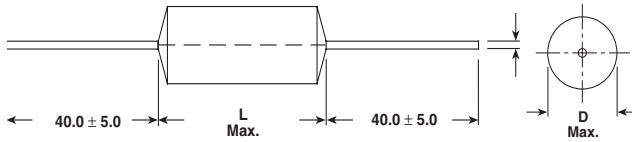


# Metallized Polyester Film Capacitor

## 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**

470pF to 22μF

**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**

Product is completely lead (Pb)-free  
Product is 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 60Hz**

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

**RoHS**  
COMPLIANT

**INSULATION RESISTANCE**

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

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

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

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

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

For C > 0.33μF 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**

~ 12nH 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	$C \leq 0.1\mu\text{F}$	$0.1\mu\text{F} < C \leq 1.0\mu\text{F}$	$C > 1.0\mu\text{F}$
1kHz	$8 \times 10^{-3}$	$8 \times 10^{-3}$	$10 \times 10^{-3}$
10kHz	$15 \times 10^{-3}$	$15 \times 10^{-3}$	—
100kHz	$25 \times 10^{-3}$	—	—
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
470pF	- 147	—	—	—	—	—	—	—	—	5.0	11.0	—	—
680pF	- 168	—	—	—	—	—	—	—	—	5.0	11.0	—	—
1000pF	- 210	—	—	—	—	—	—	—	—	5.0	11.0	5.5	14.0
1500pF	- 215	—	—	—	—	—	—	—	—	5.0	11.0	6.0	14.0
2200pF	- 222	—	—	—	—	—	—	—	—	5.0	11.0	6.0	14.0
3300pF	- 233	—	—	—	—	—	—	—	—	5.0	11.0	7.0	14.0
4700pF	- 247	—	—	—	—	—	—	—	—	5.0	11.0	6.0	19.0
6800pF	- 268	—	—	—	—	—	—	5.0	11.0	6.0	14.0	6.0	19.0
0.01 $\mu\text{F}$	- 310	—	—	—	—	—	—	5.0	11.0	6.0	14.0	6.5	19.0
0.015 $\mu\text{F}$	- 315	—	—	—	—	5.0	11.0	6.0	14.0	6.5	14.0	7.5	19.0
0.022 $\mu\text{F}$	- 322	—	—	—	—	5.0	11.0	6.0	14.0	7.5	14.0	9.0	19.0
0.033 $\mu\text{F}$	- 333	—	—	—	—	5.0	11.0	6.0	14.0	6.5	19.0	10.5	19.0
0.047 $\mu\text{F}$	- 347	—	—	—	—	6.0	14.0	7.0	14.0	7.5	19.0	12.0	19.0
0.068 $\mu\text{F}$	- 368	—	—	5.0	11.0	6.0	14.0	8.0	14.0	8.5	19.0	11.0	26.5
0.1 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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 $\mu\text{F}$	- 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
1.5µF	- 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**	—	—	—	—
2.2µF	- 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**	—	—	—	—	—	—	—	—
3.3µF	- 533	10.0	26.5	11.5	26.5	15.5	31.5	—	—	—	—	—	—
		8.5	19.0**	—	—	14.0	26.5**	—	—	—	—	—	—
4.7µF	- 547	11.5	26.5	12.0	31.5	15.5	41.5	—	—	—	—	—	—
		—	—	—	—	14.5	31.5**	—	—	—	—	—	—
6.8µF	- 568	12.0	31.5	14.0	31.5	17.5	41.5	—	—	—	—	—	—
10.0µF	- 610	14.5	31.5	16.5	31.5	21.0	41.5	—	—	—	—	—	—
		—	—	13.5	31.5**	—	—	—	—	—	—	—	—
15.0µF	- 615	18.0	31.5	20.5	31.5	—	—	—	—	—	—	—	—
22.0µF	- 622	17.5	41.5	—	—	—	—	—	—	—	—	—	—

Further C-values upon request.

