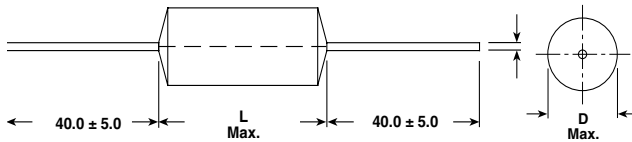


## Metallized Polyester Film Capacitor

### Related Document: IEC 60384-2

Dimensions in millimeters



d	D
0.6	≤ 5.0
0.7	> 5.0 ≤ 7.0
0.8	> 7.0 < 16.5
1.0	≥ 16.5

**MAIN APPLICATIONS**

Blocking, bypassing, filtering, timing, coupling and decoupling, 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**

Plastic-wrapped, epoxy resin sealed. Also available as flame retardant version.

**CONSTRUCTION**

Extended metallized 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**

470 pF to 22 μF

**CAPACITANCE TOLERANCES**

± 20 % (M), ± 10 % (K), ± 5 % (J)

**TEST VOLTAGE (ELECTRODE/ELECTRODE)**

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

**MAXIMUM PULSE RISE TIME**

CAPACITOR LENGTH (mm)	Maximum Pulse Rise Time d <sub>v</sub> /d <sub>t</sub> [V/μs]					
	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC
11	12	18	32	56	84	-
14	11	13	22	37	66	175
19	7	8	13	21	33	65
26.5	4	5	8	13	19	34
31.5	3	4	6	10	15	25
41.5	2	3	5	7	10	17

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

**FEATURES**

Focus Product

Product is completely lead (Pb)-free

Product is RoHS compliant



**RoHS**  
COMPLIANT

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

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC

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

40 VAC, 63 VAC, 160 VAC, 200 VAC, 220 VAC, 220 VAC

**INSULATION RESISTANCE**

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C ≤ 0.33 μF and U<sub>R</sub> > 100 VDC

30 000 MΩ minimum value (60 000 MΩ typical value)

For C ≤ 0.33 μF and U<sub>R</sub> ≤ 100 VDC

15 000 MΩ minimum value (50 000 MΩ typical value)

**TIME CONSTANT**

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C > 0.33 μF and U<sub>R</sub> > 100 VDC

10 000 s minimum value (20 000 s typical value)

For C > 0.33 μF and U<sub>R</sub> ≤ 100 VDC

5000 s minimum value (15 000 s typical value)

**CAPACITANCE DRIFT**

Up to + 40 °C, ± 1.5 % 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> = 0.8 U<sub>R</sub>

**SELF INDUCTANCE**

~ 12 nH measured with 6mm long leads

**PULL TEST ON LEADS**

≥ 20 N in direction of leads according to IEC 60068-2-21

**BEND TEST ON LEADS**

Two bends through 90 °C with half of the force used in pull test

**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).

**DISSIPATION FACTOR TAN  $\delta$**

MEASURED AT	C ≤ 0.1 μF	0.1 μF < C ≤ 1.0 μF	C > 1.0 μF
1 kHz	8 x 10 <sup>-3</sup>	8 x 10 <sup>-3</sup>	10 x 10 <sup>-3</sup>
10 kHz	15 x 10 <sup>-3</sup>	15 x 10 <sup>-3</sup>	-
100 kHz	25 x 10 <sup>-3</sup>	-	-
Maximum values			

