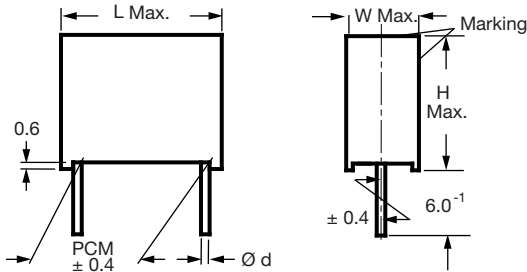


Polypropylene Film Capacitors

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_{DC} 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_{DC}, 1000 V_{DC}, 1250 V_{DC}, 1600 V_{DC}, 2000 V_{DC}

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60 Hz

300 V_{AC}, 350 V_{AC}, 400 V_{AC}, 500 V_{AC}, 600 V_{AC}

TEST VOLTAGES (ELECTRODE/ELECTRODE)

2 x U_R for 2 s

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 UC

At + 85 °C: U_C = 1.0 U_R
At + 100 °C: U_C = 0.7 U_R

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_R and 40 °C)

For further details, please refer to the general information available at www.vishay.com/doc?26033



RoHS
COMPLIANT

MAXIMUM PULSE RISE TIME

PCM (mm)	Maximum Pulse Rise Time dV/dt [V/μs]				
	630 V _{DC}	1000 V _{DC}	1250 V _{DC}	1600 V _{DC}	2000 V _{DC}
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 ⁻³	0.3 x 10 ⁻³
10 kHz	0.4 x 10 ⁻³	0.4 x 10 ⁻³
100 kHz	1 x 10 ⁻³	-
Maximum values		

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 63 630 V _{DC} /300 V _{AC}				VOLTAGE CODE 10 1000 V _{DC} /350 V _{AC}				VOLTAGE CODE 12 1250 V _{DC} /400 V _{AC}			
		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 ⁽¹⁾	KP 1836-168/205-D	X	-	-
G	Ammo	18.5	S ⁽¹⁾	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 ⁽²⁾	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)

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 13 1600 V _{DC} /500 V _{AC}				VOLTAGE CODE 20 2000 V _{DC} /600 V _{AC}			
		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
0.033 μF	-333	13.5	23.5	31.5	27.5	14.5	24.5	41.5	37.5
0.039 μF	-339	12.5	22.5	41.5	37.5	16.0	28.5	41.5	37.5
0.047 μF	-347	12.5	22.5	41.5	37.5	16.0	28.5	41.5	37.5
0.056 μF	-356	14.5	24.5	41.5	37.5	-	-	-	-
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

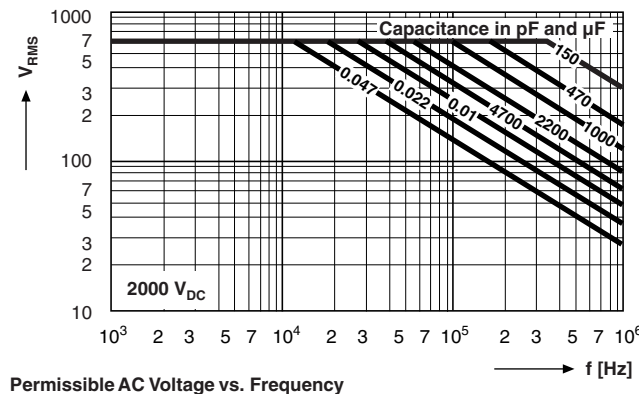
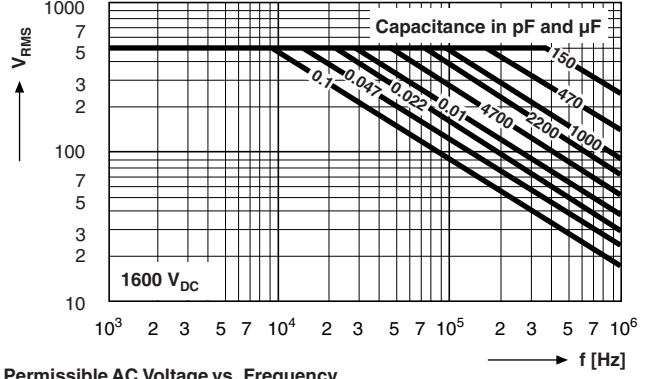
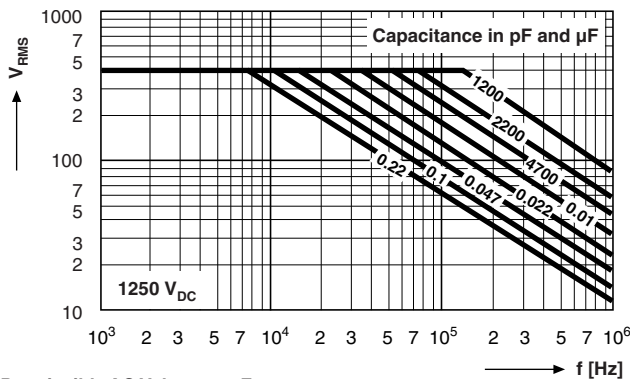
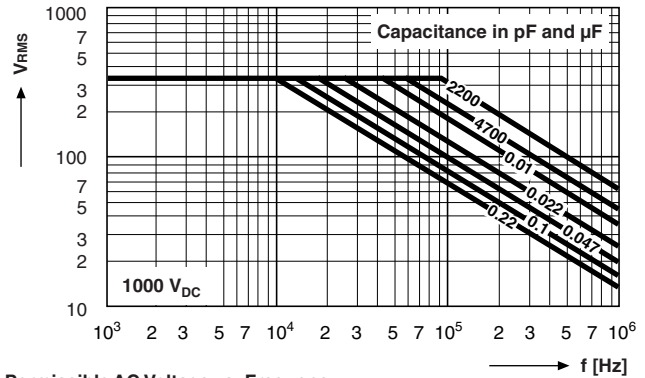
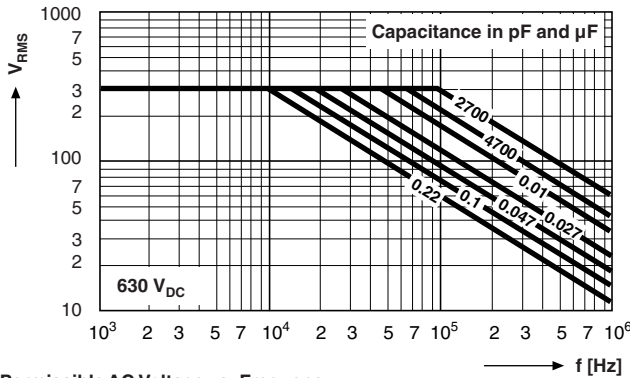
- Further C-values upon request.

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 ⁽¹⁾	KP 1836-168/205-D	X	-	-
G	Ammo	18.5	S ⁽¹⁾	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 ⁽²⁾	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)





Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.