



Features

- Resistances from 0.005 Ω to 1 k Ω
- Tolerances to ± 0.005 %
- TCR to ± 5 PPM/ $^{\circ}$ 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 k Ω with exceptionally tight tolerances down to ± 0.005 % and low temperature coefficients as tight as ± 5 PPM/ $^{\circ}$ 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 $^{\circ}$ C to $+275$ $^{\circ}$ 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 $^{\circ}$ C	2 W			
Maximum Current	25 A			
Operating Temperature Range	-55 $^{\circ}$ C to $+275$ $^{\circ}$ C			
Dielectric Strength	1000 VAC			
Insulation Resistance	>1000 M Ω / 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/ $^{\circ}$ C	± 50 PPM/ $^{\circ}$ C	± 20 PPM/ $^{\circ}$ C	± 10 PPM/ $^{\circ}$ C

Notes:

Contact Bourns for resistors below 0.1 Ω

Lower TCR available upon request

(1) Lower tolerance available upon request

Contact Information

www.bourns.com	Phone	Email
Asia-Pacific	+886-2 2562-4117	asiacus@bourns.com
Europe	+36 88 885 877	eurocus@bourns.com
Mexico	+52 614 478 0400	mexicus@bourns.com
The Americas	+1-951 781-5500	americus@bourns.com

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 ≥ 1 K 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

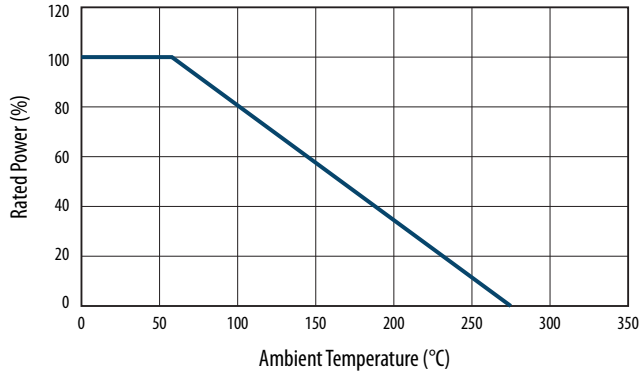
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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

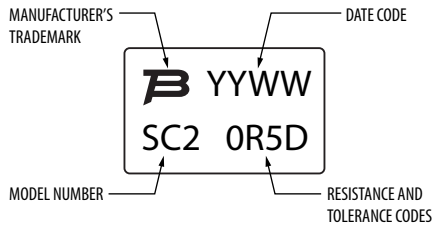
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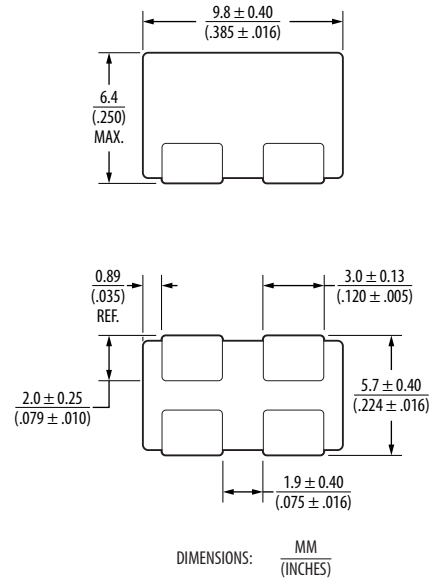
Derating Curve