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 06 63 VDC/ 40 VAC		VOLTAGE CODE 01 100 VDC/ 63 VAC		VOLTAGE CODE 25 250 VDC/ 160 VAC		VOLTAGE CODE 40 400 VDC/ 200 VAC		VOLTAGE CODE 63* 630 VDC/ 220 VAC		VOLTAGE CODE 10* 1000 VDC/ 220 VAC	
		D	L	D	L	D	L	D	L	D	L	D	L
470 pF	- 147	-	-	-	-	-	-	-	-	5.0	11.0	-	-
680 pF	- 168	-	-	-	-	-	-	-	-	5.0	11.0	-	-
1000 pF	- 210	-	-	-	-	-	-	-	-	5.0	11.0	5.5	14.0
1500 pF	- 215	-	-	-	-	-	-	-	-	5.0	11.0	6.0	14.0
2200 pF	- 222	-	-	-	-	-	-	-	-	5.0	11.0	6.0	14.0
3300 pF	- 233	-	-	-	-	-	-	-	-	5.0	11.0	7.0	14.0
4700 pF	- 247	-	-	-	-	-	-	-	-	5.0	11.0	6.0	19.0
6800 pF	- 268	-	-	-	-	-	-	5.0	11.0	6.0	14.0	6.0	19.0
0.01 μF	- 310	-	-	-	-	-	-	5.0	11.0	6.0	14.0	6.5	19.0
0.015 μF	- 315	-	-	-	-	5.0	11.0	6.0	14.0	6.5	14.0	7.5	19.0
0.022 μF	- 322	-	-	-	-	5.0	11.0	6.0	14.0	7.5	14.0	9.0	19.0
0.033 μF	- 333	-	-	-	-	5.0	11.0	6.0	14.0	6.5	19.0	10.5	19.0
0.047 μF	- 347	-	-	-	-	6.0	14.0	7.0	14.0	7.5	19.0	12.0	19.0
0.068 μF	- 368	-	-	5.0	11.0	6.0	14.0	8.0	14.0	8.5	19.0	11.0	26.5
0.1 μF	- 410	-	-	5.0	11.0	6.0	14.0	7.0	19.0	10.5	19.0	13.0	26.5
		-	-	-	-	-	-	-	-	9.5	19.0**	-	-
0.15 μF	- 415	5.0	11.0	5.5	11.0	7.0	14.0	8.5	19.0	10.0	26.5	13.5	31.5
0.22 μF	- 422	5.0	11.0	6.0	14.0	7.0	19.0	8.0	26.5	11.5	26.5	16.0	31.5
		-	-	-	-	-	-	8.0	19.0**	-	-	-	-
0.33 μF	- 433	6.0	14.0	6.0	19.0	8.0	19.0	9.5	26.5	13.5	26.5	16.0	41.5
		-	-	-	-	-	-	9.5	19.0**	-	-	-	-
0.47 μF	- 447	7.0	14.0	6.5	19.0	9.0	19.0	11.0	26.5	14.5	31.5	19.0	41.5
		-	-	-	-	-	-	-	-	14.0	26.5**	-	-
0.68 μF	- 468	6.5	19.0	7.0	19.0	8.5	26.5	11.5	31.5	14.5	41.5	-	-
		-	-	-	-	9.0	19.0**	-	-	-	-	-	-
1.0 μF	- 510	7.5	19.0	8.5	19.0	10.0	26.5	13.5	31.5	16.5	41.5	-	-



CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 06 63 VDC/ 40 VAC		VOLTAGE CODE 01 100 VDC/ 63 VAC		VOLTAGE CODE 25 250 VDC/ 160 VAC		VOLTAGE CODE 40 400 VDC/ 200 VAC		VOLTAGE CODE 63* 630 VDC/ 220 VAC		VOLTAGE CODE 10* 1000 VDC/ 220 VAC	
		D	L	D	L	D	L	D	L	D	L	D	L
1.5 µF	- 515	8.5	19.0	8.0	26.5	11.0	31.5	14.0	41.5	-	-	-	-
		-	-	8.0	19.0**	-	-	13.0	31.5**	-	-	-	-
2.2 µF	- 522	8.5	26.5	9.5	26.5	13.0	31.5	16.5	41.5	-	-	-	-
		7.5	19.0**	9.5	19.0**	-	-	-	-	-	-	-	-
3.3 µF	- 533	10.0	26.5	11.5	26.5	15.5	31.5	-	-	-	-	-	-
		8.5	19.0**	-	-	14.0	26.5**	-	-	-	-	-	-
4.7 µF	- 547	11.5	26.5	12.0	31.5	15.5	41.5	-	-	-	-	-	-
		-	-	-	-	14.5	31.5**	-	-	-	-	-	-
6.8 µF	- 568	12.0	31.5	14.0	31.5	17.5	41.5	-	-	-	-	-	-
10.0 µF	- 610	14.5	31.5	16.5	31.5	21.0	41.5	-	-	-	-	-	-
		-	-	13.5	31.5**	-	-	-	-	-	-	-	-
15.0 µF	- 615	18.0	31.5	20.5	31.5	-	-	-	-	-	-	-	-
22.0 µF	- 622	17.5	41.5	-	-	-	-	-	-	-	-	-	-

Further C-values upon request.

PCM = L + 3.5

\*Not suitable for mains applications. Please refer to X-capacitors in our catalog "RFI Suppression Capacitors".

\*\*For the smaller size please add - **M** at the end of the type designation (e.g. MKT 1813-510/255-M).

