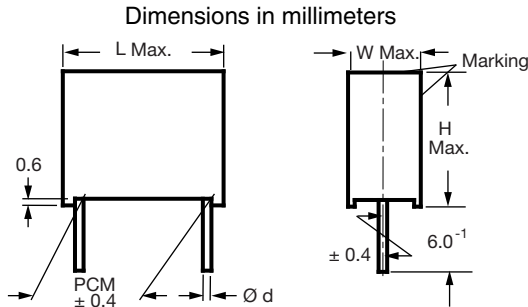


## Metallized Polypropylene Film Capacitor Related Document: IEC 60384-16



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

### 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), epoxy resin sealed.

### CONSTRUCTION

Extended double-sided metallized polyester film, internal series connection (630 V<sub>DC</sub>/400 V<sub>AC</sub> to 2000 V<sub>DC</sub>), double-sided metallized polyester carrier film

### LEADS

Tinned wire

### IEC TEST CLASSIFICATION

55/100/56, according to IEC 60068

### OPERATING TEMPERATURE RANGE

- 55 °C to + 100 °C

### CAPACITANCE RANGE

470 pF to 6.8 µF

### CAPACITANCE TOLERANCES

± 20 % (M), ± 10 % (K), ± 5 % (J)

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

160 V<sub>DC</sub>, 250 V<sub>DC</sub>, 400 V<sub>DC</sub>, 630 V<sub>DC</sub>, 1000 V<sub>DC</sub>, 1600 V<sub>DC</sub>, 2000 V<sub>DC</sub>

### FEATURES

- Compliant to RoHS directive 2002/95/EC



**RoHS  
COMPLIANT**

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

100 V<sub>AC</sub>, 160 V<sub>AC</sub>, 220 V<sub>AC</sub>, 250 V<sub>AC</sub>, 400 V<sub>AC</sub>, 600 V<sub>AC</sub>, 650 V<sub>AC</sub>, 700 V<sub>AC</sub>

### TEST VOLTAGE (ELECTRODE/ELECTRODE)

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

### INSULATION RESISTANCE

Measured at 100 V<sub>DC</sub> after one minute

**For C ≤ 0.33 µF:**

100 000 MΩ minimum value (150 000 MΩ typical value)

### TIME CONSTANT

Measured at 100 V<sub>DC</sub> after one minute

**For C > 0.33 µF:**

30 000 s minimum value (50 000 s typical 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 2 mm 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<sub>R</sub>)

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

## MAXIMUM PULSE RISE TIME

PCM (mm)	Maximum Pulse Rise Time dV/dt [V/μs]						
	160 V <sub>DC</sub>	250 V <sub>DC</sub>	400 V <sub>DC</sub>	630 V <sub>DC</sub>	1000 V <sub>DC</sub>	1600 V <sub>DC</sub>	2000 V <sub>DC</sub>
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

### Note

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

## DISSIPATION FACTOR TAN δ

MEASURED AT	C ≤ 0.1 μF	0.1 μF < C ≤ 1.0 μF	C > 1.0 μF
1 kHz	0.3 x 10 <sup>-3</sup>	0.3 x 10 <sup>-3</sup>	0.3 x 10 <sup>-3</sup>
10 kHz	0.4 x 10 <sup>-3</sup>	0.5 x 10 <sup>-3</sup>	-
100 kHz	1.5 x 10 <sup>-3</sup>	-	-
Maximum values			

CAP.	CAP. CODE	VOLTAGE CODE 16 160 V <sub>DC</sub> /100 V <sub>AC</sub>				VOLTAGE CODE 25 250 V <sub>DC</sub> /160 V <sub>AC</sub>				VOLTAGE CODE 40 400 V <sub>DC</sub> /220 V <sub>AC</sub>				VOLTAGE CODE 63 630 V <sub>DC</sub> /250 V <sub>AC</sub>			
		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	11.0	21.0	31.0	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	-	-	-	-	-	-	-	-	-	-	-	-

### Note

- Further C-values upon request

**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>	MKP 1841-310-405-D	X	X	-	-
G	Ammo	18.5	S <sup>(1)</sup>	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 <sup>(2)</sup>	MKP 1841-522-165-G	-	-	X	-
-	Bulk	-	-	MKP 1841-547-255	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 510 mm x 360 mm (W x H x L)

