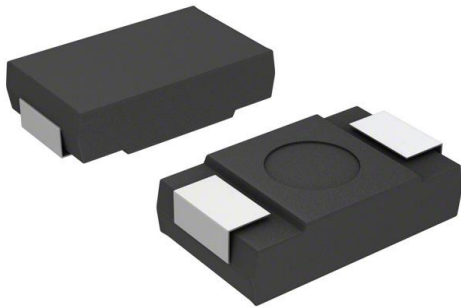


SPSX331M02R-4 Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

| | |
|------------------------------|---|
| DiGi Electronics Part Number | SPSX331M02R-4-DG |
| Manufacturer | Cornell Dubilier Electronics (CDE) |
| Manufacturer Product Number | SPSX331M02R-4 |
| Description | CAP ALUM POLY 330UF 20% 2V SMD |
| Detailed Description | 330 μ F 2 V Aluminum - Polymer Capacitors 2917 (7343 Metric) 4.5mOhm 1000 Hrs @ 105°C |

This model SPSX331M02R-4 is available at DiGi Electronics.

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Manufacturer Product Number:

SPSX331M02R-4

Series:

SPSX

Type:

Polymer

Tolerance:

±20%

ESR (Equivalent Series Resistance):

4.5mOhm

Operating Temperature:

-40°C ~ 105°C

Applications:

General Purpose

Lead Spacing:

-

Height - Seated (Max):

0.083" (2.10mm)

Mounting Type:

Surface Mount

Manufacturer:

Cornell Dubilier Electronics (CDE)

Product Status:

Obsolete

Capacitance:

330 µF

Voltage - Rated:

2 V

Lifetime @ Temp.:

1000 Hrs @ 105°C

Ratings:

-

Ripple Current @ High Frequency:

3.8 A @ 100 kHz

Size / Dimension:

0.287" L x 0.169" W (7.30mm x 4.30mm)

Surface Mount Land Size:

-

Package / Case:

2917 (7343 Metric)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8532.22.0020

Type SPSX Solid Polymer Aluminum SMT Capacitors



The solid polymer SPSX aluminum capacitor is an ideal choice for audio/visual equipment, home appliances, computers, measuring equipment and industrial robots. Like the SPCX, the SPSX is a compact component. But SPSX offers a much lower ESR and a higher ripple current rating than the SPCX. The SPSX is a green product and 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) and PolyBrominated Diphenyl Ethers (PBDE).

Highlights

- A low-profile height of 1.9 mm
- Offered on tape and reel
- Can withstand 260 °C reflow for 10 s
- 4.5 - 9 mΩ ESR @ 100 kHz
- A great value in a small package

Specifications

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

Capacitance Range: 82 μF to 560 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 Resistance:

+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

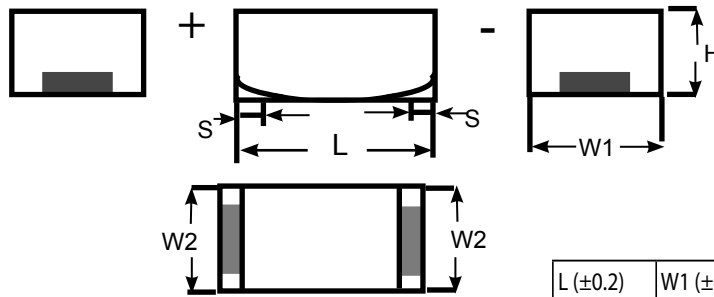
Vibration:

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.

