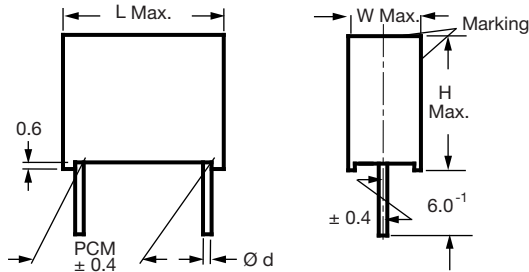


## Polypropylene Film Capacitors

### Related Document: IEC 60384-17 Grade 1.2

Dimensions in millimeters



W	Ø d
≥ 16	1.0
< 16.0	0.8

#### MAIN APPLICATIONS

High voltage, very high current and high pulse operations, deflection circuits in TV sets (fly-back tuning). Electronic ballasts, protection circuits in SMPS's. Snubber and SCR commutating circuits.

#### MARKING

Manufacturer's logo, type, C-value, rated voltage, tolerance, data of manufacture

#### DIELECTRIC

Polypropylene film

#### ELECTRODES

Aluminum foil

#### COATING

Flame retardant plastic case (UL-class 94 V-0), epoxy resin sealed.

#### CONSTRUCTION

Extended aluminum foil, internal series connection, double-sided metallized, polyester carrier film

#### INSULATION RESISTANCE

Measured at 500 V<sub>DC</sub> after one minute  
100 000 MΩ minimum value, (1000 GΩ typical value)

#### FEATURES

- Compliant to RoHS directive 2002/95/EC

#### LEADS

Tinned wire

#### IEC TEST CLASSIFICATION

55/100/56 according to IEC 60068

#### OPERATING TEMPERATURE RANGE

- 55 °C to + 100 °C

#### CAPACITANCE RANGE

100 pF to 0.22 µF

#### CAPACITANCE TOLERANCES

± 10 % (K), ± 5 % (J)

#### RATED VOLTAGES

630 V<sub>DC</sub>, 1000 V<sub>DC</sub>, 1250 V<sub>DC</sub>, 1600 V<sub>DC</sub>, 2000 V<sub>DC</sub>

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

300 V<sub>AC</sub>, 350 V<sub>AC</sub>, 400 V<sub>AC</sub>, 500 V<sub>AC</sub>, 600 V<sub>AC</sub>

#### TEST VOLTAGES (ELECTRODE/ELECTRODE)

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

#### 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 UC

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 < 1 FIT (0.5 x U<sub>R</sub> and 40 °C)

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



**RoHS**  
COMPLIANT

**MAXIMUM PULSE RISE TIME**

PCM (mm)	Maximum Pulse Rise Time dV/dt [V/μs]				
	630 V <sub>DC</sub>	1000 V <sub>DC</sub>	1250 V <sub>DC</sub>	1600 V <sub>DC</sub>	2000 V <sub>DC</sub>
15	6500	8200	11 100	13 900	13 900
22.5	2600	3200	4600	6000	9800
27.5	1800	2300	3100	4000	6000
37.5	1200	1500	1900	2400	3500

**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	C > 1.0 μF
1 kHz	0.3 x 10 <sup>-3</sup>	0.3 x 10 <sup>-3</sup>
10 kHz	0.4 x 10 <sup>-3</sup>	0.4 x 10 <sup>-3</sup>
100 kHz	1 x 10 <sup>-3</sup>	-
Maximum values		

