

## SMD Metallized Polyester Film Capacitor

### Related Document: IEC 60384-19

**MAIN APPLICATIONS:**

Blocking, bypassing, filtering and timing, high frequency coupling and decoupling of fast digital and analog IC's, interference suppression in low voltage applications.

**MARKING:**

Manufacturer's logo/C-value/rated voltage/tolerance/

**DIELECTRIC:**

Polyester film

**ELECTRODES:**

Vacuum deposited aluminum

**COATING:**

Plastic moulded, black, flame retardant material (UL-class 94 V-0)

**CONSTRUCTION:**

Stacked metallized film (refer to general information)

**CONTACTS:**

Tinned nickel silver tape (Cu/Ni/Zn)

**IEC TEST CLASSIFICATION:**

55/125/21, according to IEC 60068

**TEMPERATURE RANGE:**

- 55°C to + 125°C

**CAPACITANCE RANGE:**

0.01µF to 1µF

**CAPACITANCE TOLERANCES:**

± 20% (M), ± 10% (K), ± 5% (J)

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

40 VDC, 63 VDC

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

25 VAC, 40 VAC

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

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

**INSULATION RESISTANCE:**

Measured with 50 VDC (40 VDC measured with U<sub>R</sub>) after one minute

**For C ≤ 0.33µF:**

3750 MΩ minimum value (50,000 MΩ typical value)

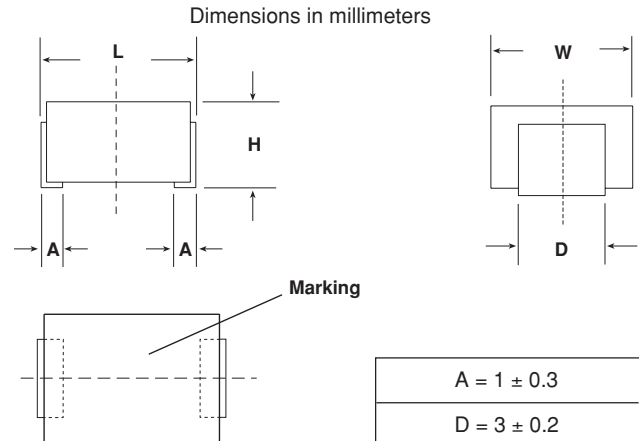
**MAXIMUM PULSE RISE TIME**

CAPACITOR LENGTH (mm)	Maximum pulse rise time $d_v/d_t$ [V/µs]	
	40 VDC	63 VDC
7.2	30	50

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	C > 1.0µF
1kHz	8 x 10 <sup>-3</sup>	8 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		


**TIME CONSTANT:**

Measured with 50 VDC (40 VDC measured with U<sub>R</sub>) after one minute

**For C > 0.33µF:**

1250 s minimum value (10,000 s typical value)

**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>

At + 125°C: U<sub>C</sub> = 0.5 U<sub>R</sub> (maximum 1000 hours)

**CAPACITANCE DRIFT:**

Up to + 40°C, ± 1.5% for a period of two years

**SELF INDUCTANCE:**

~ 4 nH

**RELIABILITY:**

Operational life > 300,000 h

Failure rate < 5 FIT (40°C and 0.5 x U<sub>R</sub>)

All parts are supplied in moisture-proof plastic bags. After opening, the capacitors have to be assembled (soldered) under standard atmospheric conditions within 24 hours.

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

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 04 40 VDC/25 VAC			VOLTAGE CODE 06 63 VDC/40 VAC		
		L ± 0.2	W ± 0.2	H ± 0.2	L ± 0.2	W ± 0.2	H ± 0.2
0.01 μF	- 310	—	—	—	7.2	4.9	3.1
0.015 μF	- 315	—	—	—	7.2	4.9	3.1
0.022 μF	- 322	—	—	—	7.2	4.9	3.1
0.033 μF	- 333	—	—	—	7.2	4.9	3.1
0.047 μF	- 347	—	—	—	7.2	4.9	3.1
0.068 μF	- 368	—	—	—	7.2	4.9	3.1
0.1 μF	- 410	—	—	—	7.2	4.9	3.1
0.15 μF	- 415	—	—	—	7.2	6.8	4.0
0.22 μF	- 422	—	—	—	7.2	6.8	4.0
0.33 μF	- 433	—	—	—	7.2	6.8	4.0
0.47 μF	- 447	—	—	—	7.2	6.8	4.0
0.68 μF	- 468	7.2	6.8	4.0	—	—	—
1.0 μF	- 510	7.2	6.8	4.0	—	—	—

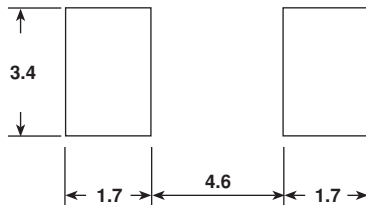
Further values on request.

