5	16.0	28.5	41.5	37.5	—	—	—	—
0.33 $\mu\text{F}$	- 433	15.0	24.5	31.5	27.5	—	—	—	—	—	—	—	—	—	—	—	—
0.47 $\mu\text{F}$	- 447	14.5	24.5	41.5	37.5	—	—	—	—	—	—	—	—	—	—	—	—
0.68 $\mu\text{F}$	- 468	18.0	32.5	41.5	37.5	—	—	—	—	—	—	—	—	—	—	—	—

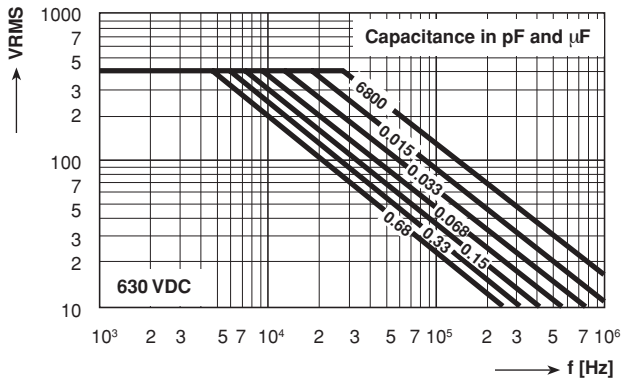
Further C-values upon request.

## RECOMMENDED PACKAGING

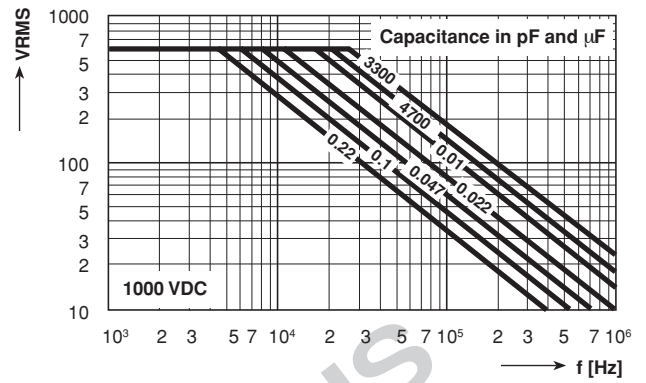
LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	PCM 15	PCM 22.5 - 27.5	PCM 37.5
D	AMMO	16.5	S*	MKP 1846-310/635-D	X	—	—
G	AMMO	18.5	S*	MKP 1846-310/635-G	X	—	—
F	REEL	16.5	350	MKP 1846-310/635-F	X	—	—
W	REEL	18.5	350	MKP 1846-310/635-W	X	—	—
V	REEL	18.5	500	MKP 1846-410/105-V	X	X	—
G	AMMO	18.5	L*	MKP 1846-410/105-G	—	X	—
—	BULK	—	—	MKP 1846-422-135	X	X	X

\*S = box size 55 x 210 x 340mm (W x H x L)

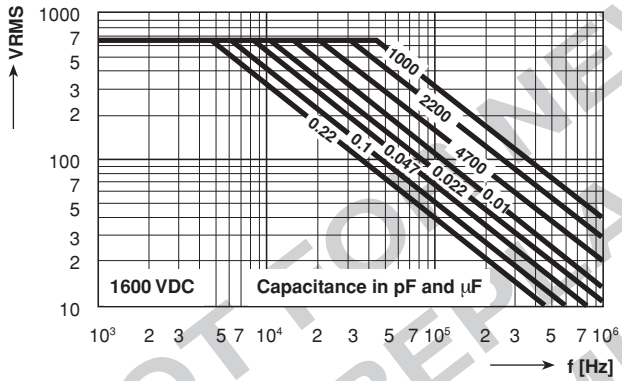
\*L = box size 60 x 360 x 510mm (W x H x L)



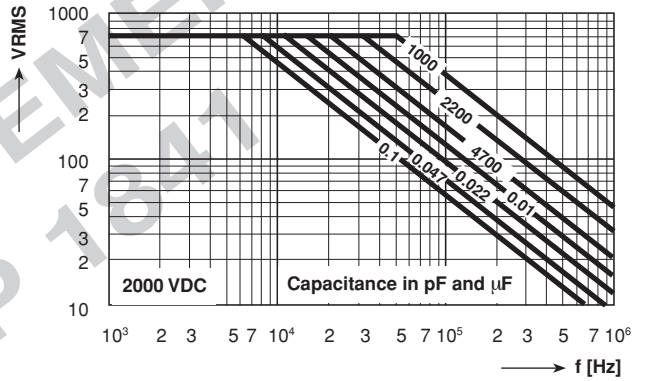
Permissible AC Voltage versus Frequency



Permissible AC Voltage versus Frequency



Permissible AC Voltage versus Frequency



Permissible AC Voltage versus Frequency