Type SPSX Solid Polymer Aluminum SMT Capacitors

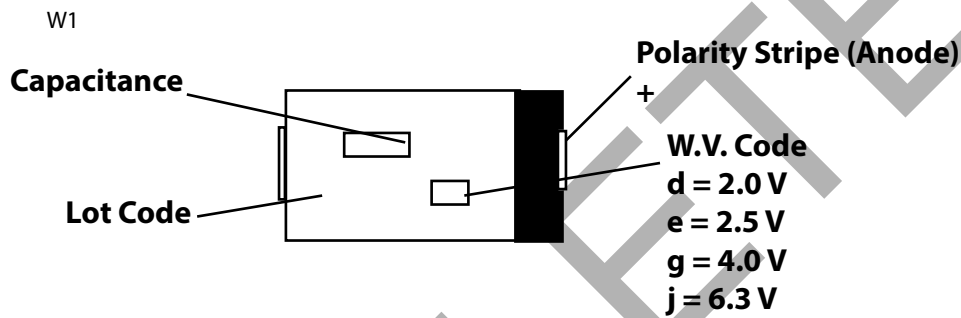
Outline Drawings



| 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 |

Surface finish of terminal; Tin (Sn)

Marking



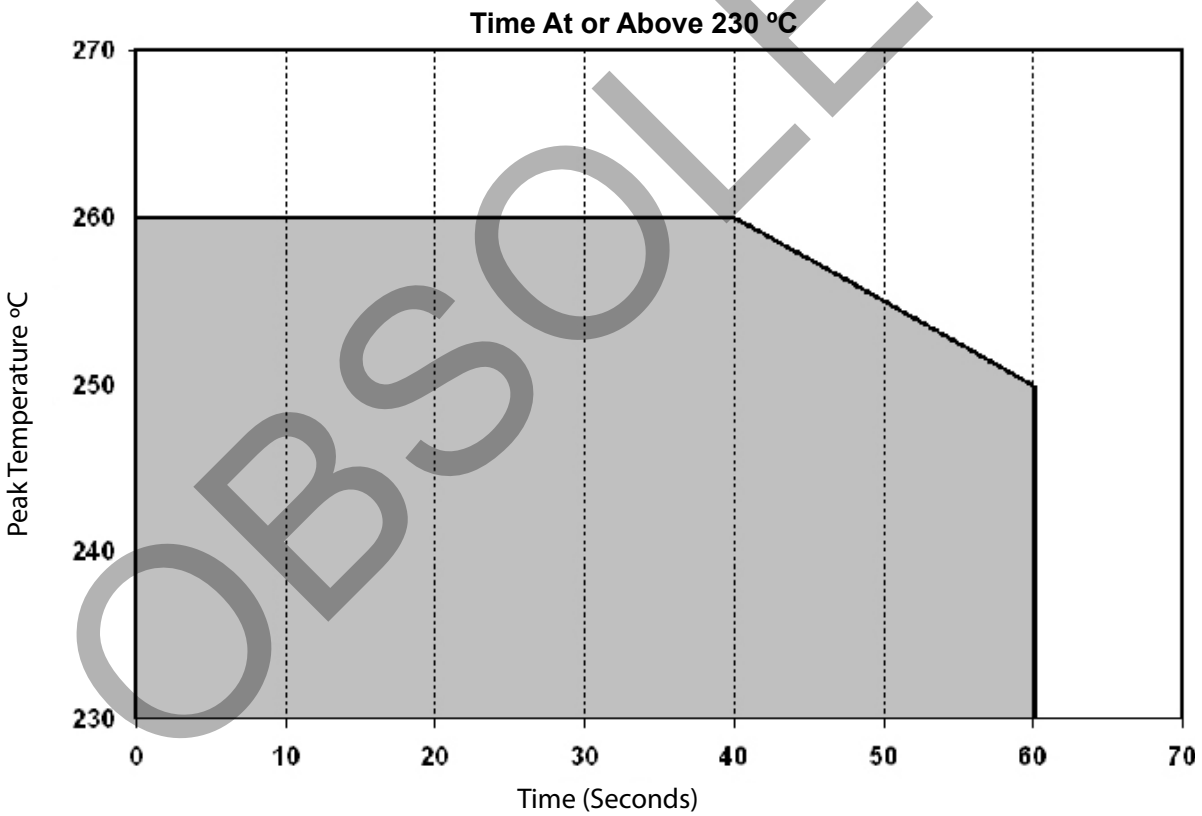
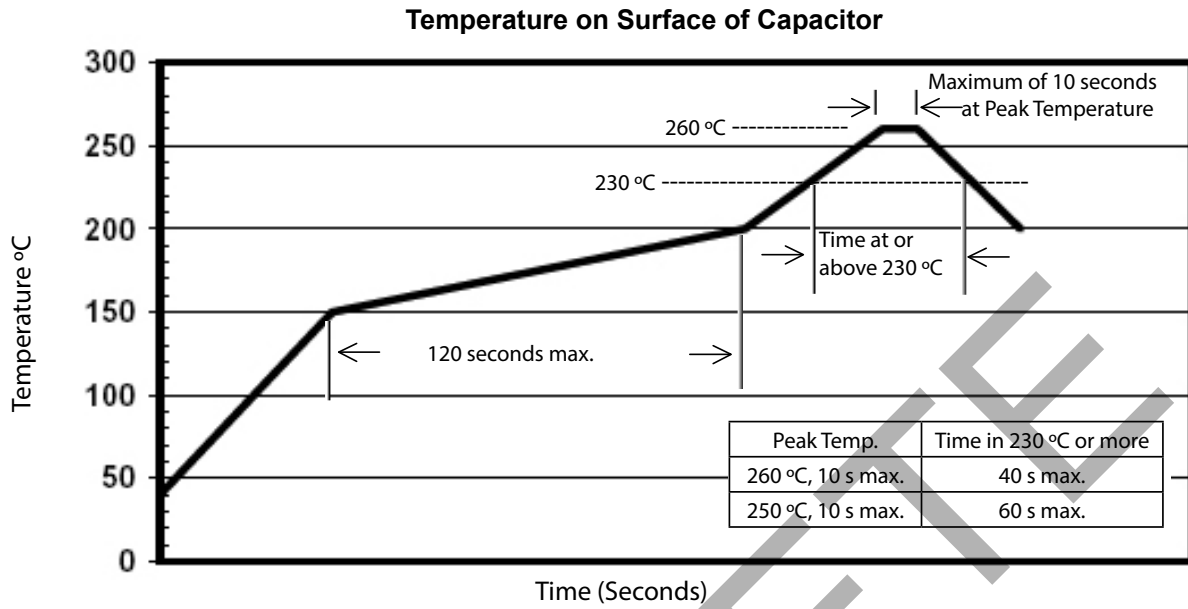
Part Numbering System