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 63 630 V <sub>DC</sub> /300 V <sub>AC</sub>				VOLTAGE CODE 10 1000 V <sub>DC</sub> /350 V <sub>AC</sub>				VOLTAGE CODE 12 1250 V <sub>DC</sub> /400 V <sub>AC</sub>			
		W	H	L	PCM	W	H	L	PCM	W	H	L	PCM
100 pF	-110	-	-	-	-	-	-	-	-	-	-	-	-
150 pF	-115	-	-	-	-	-	-	-	-	-	-	-	-
220 pF	-122	-	-	-	-	-	-	-	-	-	-	-	-
330 pF	-133	-	-	-	-	-	-	-	-	-	-	-	-
470 pF	-147	-	-	-	-	-	-	-	-	-	-	-	-
680 pF	-168	-	-	-	-	-	-	-	-	-	-	-	-
1000 pF	-210	-	-	-	-	-	-	-	-	-	-	-	-
1200 pF	-212	-	-	-	-	-	-	-	-	5.5	10.5	18.0	15
1500 pF	-215	-	-	-	-	-	-	-	-	5.5	10.5	18.0	15
1800 pF	-218	-	-	-	-	5.5	10.5	18.0	15	6.5	12.5	18.0	15
2200 pF	-222	-	-	-	-	5.5	10.5	18.0	15	6.5	12.5	18.0	15
2700 pF	-227	5.5	10.5	18.0	15	6.5	12.5	18.0	15	7.5	13.5	18.0	15
3300 pF	-233	5.5	10.5	18.0	15	6.5	12.5	18.0	15	7.5	13.5	18.0	15
3900 pF	-239	6.5	12.5	18.0	15	7.5	13.5	18.0	15	6.5	14.5	26.5	22.5
4700 pF	-247	6.5	12.5	18.0	15	7.5	13.5	18.0	15	6.5	14.5	26.5	22.5
5600 pF	-256	7.5	13.5	18.0	15	8.5	14.5	18.0	15	6.5	14.5	26.5	22.5
6800 pF	-268	7.5	13.5	18.0	15	8.5	14.5	18.0	15	6.5	14.5	26.5	22.5
8200 pF	-282	8.5	14.5	18.0	15	6.5	14.5	26.5	22.5	57.5	15.5	26.5	22.5
0.01 μF	-310	8.5	14.5	18.0	15	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5
0.012 μF	-312	8.5	17.5	18.0	15	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5
0.015 μF	-315	10.5	17.5	18.0	15	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5
0.018 μF	-318	7.5	15.5	26.5	22.5	8.5	16.5	26.5	22.5	11.0	21.0	26.5	22.5
0.022 μF	-322	7.5	15.5	26.5	22.5	8.5	16.5	26.5	22.5	11.0	21.0	26.5	22.5
0.027 μF	-327	8.5	16.5	26.5	22.5	10.5	18.5	26.5	22.5	11.0	21.0	31.0	27.5
0.033 μF	-333	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	11.0	21.0	31.0	27.5
0.039 μF	-339	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5
0.047 μF	-347	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5
0.056 μF	-356	11.5	20.5	31.5	27.5	12.5	22.5	41.5	37.5	12.5	23.5	41.5	37.5
0.068 μF	-368	11.5	20.5	31.5	27.5	12.5	22.5	41.5	37.5	12.5	22.5	41.5	37.5
0.082 μF	-382	11.5	20.5	31.5	27.5	12.5	22.5	41.5	37.5	14.5	24.5	41.5	37.5
0.1 μF	-410	13.5	23.5	31.5	27.5	14.5	24.5	41.5	37.5	14.5	24.5	41.5	37.5
0.12 μF	-412	12.5	22.5	41.5	37.5	14.5	24.5	41.5	37.5	16.0	28.5	41.5	37.5
0.15 μF	-415	12.5	22.5	41.5	37.5	16.0	28.5	41.5	37.5	16.0	28.5	41.5	37.5
0.18 μF	-418	14.5	24.5	41.5	37.5	16.0	28.5	41.5	37.5	20.0	40.0	42.5	37.5
0.22 μF	-422	14.5	24.5	41.5	37.5	18.0	32.5	41.5	37.5	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>	KP 1836-168/205-D	X	-	-
G	Ammo	18.5	S <sup>(1)</sup>	KP 1836-168/205-G	X	-	-
F	Reel	16.5	350	KP 1836-168/205-F	X	-	-
W	Reel	18.5	350	KP 1836-168/205-W	X	-	-
V	Reel	18.5	500	KP 1836-310/134-V	X	X	-
G	Ammo	18.5	L <sup>(2)</sup>	KP 1836-310/134-G	-	X	-
-	Bulk	-	-	KP 1836-310/134	X	X	X

**Note**

<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)

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 13 1600 V <sub>DC</sub> /500 V <sub>AC</sub>				VOLTAGE CODE 20 2000 V <sub>DC</sub> /600 V <sub>AC</sub>			
		W	H	L	PCM	W	H	L	PCM
100 pF	-110	-	-	-	-	5.5	10.5	18.0	15
150 pF	-115	-	-	-	-	5.5	10.5	18.0	15
220 pF	-122	-	-	-	-	5.5	10.5	18.0	15
330 pF	-133	-	-	-	-	5.5	10.5	18.0	15
470 pF	-147	-	-	-	-	5.5	10.5	18.0	15
680 pF	-168	5.5	10.5	18.0	15	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
1200 pF	-212	6.5	12.5	18.0	15	6.5	14.5	26.5	22.5
1500 pF	-215	6.5	12.5	18.0	15	6.5	14.5	26.5	22.5
1800 pF	-218	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5
2200 pF	-222	6.5	14.5	26.5	22.5	6.5	14.5	26.5	22.5
2700 pF	-227	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5
3300 pF	-233	6.5	14.5	26.5	22.5	7.5	15.5	26.5	22.5
3900 pF	-239	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5
4700 pF	-247	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5
5600 pF	-256	8.5	16.5	26.5	22.5	10.5	18.5	26.5	22.5
6800 pF	-268	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5
8200 pF	-282	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5
0.01 μF	-310	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5
0.012 μF	-312	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5
0.015 μF	-315	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5
0.018 μF	-318	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5
0.022 μF	-322	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5
0.027 μF	-327	13.5	23.5	31.5	27.5	14.5	24.5	41.5	37.5
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0.068 μF	-368	14.5	24.5	41.5	37.5	-	-	-	-
0.082 μF	-382	16.0	28.5	41.5	37.5	-	-	-	-
0.1 μF	-410	16.0	28.5	41.5	37.5	-	-	-	-
0.12 μF	-412	-	-	-	-	-	-	-	-
0.15 μF	-415	-	-	-	-	-	-	-	-
0.18 μF	-418	-	-	-	-	-	-	-	-
0.22 μF	-422	-	-	-	-	-	-	-	-

**Note**

- Further C-values upon request.

