

## Metallized Polyester Film Capacitor

### Quality Assessment: IEC 60384-2, CECC 30 401-059

**MAIN APPLICATIONS:**

Blocking, bypassing, filtering and timing, high frequency coupling and decoupling of fast digital circuits. Interference suppression in low voltage applications. High pulse load. High temperature operations.

**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 (UL-class 94 V-0), green, epoxy resin sealed

**CONSTRUCTION:**

Stacked metallized polyester film

**LEADS:**

Tinned wire

**IEC TEST CLASSIFICATION:**

55/125/56, according to IEC 60068

55/100/21 (for 4.7 $\mu$ F/40 VDC)

**OPERATING TEMPERATURE RANGE:**

- 55°C to + 125°C

- 55°C to + 100°C (for 4.7 $\mu$ F/40 VDC)

**CAPACITANCE RANGE:**

1000pF to 4.7 $\mu$ F

**CAPACITANCE TOLERANCES:**

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

**RATED VOLTAGES ( $U_R$ ):**

40 VDC, 50 VDC, 63 VDC, 100 VDC, 250 VDC

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

25 VAC, 30 VAC, 40 VAC, 63 VAC, 160 VAC

**TEST VOLTAGE (ELECTRODE/ELECTRODE):**

1.6 x  $U_R$  for 2 sec.

**INSULATION RESISTANCE:**

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

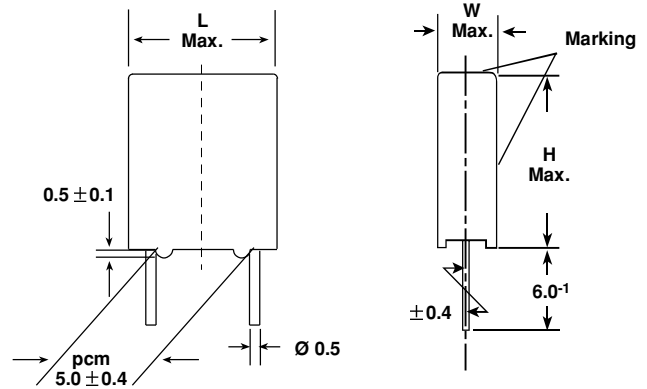
**For  $C \leq 0.33\mu\text{F}$  and  $U_R > 100$  VDC:**

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

**For  $C \leq 0.33\mu\text{F}$  and  $U_R \leq 100$  VDC:**

15,000 M $\Omega$  minimum value (100,000 M $\Omega$  typical value)

Dimensions in millimeters

**TIME CONSTANT:**

Measured at 100 VDC (50 VDC and 63 VDC series measured at 50 VDC, 40 VDC measured with  $U_R$ ) after one minute

**For  $0.33\mu\text{F} < C \leq 3.3\mu\text{F}$  and  $U_R \leq 100$  VDC:**

5000 s minimum value (15,000 s typical value)

**For  $C > 3.3\mu\text{F}$  and  $U_R \leq 100$  VDC:**

1250 s minimum value (10,000 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:  $U_C = 0.8 U_R$

At + 125°C:  $U_C = 0.5 U_R$  (maximum 1000 h)

**SELF INDUCTANCE:**

$\sim 6$  nH measured with 2mm long leads

**PULL TEST ON LEADS:**

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

**RELIABILITY:**

Operational life > 300,000 h

Failure rate < 2 FIT (40°C and 0.5 x  $U_R$ )

For further details, please refer to the general information provided in this catalog.

**MAXIMUM PULSE RISE TIME**

PCM (mm)	Maximum pulse rise time $d_v/d_t$ [V/ $\mu$ s]				
	40 VDC	50 VDC	63 VDC	100 VDC	250 VDC
5.0	120	160	200	240	350

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



**DISSIPATION FACTOR TAN δ**

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

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 04 40 VDC/ 25 VAC			VOLTAGE CODE 05 50 VDC/ 30 VAC			VOLTAGE CODE 06 63 VDC/ 40 VAC			VOLTAGE CODE 01 100 VDC/ 63 VAC			VOLTAGE CODE 25* 250 VDC/ 160 VAC		
		W	H	L	W	H	L	W	H	L	W	H	L	W	H	L
1000 pF	- 210	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
1500 pF	- 215	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
2200 pF	- 222	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
3300 pF	- 233	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
4700 pF	- 247	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
6800 pF	- 268	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
0.01 µF	- 310	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
0.015 µF	- 315	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
0.022 µF	- 322	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2
0.033 µF	- 333	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	3.0	7.5	7.2
0.047 µF	- 347	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	3.5	8.5	7.2
0.068 µF	- 368	—	—	—	—	—	—	—	—	—	2.5	6.5	7.2	4.5	9.5	7.2
0.10 µF	- 410	—	—	—	—	—	—	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5	7.2
0.15 µF	- 415	—	—	—	—	—	—	2.5	6.5	7.2	3.0	7.5	7.2	5.5	11.5	7.2
0.22 µF	- 422	—	—	—	—	—	—	2.5	6.5	7.2	3.5	8.5	7.2	—	—	—
0.33 µF	- 433	—	—	—	—	—	—	3.0	7.5	7.2	4.5	9.5	7.2	—	—	—
0.47 µF	- 447	—	—	—	—	—	—	3.5	8.5	7.2	4.5	9.5	7.2	—	—	—
0.68 µF	- 468	—	—	—	—	—	—	4.5	9.5	7.2	5.5	11.5	7.2	—	—	—
1.0 µF	- 510	—	—	—	—	—	—	5.0	10.5	7.2	7.2	13.0	7.2	—	—	—
1.5 µF	- 515	—	—	—	5.5	11.5	7.2	—	—	—	—	—	—	—	—	—
2.2 µF	- 522	—	—	—	7.2	13.0	7.2	—	—	—	—	—	—	—	—	—
3.3 µF	- 533	—	—	—	7.2	13.0	7.2	—	—	—	—	—	—	—	—	—
4.7 µF*	- 547	7.2	13.0	7.2	—	—	—	—	—	—	—	—	—	—	—	—

Further C-values on request.  
\*CECC approval in preparation.