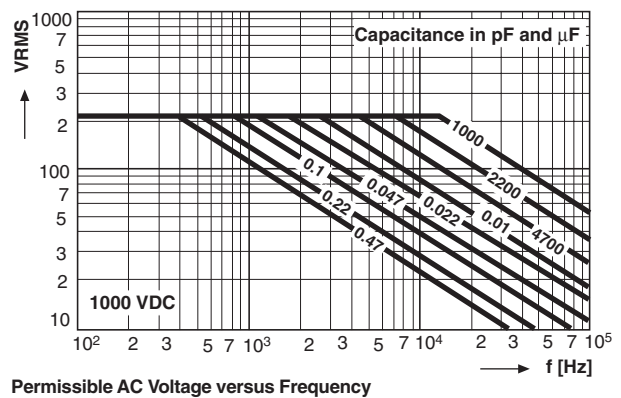
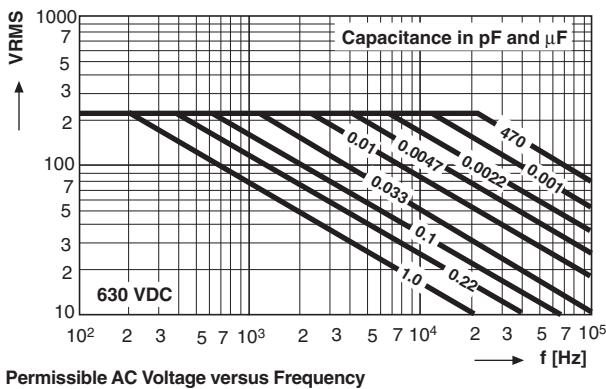
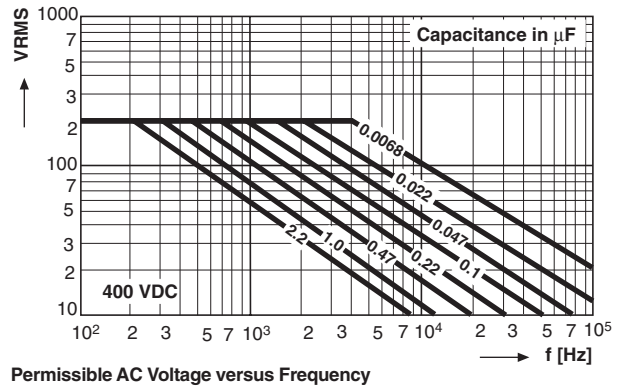
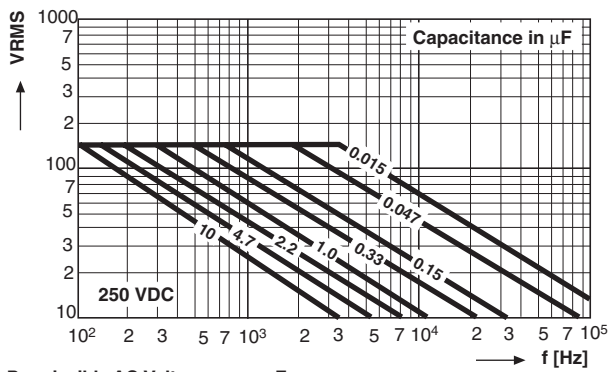
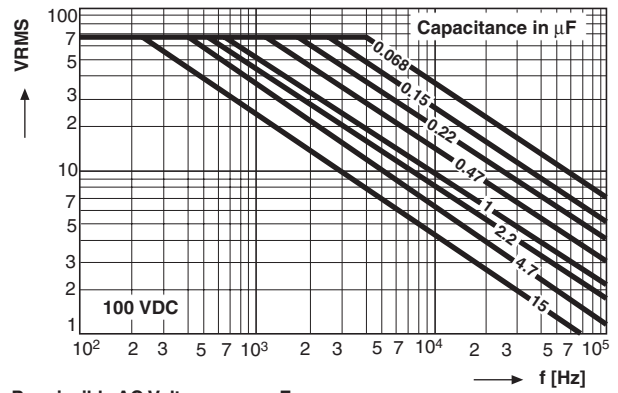
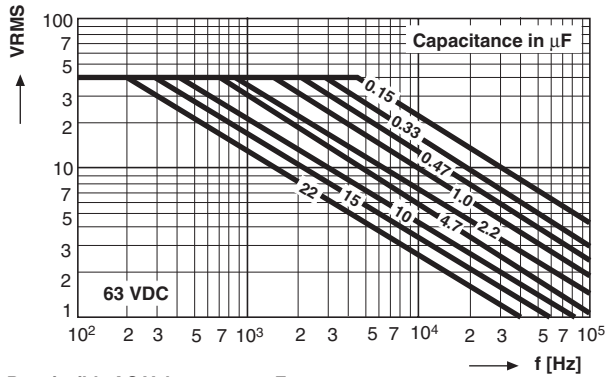
PCM = L + 3.5

\*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). Not CECC approved.

**RECOMMENDED PACKAGING**

LETTER 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 for L > 31.5mm	—	MKT 1813-422-014	X





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