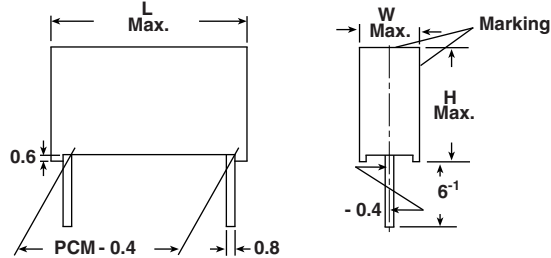


## Metallized Polyester Film Capacitor Related Document: IEC 60384-2

Dimensions in millimeters



### MAIN APPLICATIONS

Blocking, bypassing, filtering, timing, coupling and decoupling circuits, interference suppression in low voltage applications.

### MARKING

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

### DIELECTRIC

Polyester film

### ELECTRODES

Vacuum deposited aluminum

### COATING

Flame retardant plastic case (class UL 94 V-0)

### CONSTRUCTION

Extended metallized film

### LEADS

Tinned wire

### IEC TEST CLASSIFICATION

55/100/56, according to IEC 60068

### TEMPERATURE RANGE

- 55 °C to + 100 °C

### CAPACITANCE RANGE

1000 pF to 15  $\mu$ F

### CAPACITANCE TOLERANCES

$\pm 20\%$  (M),  $\pm 10\%$  (K),  $\pm 5\%$  (J)

### MAXIMUM PULSE RISE TIME $dV/dt$

PCM (mm)	Maximum Pulse Rise Time $dV/dt$ [V/ $\mu$ s]					
	63 V <sub>DC</sub>	100 V <sub>DC</sub>	250 V <sub>DC</sub>	400 V <sub>DC</sub>	630 V <sub>DC</sub>	1000 V <sub>DC</sub>
10	11	13	22	37	60	130
15	7	8	13	21	33	65
22.5	4	5	8	13	19	34
27.5	3	4	6	10	14	25

#### Note

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

### FEATURES

- Compliant to RoHS directive 2002/95/EC

### RATED VOLTAGES ( $U_R$ )

63 V<sub>DC</sub>, 100 V<sub>DC</sub>, 250 V<sub>DC</sub>, 400 V<sub>DC</sub>, 630 V<sub>DC</sub>, 1000 V<sub>DC</sub>

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

40 V<sub>AC</sub>, 63 V<sub>AC</sub>, 160 V<sub>AC</sub>, 200 V<sub>AC</sub>, 220 V<sub>AC</sub>

### TEST VOLTAGE (ELECTRODE/ELECTRODE)

1.6 x  $U_R$  for 2 s

### INSULATION RESISTANCE

Measured at 100 V<sub>DC</sub> (63 V<sub>DC</sub> series measured at 50 V<sub>DC</sub>) after one minute

For  $C \leq 0.33 \mu$ F and  $U_R > 100$  V<sub>DC</sub>:

30 000 M $\Omega$  minimum value (100 000 M $\Omega$  typical value)

For  $C \leq 0.33 \mu$ F and  $U_R \leq 100$  V<sub>DC</sub>:

15 000 M $\Omega$  minimum value (50 000 M $\Omega$  typical value)

### TIME CONSTANT

Measured at 100 V<sub>DC</sub> (63 V<sub>DC</sub> series measured at 50 V<sub>DC</sub>) after one minute

For  $C > 0.33 \mu$ F and  $U_R > 100$  V<sub>DC</sub>:

10 000 s minimum value (40 000 s typical value)

For  $C > 0.33 \mu$ F and  $U_R \leq 100$  V<sub>DC</sub>:

5000 s minimum value (15 000 s typical value)

### CAPACITANCE DRIFT

Up to + 40 °C,  $\pm 1.5\%$  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:  $U_C = 0.8 U_R$

### SELF INDUCTANCE

~ 6 nH measured with 2 mm long leads

### PULL TEST ON LEADS

$\geq 30$  N in direction of leads according to IEC 60068-2-21

### DISSIPATION FACTOR $\tan \delta$

MEASURED AT	$C \leq 0.1 \mu$ F	$0.1 \mu$ F < $C \leq 1.0 \mu$ F	$C > 1.0 \mu$ F
1 kHz	$8 \times 10^{-3}$	$8 \times 10^{-3}$	$10 \times 10^{-3}$
10 kHz	$15 \times 10^{-3}$	$15 \times 10^{-3}$	-
100 kHz	$25 \times 10^{-3}$	-	-
Maximum values			



