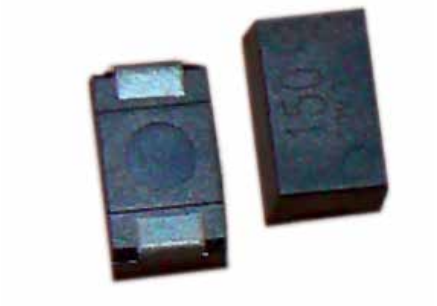
Type SPCX Solid Polymer Aluminum SMT Capacitors



The solid polymer SPCX aluminum capacitor is an ideal choice for general purpose applications in audio-visual equipment, home appliances, computers, office equipment, optical and measuring equipment and industrial robots. The SPCX is a very cost effective capacitor in a compact low-profile package that is offered on tape and reel. The SPCX is environmentally green and RoHS compliant.

Highlights

- A low-profile height of 1.9 mm
- Offered on tape and reel
- Can withstand 260 °C reflow for 10 s
- 15 mΩ ESR @ 100 kHz
- A great value in a small package

RoHS Compliant

Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) andPolyBrominated Diphenyl Ethers (PBDE).

Specifica-

Operating Temperature Range: –40 °C to +105 °C

Capacitance Range: 100 µF to 470 µF

Operating Working Range: 2.0, 2.5, 4.0, 6.3 Vdc

Capacitance Tolerance: ±20 % (120 Hz @ 20 °C)

Surge Voltage:

Vdc	2.0	2.5	4.0	6.3
Surge	2.5	3.1	5.0	8.0

Rated Ripple Current: See ratings table

Life Test:

Apply rated voltage at +105 °C ±2 °C for 1000 h

* Leakage current: ≤ ratings table values
* Capacitance: ±10% of initial measured value
* DF: ≤ ratings table values
* Appearance: No abnormal change to occur

Moisture Resis-

+60 °C ±2 °C @ 90% RH; rated voltage for 500 h

* Leakage current: ≤ rating table values
* Capacitance: +70%, –20% (2V, 2.5V)
  +60%, –20% (4V)
  +50%, –20% (6.3V)
  of initial measured value
* DF: ≤200% of initial specified value
* Appearance: No abnormal change to occur

Shelf Life Test:

+105 °C ±2 °C for 500 h
Leakage current: ≤ rating table values
Capacitance: ±10% of initial measured value
DF: ≤ ratings table values
Appearance: No abnormal change to occur

Surge Test:

Test temperature is +15 °C to +35 °C in series with a 1000 Ω resistor with the surge voltage applied for 1000 cycles of 30±5 s (ON) and 5 min 30 s (OFF)

- Leakage current: I≤0.1CV
- Capacitance: ±10% of initial measured value
- DF: ≤ the values in the ratings table
- Appearance: No abnormal change to occur

Vibration

10 Hz to 2000 Hz to 10 Hz frequency applied one cycle per 20 min at a total amplitude of 1.5 mm. Direction and duration of vibration will be 2 h each in the X,Y and Z planes for total of 6 h with the capacitor soldered in place.

- Appearance; No abnormal change to occur.
- Capacitance: Measured value to be stabilized during test, when measured several times within 30 min before completion of test.

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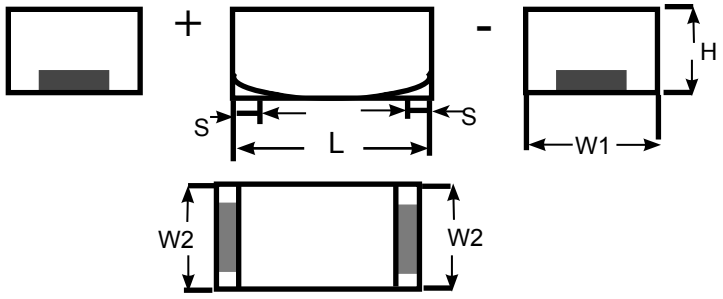
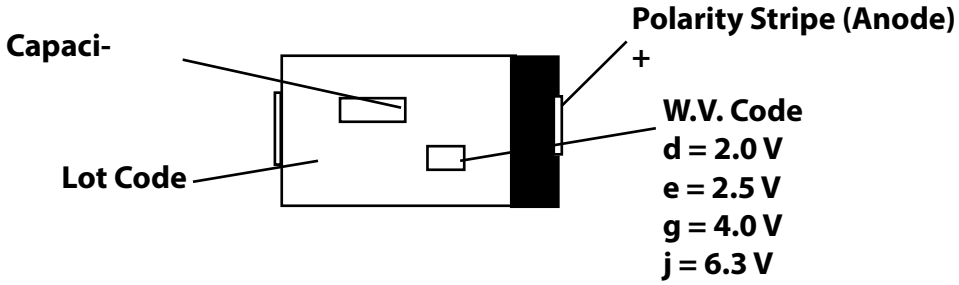
Outline Drawings