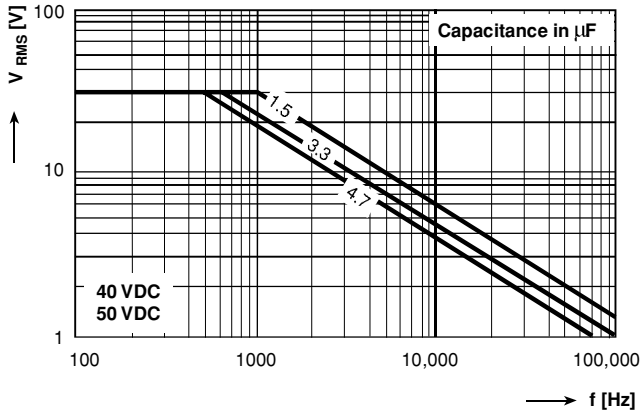
**RECOMMENDED PACKAGING**

LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	PCM 5
D	AMMO	16.5	S*	MKT 1826-533-055-D	X
G	AMMO	18.5	S*	MKT 1826-533-055-G	X
F	REEL	16.5	350	MKT 1826-533-055-F	X
W	REEL	18.5	350	MKT 1826-533-055-W	X
—	BULK	—	—	MKT 1826-533-055	X

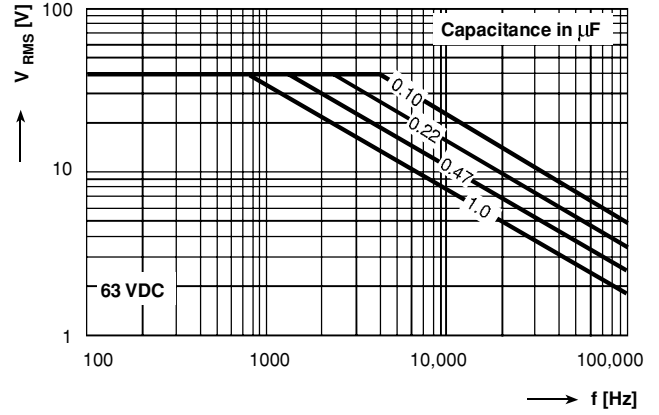
\*S = box size 55 x 210 x 340mm (W x H x L).

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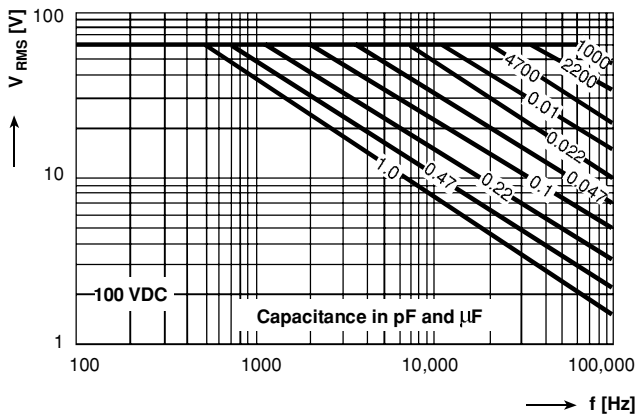
Vishay Roederstein Metallized Polyester, Quality Assess.: IEC 60384-2, CECC 30 401-059



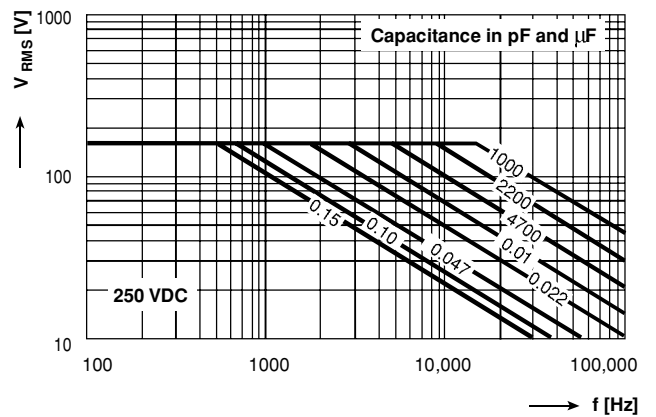
Permissible AC Voltage versus Frequency



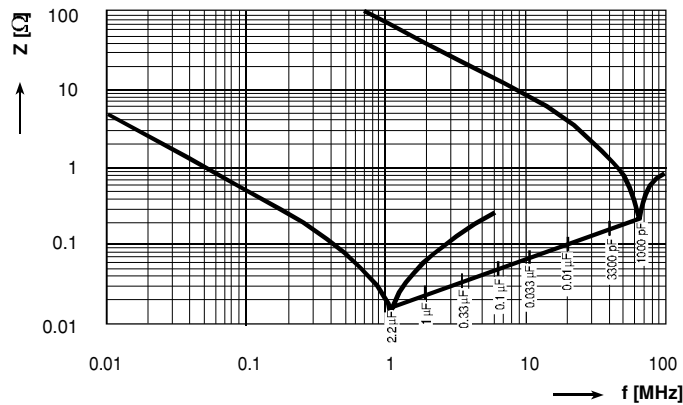
Permissible AC Voltage versus Frequency



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Impedance versus Frequency  $Z = f(f)$   
(Lead length 2.0mm)