**RECOMMENDED PACKAGING**

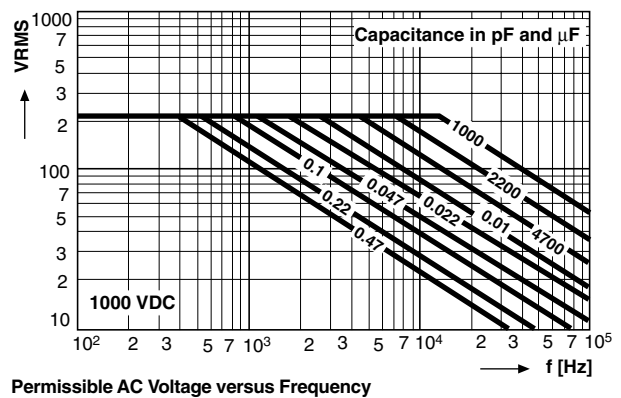
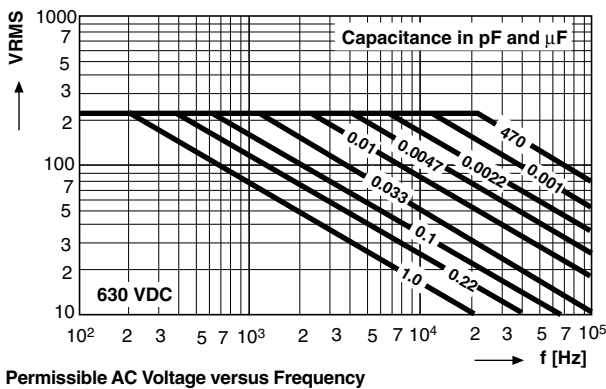
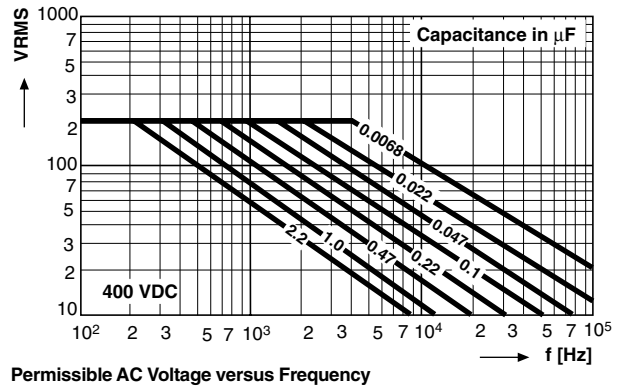
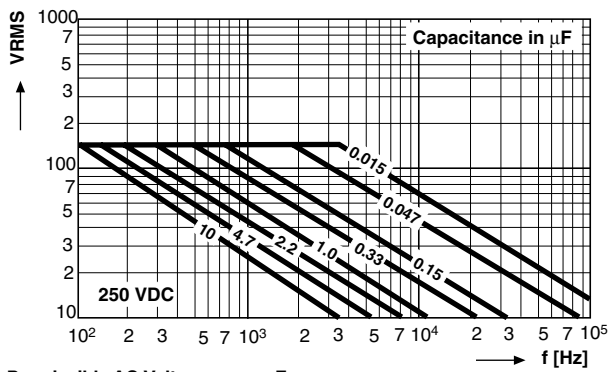
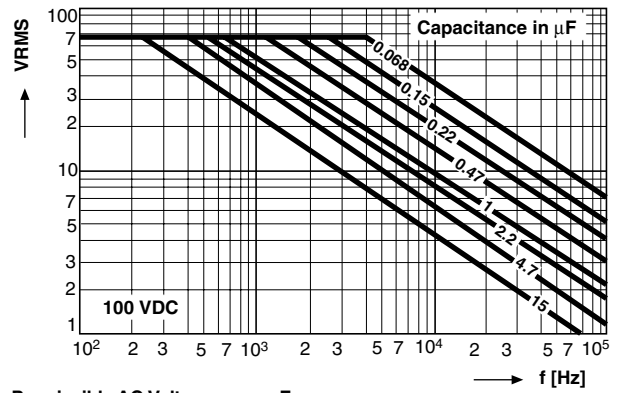
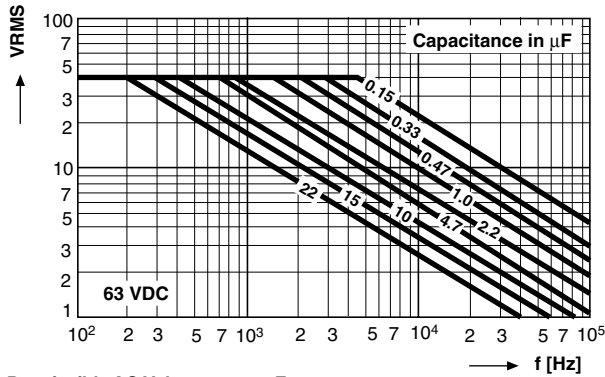
PACKAGING CODE	TYPE OF PACKAGING	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	
G	AMMO	-	MKT 1813-422-014-G	X
R	REEL	350	MKT 1813-422-014-R	X
-	BULK	-	MKT 1813-422-014	X

**Note:**

Attention: Capacitors with L > 31.5 mm only as bulk available!

**EXAMPLE OF ORDERING CODE**

TYPE	CAPACITANCE CODE	VOLTAGE CODE	TOLERANCE CODE*	PACKAGING CODE
MKT 1813	410	06	5	G
*Tolerance Codes: 4 = 5 % (J); 5 = 10 % (K); 6 = 20 % (M)				





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