Surface finish of terminal; Tin (Sn)

L (±0.2)	W1 (±0.2)	W2 (±0.1)	H (±0.2)	S (±0.3)
7.3 mm	4.3 mm	2.4 mm	1.9 mm	1.3 mm

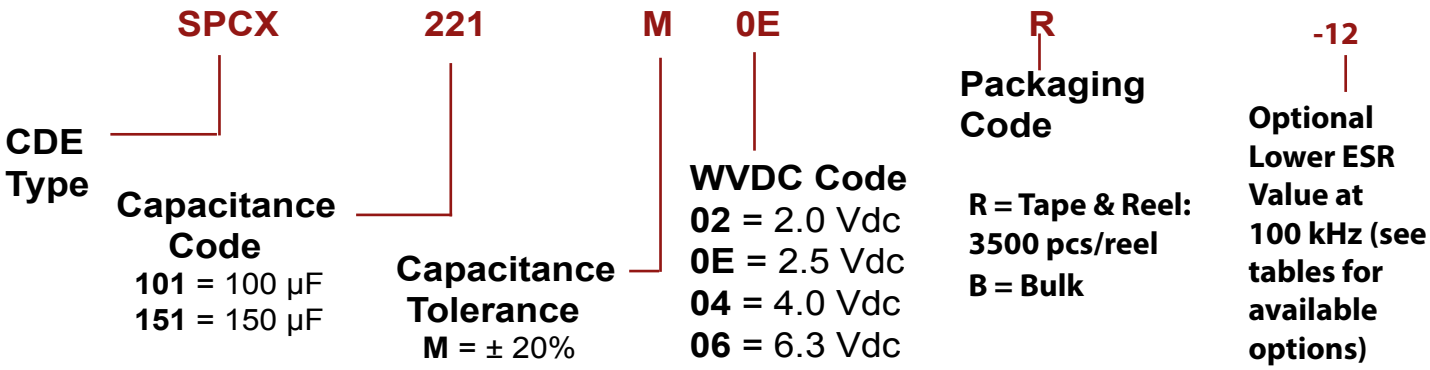
Marking



Ratings

Cap (µF)	Catalog Part Number	Max. D.F. @ 120Hz	Max. Leakage Current (µA)	Max. ESR @ 100kHz/20°C (mΩ)	Max. Ripple Current @ 100kHz/20° to 105°C (Arms)
2.0 Vdc (Surge 2.5Vdc)					
220	SPCX221M02R	0.06	44	15	2.7
270	SPCX271M02R-12	0.06	54	12	3.0
330	SPCX331M02R	0.06	66	15	2.7
330	SPCX331M02R-12	0.06	66	12	3.0
390	SPCX391M02R	0.06	78	15	2.7
470	SPCX471M02R	0.06	94	15	2.7
2.5 Vdc (Surge 3.1Vdc)					
220	SPCX221M0ER	0.06	55	15	2.7
330	SPCX331M0ER	0.06	82.5	15	2.7
390	SPCX391M0ER	0.06	97.5	15	2.7
470	SPCX471M0ER	0.06	117.5	15	2.7
4.0 Vdc (Surge 5.0Vdc)					
150	SPCX151M04R	0.06	60	15	2.7
180	SPCX181M04R	0.06	72	15	2.7
180	SPCX181M04R-12	0.06	72	12	3.0
220	SPCX221M04R	0.06	88	15	2.7
220	SPCX221M04R-12	0.06	88	12	3.0
6.3 Vdc (Surge 8.0Vdc)					
100	SPCX101M06R	0.06	63	15	2.7
120	SPCX121M06R	0.06	75.6	15	2.7
150	SPCX151M06R	0.06	94.5	15	2.7
150	SPCX151M06R-12	0.06	94.5	12	3.0

