BOURNS®

SC2 Series

Surface Mount Wirewound Resistors



*RoHS COMPLIANT

Features

- Resistances from 0.005 Ω to 1 kΩ
- Tolerances to ±0.005 %
- TCR to ±5 PPM/°C
- Superior surge handling capability
- Tape and reel packaging
- Non-inductive windings available
- RoHS compliant*

Applications

- Battery formation & battery test equipment
- DC fast chargers
- Pulse power systems
- Power analyzer & precision wattmeter shunts
- Circuit breaker & protection relay testing
- Industrial motor drives & inverters

Sustainability

- Small size reduces material use
- Energy-saving low-power design
- High efficiency, low power loss
- ISO 14001, low-impact energy

Product Overview

The SC2 series is a high-precision, four-terminal surface mount wirewound resistor designed for demanding current sensing and power applications. This series offers a wide resistance range from 0.005 Ω to 1 kΩ with exceptionally tight tolerances down to ±0.005 % and low temperature coefficients as tight as ±5 PPM/°C, ensuring excellent accuracy and stability. Engineered for robust performance, the SC2 Series supports currents up to 25 A, features strong surge-handling capability, and operates reliably across a broad temperature range of -55 °C to +275 °C. Optional non-inductive winding variants further enhance performance in high frequency environments, making this product ideal for precision measurement and high reliability electronic systems.

Electrical Characteristics

Characteristic	SC2			
Power Range @ 70 °C	2 W			
Maximum Current	25 A			
Operating Temperature Range	-55 °C to +275 °C			
Dielectric Strength	1000 VAC			
Insulation Resistance	>1000 MΩ / dry			
Resistance Range	0.005 to 1 Ω	1 to 10 Ω	10 to 100 Ω	>100 Ω
Minimum Tolerance	±0.1 %	±0.05 %	±0.05 %(1)	±0.05 %(1)
Temperature Coefficient of Resistance (TCR)	±90 PPM/°C	±50 PPM/°C	±20 PPM/°C	±10 PPM/°C

Notes:
Contact Bourns for resistors below 0.1 Ω
Lower TCR available upon request
(1) Lower tolerance available upon request

How to Order

SC2 - 0R5 D 1

Model
- SC2 = Surface Mount Wirewound
- SCN2 = Surface Mount Non-inductive

Resistance Value Code
- For values <1K Ω: "R" represents decimal point *(Example: 25R = 25 Ω)*
- For values ≥1K Ω: "K" represents decimal point *(Example 1K5 = 1.5K Ω)*

Resistance Tolerance
- D† = ±0.005 %
- F† = ±0.01 %
- G = ±0.05 %
- J = ±0.1 %

Internal Use

†Contact Bourns for these tolerance options

Contact Information

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*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.

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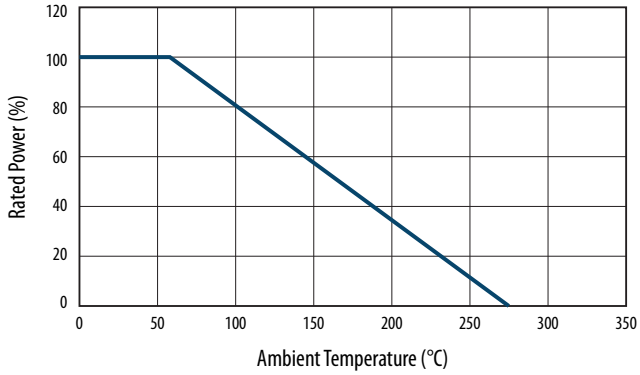
SC2 Series

Surface Mount Wirewound Resistors

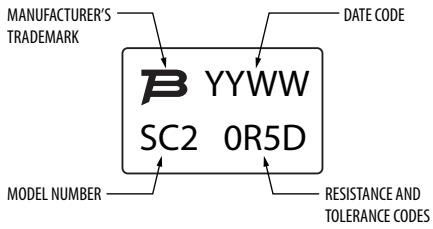


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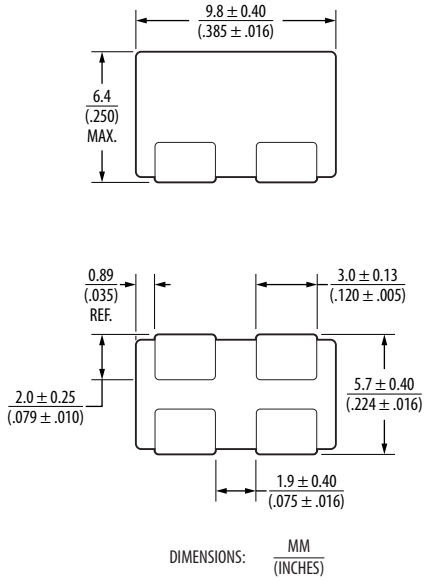
Derating Curve