CAP.	CAP. CODE	VOLTAGE CODE 63 630 V <sub>DC</sub> /400 V <sub>AC</sub>				VOLTAGE CODE 10 1000 V <sub>DC</sub> /600V <sub>AC</sub>				VOLTAGE CODE 13 1600 V <sub>DC</sub> /650 V <sub>AC</sub>				VOLTAGE CODE 20 2000 V <sub>DC</sub> /700 V <sub>AC</sub>			
		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	11.0	21.0	31.0	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	11.0	21.0	31.0	27.5	12.5	22.5	41.5	37.5
0.068 µF	- 368	10.5	18.5	26.5	22.5	11.0	21.0	31.0	27.5	12.5	22.5	41.5	37.5	14.5	24.5	41.5	37.5
0.10 µF	- 410	11.0	21.0	31.0	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	-	-	-	-
0.22 µF	- 422	12.5	22.5	41.5	37.5	14.5	24.5	41.5	37.5	18.0	32.5	41.5	37.5	-	-	-	-
0.33 µF	- 433	14.5	24.5	41.5	37.5	16.0	28.5	41.5	37.5	-	-	-	-	-	-	-	-
0.47 µF	- 447	16.0	28.5	41.5	37.5	20.0	40.0	42.5	37.5	-	-	-	-	-	-	-	-
0.68 µF	- 468	20.0	40.0	42.5	37.5	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