Part Numbering System



Tape: 12 mm wide; negative terminal towards the sprocket holes

Reel: 330 mm Dia.

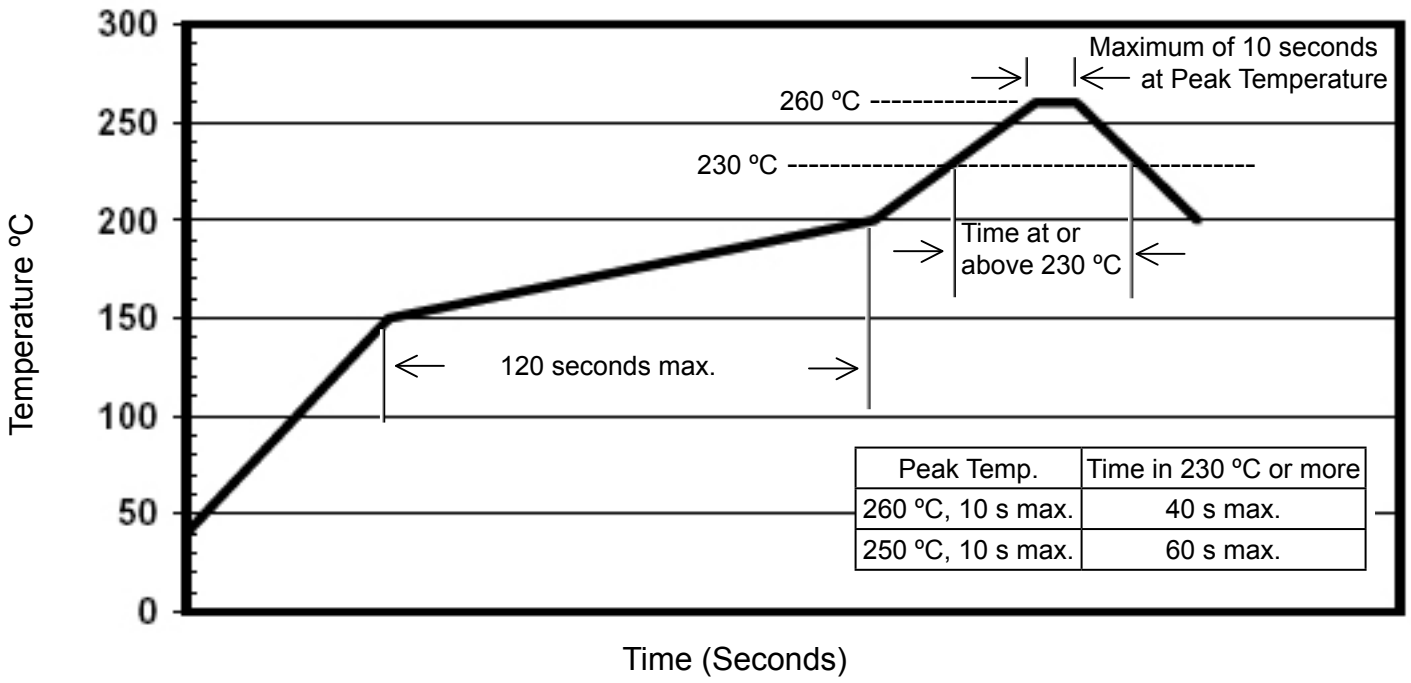
MSL 2 – when in the bag

MSL 3 – when outside the bag

Maximum of 2 reflow solderings; 2nd reflow should be within 5 days of the first reflow soldering.