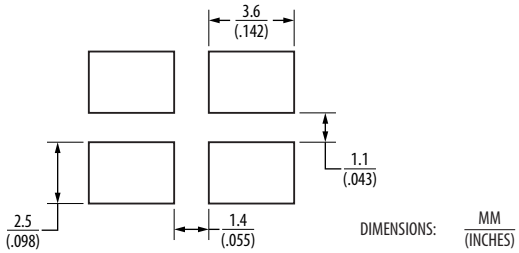
Typical Part Marking



Product Dimensions



Recommended Pad Layout



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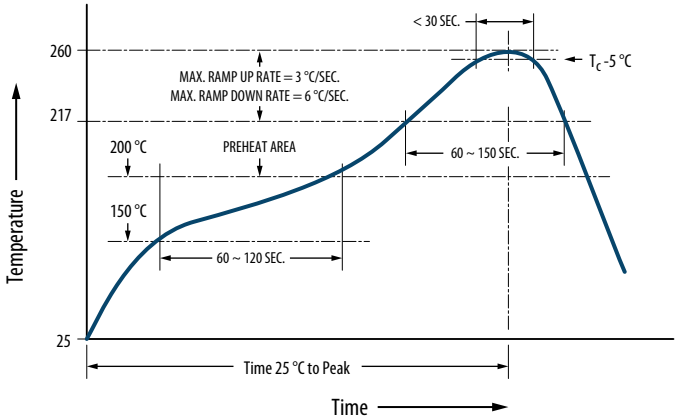
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Soldering Profile



REFLOW TIMES: 3 TIMES MAX.

Profile Feature	Pb Free Assembly
Preheat - Temperature Min. (T_{smin}) - Temperature Max. (T_{smax}) - Time (t_s) from T_{smin} to T_{smax}	 150 °C 200 °C 60-120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max.
Liquidus temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60-150 seconds
Peak package body temperature (T_p)	260 °C
Time within 5 °C of Actual Peak Temperature t_p	<30 seconds
Ramp-Down Rate (T_p to T_L)	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

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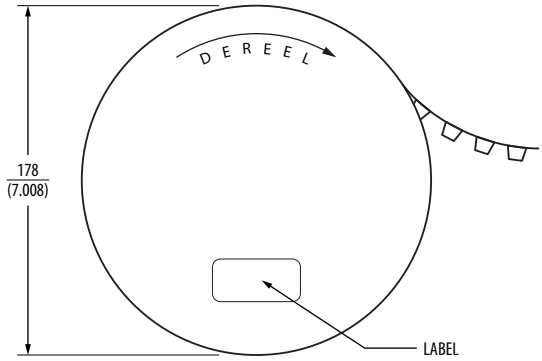
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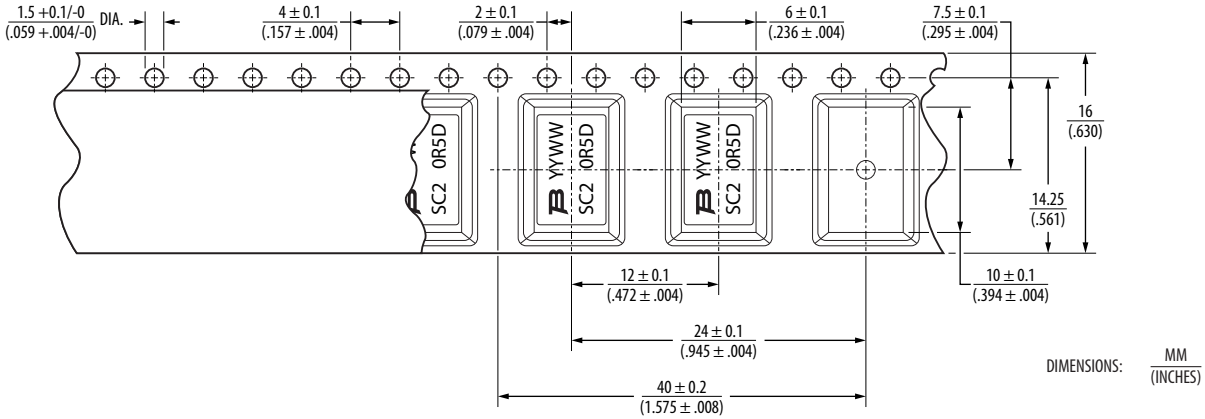
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Packaging Specifications





USER DIRECTION OF FEED

QUANTITY: 200 PCS. PER REEL

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