**RECOMMENDED PACKAGING**

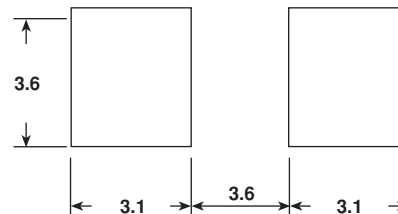
LETTER CODE	TYPE OF PACKAGING	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	SMD
—	REEL	180	MKT 1824-433/065	X
W	REEL	330	MKT 1824-433/065-W	X

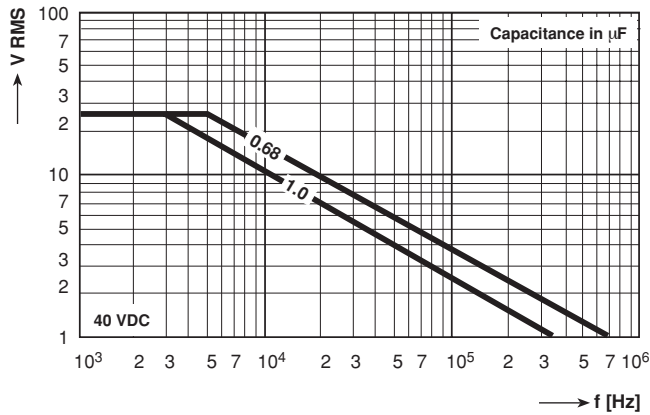
**RECOMMENDED PAD SIZES**

**REFLOW SOLDERING**

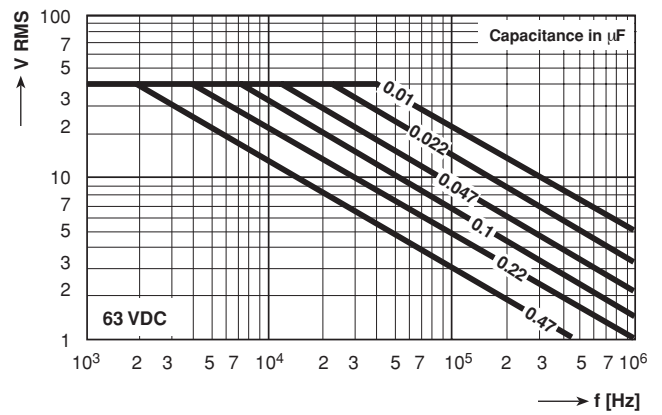


**WAVE SOLDERING**

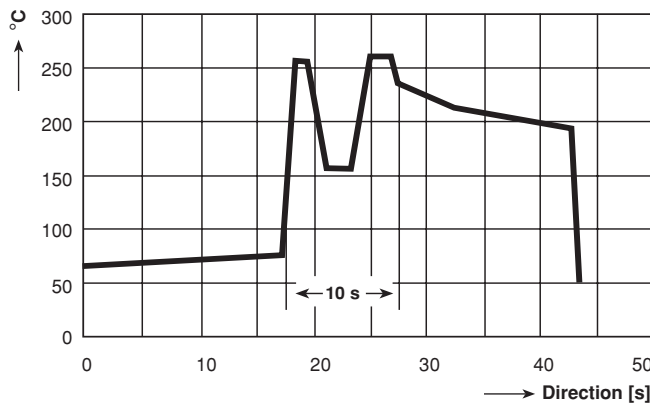




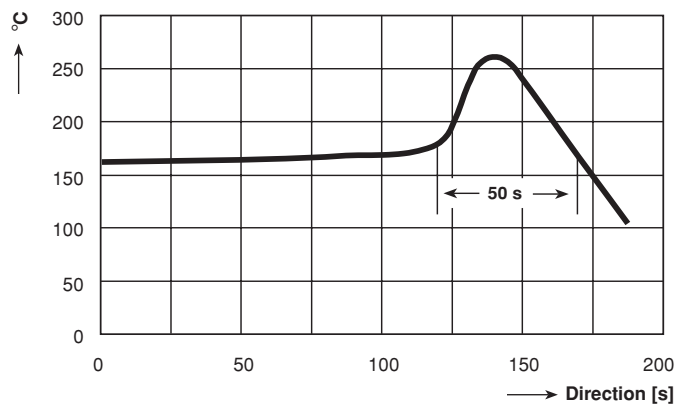
Permissible AC Voltage versus Frequency



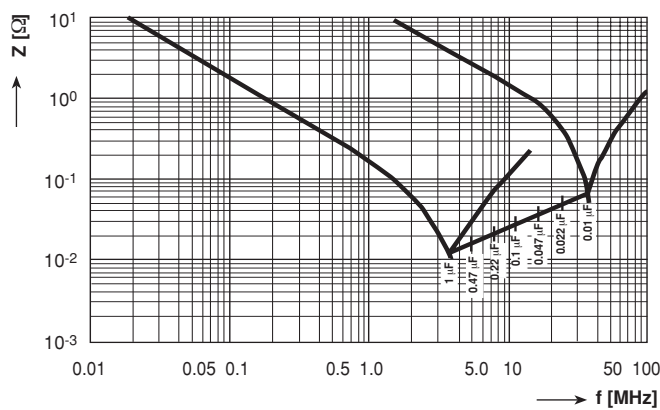
Permissible AC Voltage versus Frequency



Temperature/Time Profile for Double Wave Soldering (maximum data)



Temperature/Time Profile for Reflow Infrared Soldering (maximum data)



Impedance Z as a function of frequency  $Z = f(f)$ , measured at 20°C