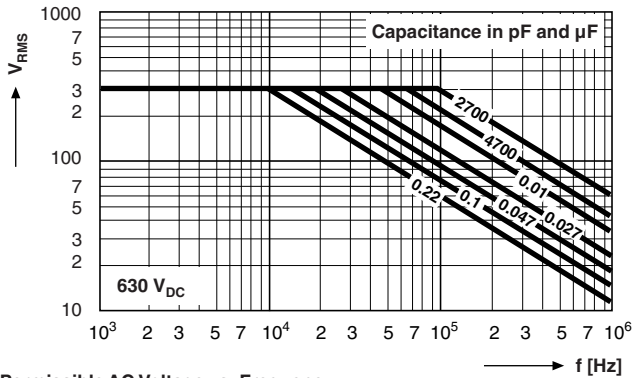
**RECOMMENDED PACKAGING**

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>	KP 1836-168/205-D	X	-	-
G	Ammo	18.5	S <sup>(1)</sup>	KP 1836-168/205-G	X	-	-
F	Reel	16.5	350	KP 1836-168/205-F	X	-	-
W	Reel	18.5	350	KP 1836-168/205-W	X	-	-
V	Reel	18.5	500	KP 1836-310/134-V	X	X	-
G	Ammo	18.5	L <sup>(2)</sup>	KP 1836-310/134-G	-	X	-
-	Bulk	-	-	KP 1836-310/134	X	X	X

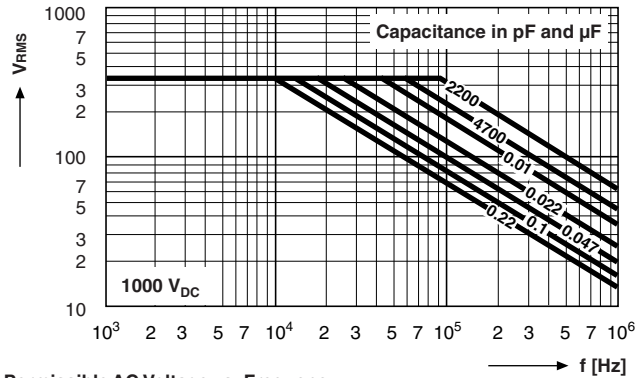
**Note**

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

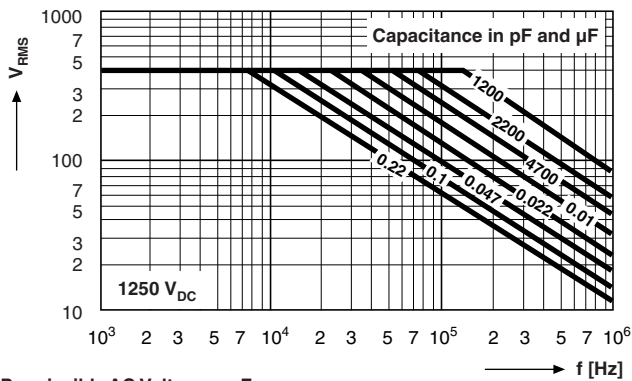
(2) L = box size 60 mm x 360 mm x 510 mm (W x H x L)



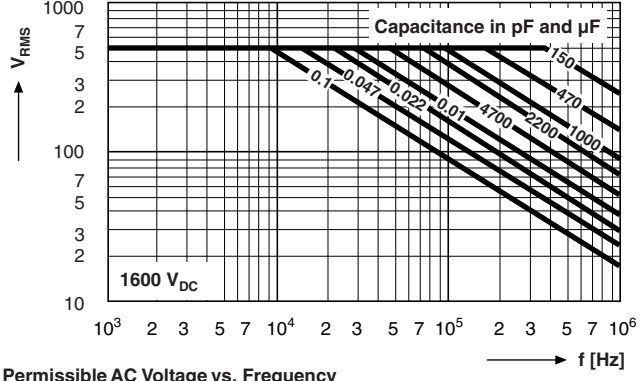
Permissible AC Voltage vs. Frequency



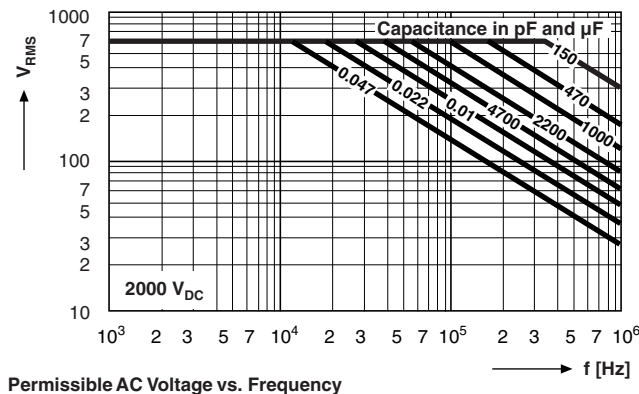
Permissible AC Voltage vs. Frequency



Permissible AC Voltage vs. Frequency



Permissible AC Voltage vs. Frequency



Permissible AC Voltage vs. Frequency



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