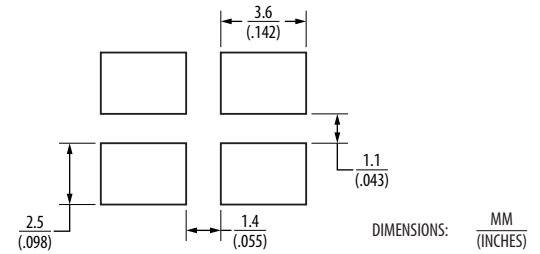
Typical Part Marking



Product Dimensions

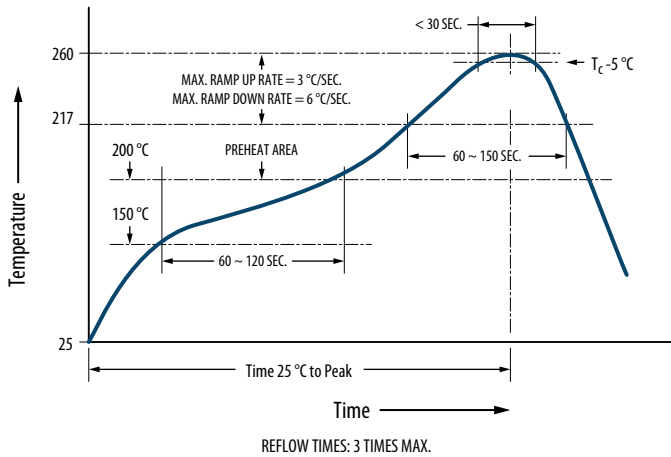


Recommended Pad Layout





Soldering Profile

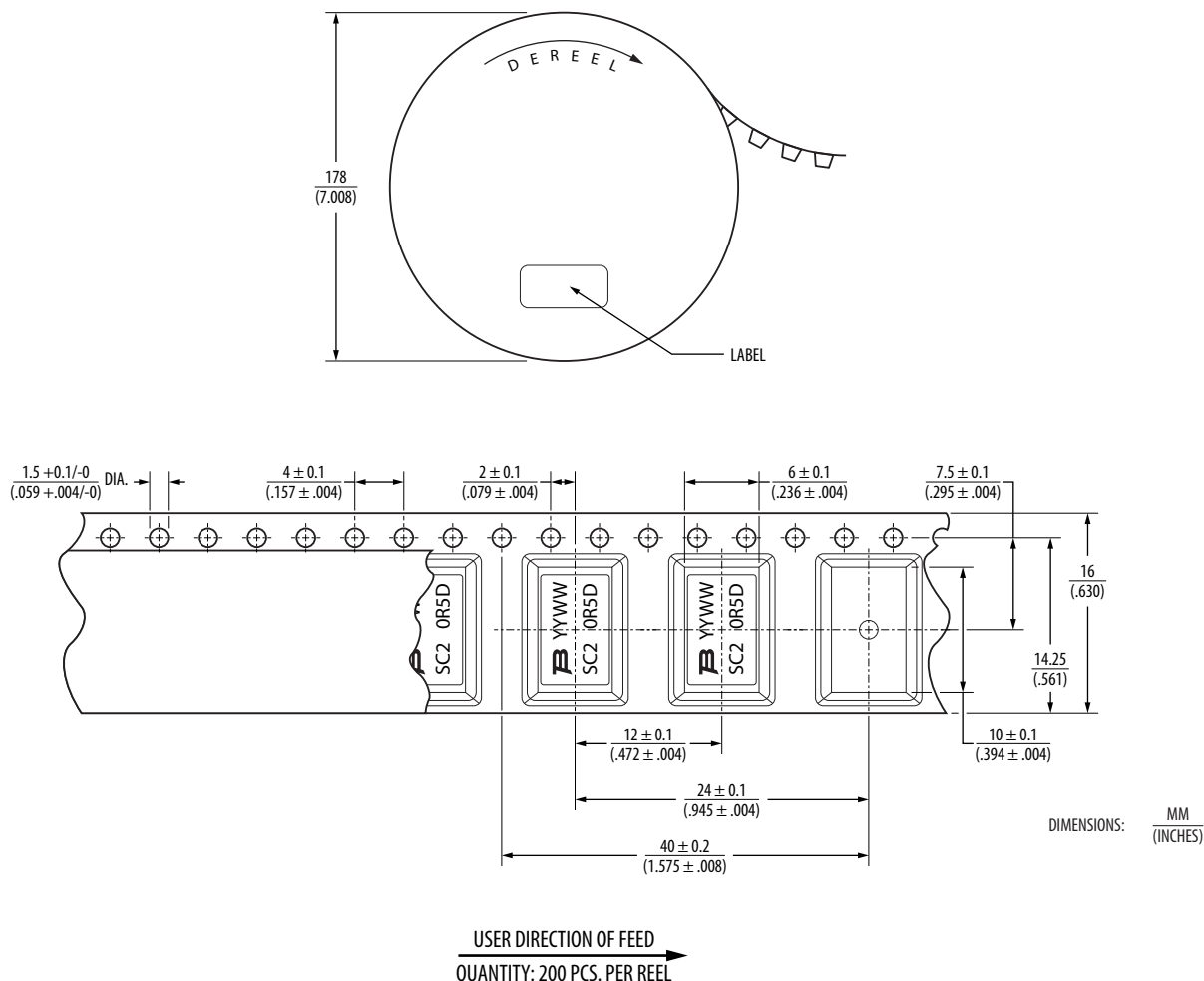


Profile Feature	Pb Free Assembly
Preheat - Temperature Min. (T_{smin}) - Temperature Max. (T_{smax}) - Time (t_s) from T_{smin} to T_{smax}	150 °C 200 °C 60-120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max.
Liquidus temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60-150 seconds
Peak package 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.



Packaging Specifications



REV. 09/26

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