| | | | | | |
|--|---|--|--|---|--|
| <p>SPSX</p> <p> </p> <p>Type</p> | <p>221</p> <p> </p> <p>Capacitance Code</p> <p>820 = 82</p> <p>101 = 100</p> <p>221 = 220</p> | <p>M</p> <p> </p> <p>Capacitance Tolerance</p> <p>M = ±20%</p> | <p>0E</p> <p> </p> <p>Voltage Code</p> <p>02 = 2.0 Vdc</p> <p>0E = 2.5 VDC</p> <p>04 = 4.0 Vdc</p> <p>06 = 6.3 Vdc</p> | <p>R</p> <p> </p> <p>Packaging Code</p> <p>R = Tape & Reel: 3500 pcs/reel</p> <p>B = Bulk</p> | <p>-7</p> <p> </p> <p>Optional Lower ESR Value at 100 kHz (see tables for available options)</p> |
|--|---|--|--|---|--|

Type SPSX Solid Polymer Aluminum SMT Capacitors**Ratings**

| Capacitance (μ F) | Catalog Part Number | Max. D.F. @ 120 Hz | Max. DCL (μ A) | Max. E.S.R. @ 100kHz/+20°C (m Ω) | Max. Ripple Current @ 100kHz/(+20°C to +105°C) (Arms) |
|--------------------------------|------------------------|-----------------------|------------------------|--|---|
| 2.0 Vdc (Surge 2.5 Vdc) | | | | | |
| 180 | SPSX181M02R | 0.06 | 36 | 9 | 3 |
| 220 | SPSX221M02R | 0.06 | 44 | 9 | 3 |
| 270 | SPSX271M02R | 0.06 | 54 | 9 | 3 |
| 270 | SPSX271M02R-6 | 0.06 | 54 | 6 | 3.5 |
| 270 | SPSX271M02R-4 | 0.06 | 54 | 4.5 | 3.8 |
| 330 | SPSX331M02R | 0.06 | 66 | 9 | 3 |
| 330 | SPSX331M02R-6 | 0.06 | 66 | 6 | 3.5 |
| 330 | SPSX331M02R-4 | 0.06 | 66 | 4.5 | 3.8 |
| 390 | SPSX391M02R | 0.06 | 78 | 9 | 3 |
| 390 | SPSX391M02R-6 | 0.06 | 78 | 6 | 3.5 |
| 390 | SPSX391M02R-4 | 0.06 | 78 | 4.5 | 4 |
| 470 | SPSX471M02R | 0.06 | 94 | 9 | 3 |
| 470 | SPSX471M02R-6 | 0.06 | 94 | 6 | 3.5 |
| 470 | SPSX471M02R-4 | 0.06 | 94 | 4.5 | 4 |
| 560 | SPSX561M02R-4 | 0.06 | 112 | 4.5 | 4 |
| 2.5 Vdc (Surge 3.1 Vdc) | | | | | |
| 150 | SPSX151M0ER | 0.06 | 37.5 | 9 | 3 |
| 180 | SPSX181M0ER | 0.06 | 45 | 9 | 3 |
| 220 | SPSX221M0ER | 0.06 | 55 | 9 | 3 |
| 220 | SPSX221M0ER-7 | 0.06 | 55 | 7 | 3.5 |
| 270 | SPSX271M0ER-7 | 0.06 | 67.5 | 7 | 3.5 |
| 330 | SPSX331M0ER | 0.06 | 82.5 | 9 | 3 |
| 330 | SPSX331M0ER-6 | 0.06 | 82.5 | 6 | 3.5 |
| 330 | SPSX331M0ER-4 | 0.06 | 82.5 | 4.5 | 4 |
| 390 | SPSX391M0ER | 0.06 | 97.5 | 9 | 3 |
| 390 | SPSX391M0ER-6 | 0.06 | 97.5 | 6 | 3.5 |
| 390 | SPSX391M0ER-4 | 0.06 | 97.5 | 4.5 | 4 |
| 470 | SPSX471M0ER | 0.06 | 117.5 | 9 | 3 |
| 470 | SPSX471M0ER-6 | 0.06 | 117.5 | 6 | 3.5 |
| 470 | SPSX471M0ER-4 | 0.06 | 117.5 | 4.5 | 4 |
| 4.0 Vdc (Surge 5.0 Vdc) | | | | | |
| 82 | SPSX820M04R | 0.06 | 32.8 | 9 | 3 |
| 100 | SPSX101M04R | 0.06 | 40 | 9 | 3 |
| 150 | SPSX151M04R | 0.06 | 60 | 9 | 3 |
| 150 | SPSX151M04R-7 | 0.06 | 60 | 7 | 3.5 |
| 180 | SPSX181M04R | 0.06 | 72 | 9 | 3 |
| 220 | SPSX221M04R | 0.06 | 88 | 9 | 3 |
| 6.3 Vdc (Surge 8.0 Vdc) | | | | | |
| 120 | SPSX121M06R-7 | 0.06 | 75.6 | 7 | 3.5 |
| 150 | SPSX151M06R | 0.06 | 94.5 | 9 | 3 |

Reflow Soldering Profile



Type SPSX Solid Polymer Aluminum SMT Capacitors

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