**RoHS**  
COMPLIANT

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 06 63 V <sub>DC</sub> /40 V <sub>AC</sub>				VOLTAGE CODE 01 100 V <sub>DC</sub> /63 V <sub>AC</sub>				VOLTAGE CODE 25 250 V <sub>DC</sub> /160 V <sub>AC</sub>			
		W	H	L	PCM	W	H	L	PCM	W	H	L	PCM
1000 pF	-210	-	-	-	-	-	-	-	-	-	-	-	-
1500 pF	-215	-	-	-	-	-	-	-	-	-	-	-	-
2200 pF	-222	-	-	-	-	-	-	-	-	-	-	-	-
3300 pF	-233	-	-	-	-	-	-	-	-	-	-	-	-
4700 pF	-247	-	-	-	-	-	-	-	-	-	-	-	-
6800 pF	-268	-	-	-	-	-	-	-	-	-	-	-	-
0.01 μF	-310	-	-	-	-	-	-	-	-	-	-	-	-
0.015 μF	-315	-	-	-	-	-	-	-	-	-	-	-	-
0.022 μF	-322	-	-	-	-	-	-	-	-	-	-	-	-
0.033 μF	-333	-	-	-	-	-	-	-	-	4.0	9.0	13.0	10
0.047 μF	-347	-	-	-	-	-	-	-	-	4.0	9.0	13.0	10
0.068 μF	-368	-	-	-	-	4.0	9.0	13.0	10	4.5	9.5	13.0	10
0.1 μF	-410	-	-	-	-	4.0	9.0	13.0	10	5.5	10.5	18.0	15
0.15 μF	-415	-	-	-	-	4.0	9.0	13.0	10	5.5	10.5	18.0	15
0.22 μF	-422	4.0	9.0	13.0	10	4.5	9.5	13.0	10	5.5	10.5	18.0	15
0.33 μF	-433	4.0	9.0	13.0	10	5.5	10.5	18.0	15	6.5	12.5	18.0	15
0.47 μF	-447	5.5	10.5	13.0	10	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5
0.68 μF	-468	5.5	10.5	18.0	15	6.5	12.5	18.0	15	7.5	15.5	26.5	22.5
1.0 μF	-510	5.5	10.5	18.0	15	7.5	13.5	18.0	15	8.5	16.5	26.5	22.5
1.5 μF	-515	6.5	12.5	18.0	15	7.5	15.5	26.5	22.5	9.0	18.5	31.5	27.5
2.2 μF	-522	7.5	13.5	18.0	15	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5
3.3 μF	-533	7.5	15.5	26.5	22.5	10.5	18.5	26.5	22.5	13.5	23.5	31.5	27.5
4.7 μF	-547	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5	-	-	-	-
6.8 μF	-568	10.5	18.5	26.5	22.5	13.5	23.5	31.5	27.5	-	-	-	-
10.0 μF	-610	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5	-	-	-	-
15.0 μF	-615	13.5	23.5	31.5	27.5	16.5	29.5	31.5	27.5	-	-	-	-

**RECOMMENDED PACKAGING**

LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	PCM 10	PCM 15	PCM 22.5 to 27.5
D	Ammo	16.5	S <sup>(1)</sup>	MKT 1822-422-065-D	X	X	-
G	Ammo	18.5	S <sup>(1)</sup>	MKT 1822-422-065-G	X	X	-
F	Reel	16.5	350	MKT 1822-422-065-F	X	X	-
W	Reel	18.5	350	MKT 1822-422-065-W	X	X	-
V	Reel	18.5	500	MKT 1822-510-255-V	-	X	X
G	Ammo	18.5	L <sup>(2)</sup>	MKT 1822-510-255-G	-	-	X
-	Bulk	-	-	MKT 1822-510-255	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 360 mm x 510 mm (W x H x L)



CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 40 400 V <sub>DC</sub> /200 V <sub>AC</sub>				VOLTAGE CODE 63* 630 V <sub>DC</sub> /220 V <sub>AC</sub>				VOLTAGE CODE 10* 1000 V <sub>DC</sub> /220 V <sub>AC</sub>			
		W	H	L	PCM	W	H	L	PCM	W	H	L	PCM
1000 pF	-210	4.0	9.0	13.0	10	4.0	9.0	13.0	10	4.0	9.0	13.0	10
1500 pF	-215	4.0	9.0	13.0	10	4.0	9.0	13.0	10	4.0	9.0	13.0	10
2200 pF	-222	4.0	9.0	13.0	10	4.0	9.0	13.0	10	4.0	9.0	13.0	10
3300 pF	-233	4.0	9.0	13.0	10	4.0	9.0	13.0	10	4.0	9.0	13.0	10
4700 pF	-247	4.0	9.0	13.0	10	4.0	9.0	13.0	10	5.5	10.5	13.0	10
6800 pF	-268	4.0	9.0	13.0	10	4.0	9.0	13.0	10	6.5	11.5	13.0	10
0.01 μF	-310	4.0	9.0	13.0	10	4.0	9.0	13.0	10	5.5	10.5	18.0	15
0.015 μF	-315	4.0	9.0	13.0	10	5.5	10.5	13.0	10	6.5	12.5	18.0	15
0.022 μF	-322	4.0	9.0	13.0	10	6.5	11.5	13.0	10	7.5	13.5	18.0	15
0.033 μF	-333	4.0	9.0	13.0	10	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5
0.047 μF	-347	5.5	10.5	18.0	15	6.5	12.5	18.0	15	7.5	15.5	26.5	22.5
0.068 μF	-368	5.5	10.5	18.0	15	7.5	13.5	18.0	15	8.5	16.5	26.5	22.5
0.1 μF	-410	5.5	10.5	18.0	15	6.5	14.5	26.5	22.5	10.5	18.5	26.5	22.5
0.15 μF	-415	6.5	12.5	18.0	15	7.5	15.5	26.5	22.5	11.5	20.5	31.5	27.5
0.22 μF	-422	7.5	15.5	26.5	22.5	8.5	16.5	26.5	22.5	13.5	23.5	31.5	27.5
0.33 μF	-433	8.5	16.5	26.5	22.5	11.5	20.5	31.5	27.5	16.5	29.5	31.5	27.5
0.47 μF	-447	10.5	18.5	26.5	22.5	11.5	20.5	31.5	27.5	20.0	35.0	31.5	27.5
0.68 μF	-468	11.5	20.5	31.5	27.5	13.5	23.5	31.5	27.5	-	-	-	-
1.0 μF	-510	11.5	20.5	31.5	27.5	15.0	24.5	31.5	27.5	-	-	-	-
1.5 μF	-515	13.5	23.5	31.5	27.5	-	-	-	-	-	-	-	-
2.2 μF	-522	-	-	-	-	-	-	-	-	-	-	-	-
3.3 μF	-533	-	-	-	-	-	-	-	-	-	-	-	-
4.7 μF	-547	-	-	-	-	-	-	-	-	-	-	-	-
6.8 μF	-568	-	-	-	-	-	-	-	-	-	-	-	-
10.0 μF	-610	-	-	-	-	-	-	-	-	-	-	-	-
15.0 μF	-615	-	-	-	-	-	-	-	-	-	-	-	-

**Notes**

• Further C-values upon request.

\* Not suitable for mains applications.

Please refer to X-capacitors in our catalog "RFI Suppression Components"