- Further C-values upon request

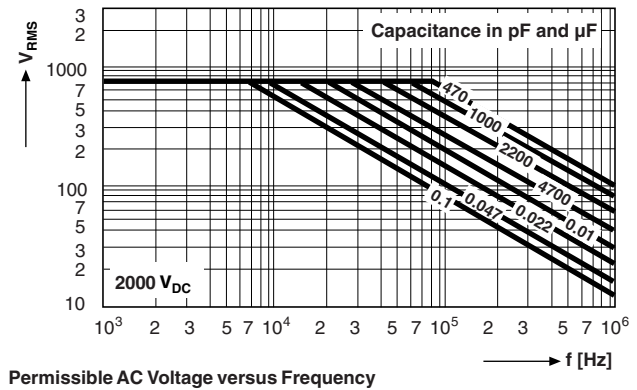
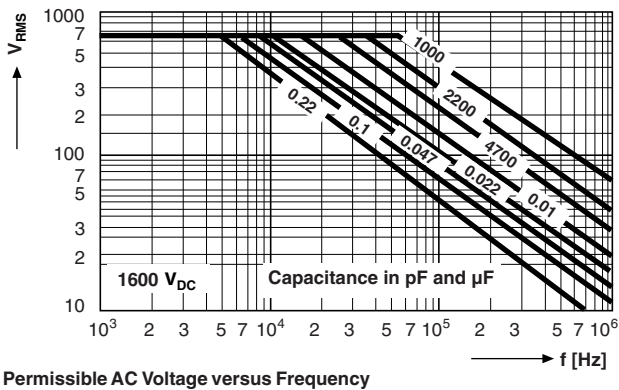
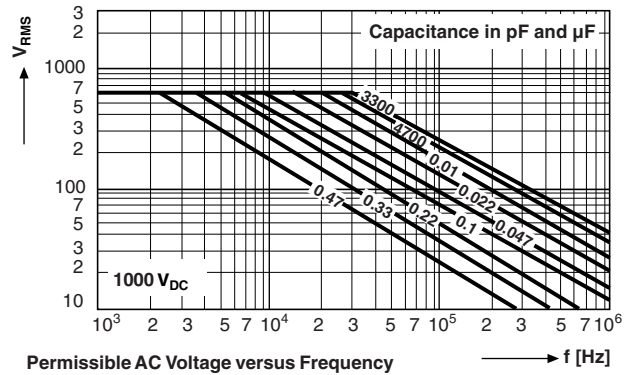
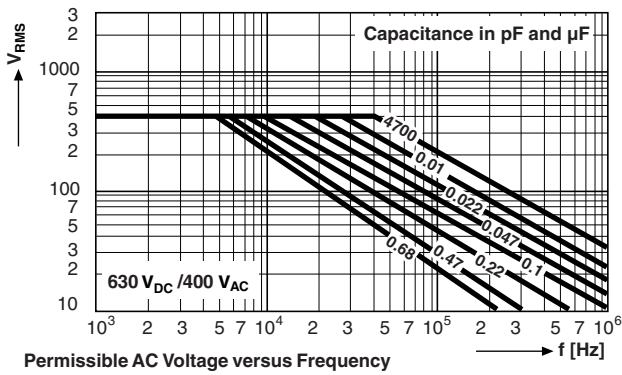
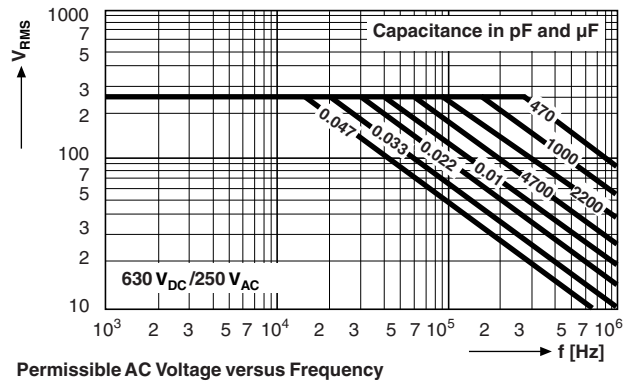
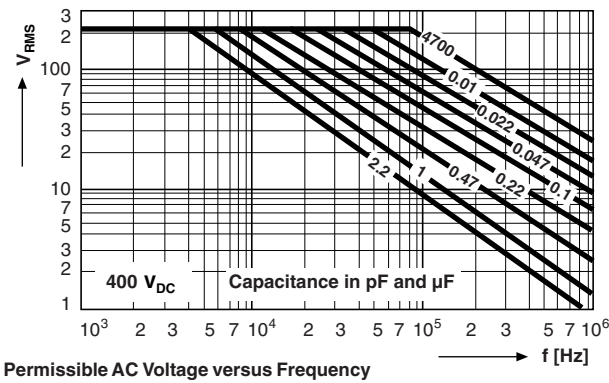
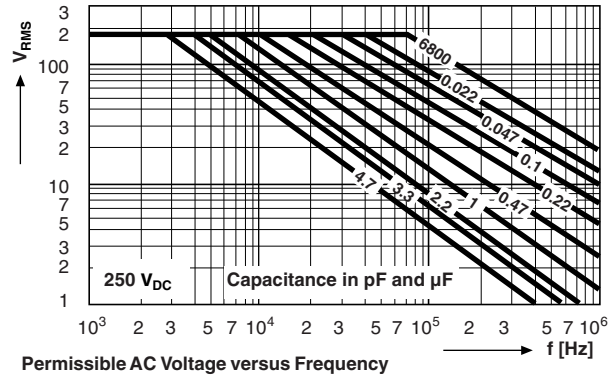
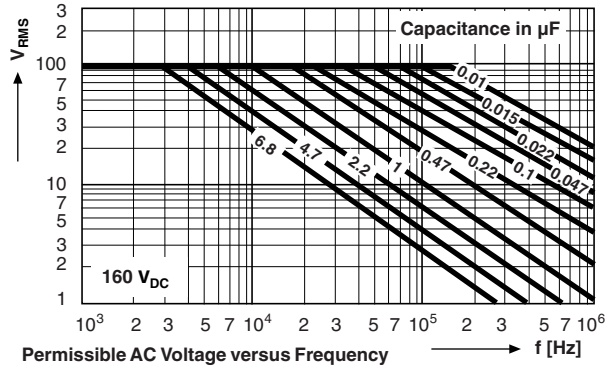
**RECOMMENDED PACKAGING**

LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	PCM 15	PCM 22.5 to 27.5	PCM 37.5
D	Ammo	16.5	S <sup>(1)</sup>	MKP 1841-315/635-D	X	-	-
G	Ammo	18.5	S <sup>(1)</sup>	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 <sup>(2)</sup>	MKP 1841-410/105-G	-	X	-
-	Bulk	-	-	MKP 1841-447/105	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 510 mm x 360 mm (W x H x L)





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