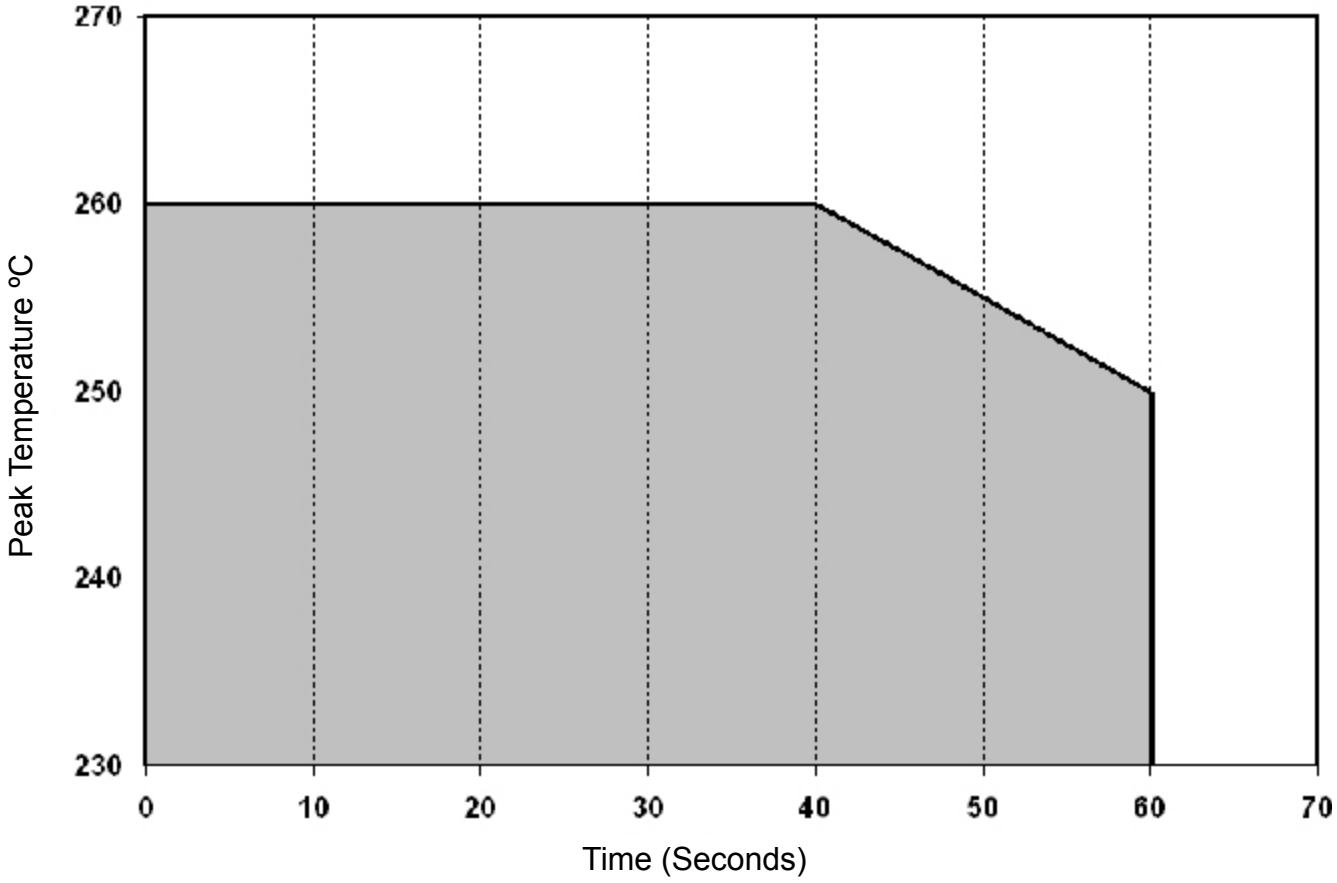
Reflow Soldering Profile

Temperature on Surface of Capacitor



Peak Temp.	Time in 230 ºC or more
260 ºC, 10 s max.	40 s max.
250 ºC, 10 s max.	60 s max.

Time At or Above 230 ºC



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