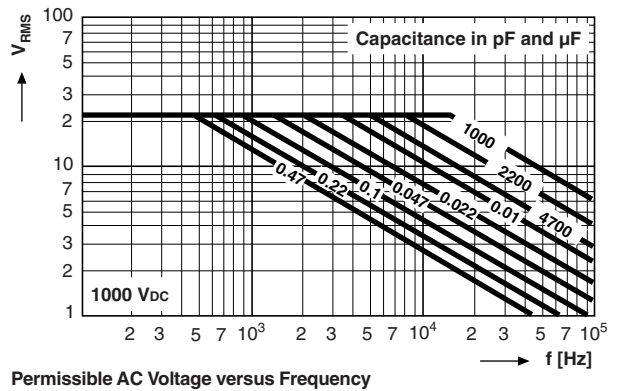
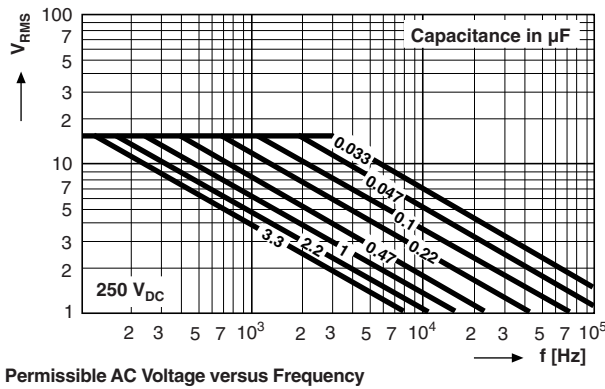
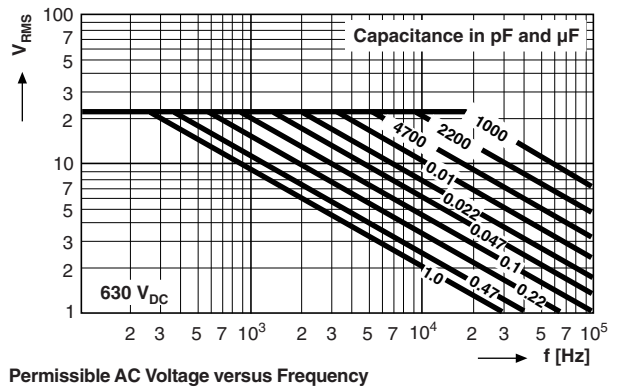
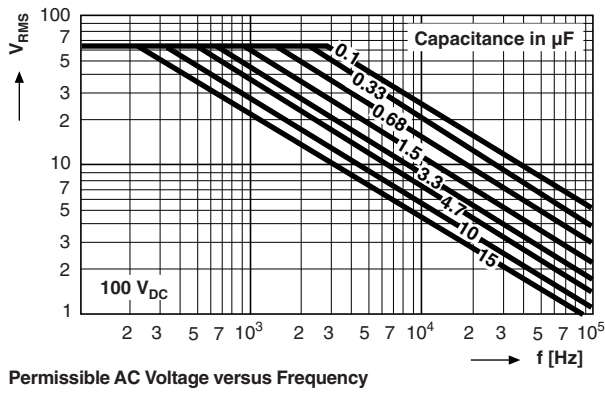
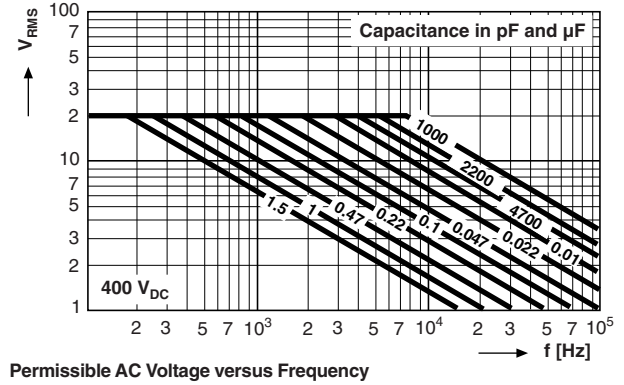
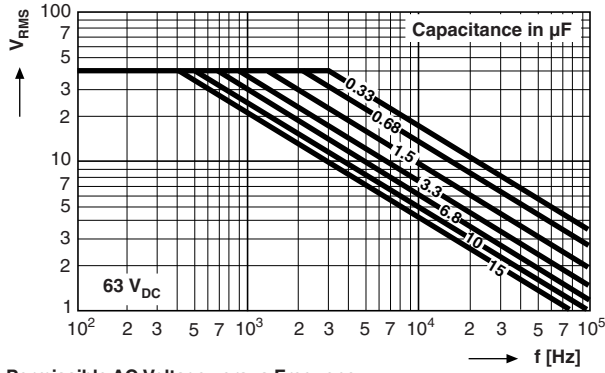
**RECOMMENDED PACKAGING**

LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	PCM 10	PCM 15	PCM 22.5 to 27.5
D	Ammo	16.5	S <sup>(1)</sup>	MKT 1822-422-065-D	X	X	-
G	Ammo	18.5	S <sup>(1)</sup>	MKT 1822-422-065-G	X	X	-
F	Reel	16.5	350	MKT 1822-422-065-F	X	X	-
W	Reel	18.5	350	MKT 1822-422-065-W	X	X	-
V	Reel	18.5	500	MKT 1822-510-255-V	-	X	X
G	Ammo	18.5	L <sup>(2)</sup>	MKT 1822-510-255-G	-	-	X
-	Bulk	-	-	MKT 1822-522-255	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 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.