



Features

- Mn/Cu alloy resistor
- Power rating at 70 °C: 2 W, 3 W
- Inductance less than 5 nH
- Low EMF
- RoHS compliant*
- AEC-Q200 qualified

Applications

- Power supplies
- Stepper motor drives
- Battery packs
- White goods
- Input amplifiers

CRE2512 - High Power Current Sense Chip Resistor

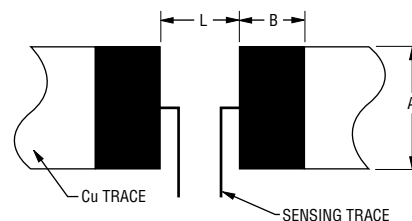
Electrical Characteristics

| Characteristic | CRE2512 | |
|-----------------------------|-------------------|-----|
| | 2 W | 3 W |
| Power Rating @ 70 °C | 2 W | 3 W |
| Metal Strip Alloy | Mn/Cu | |
| Operating Temperature Range | -55 °C to +170 °C | |
| Derated to Zero Load at | +170 °C | |
| Maximum Working Current | $(P / R)^{1/2}$ | |
| Insulation Resistance | > 100 megohms | |
| Resistance Range | 1 mΩ ~ 9 mΩ | |
| Resistance Tolerance | ±1 % | |
| Temperature Coefficient | ±50 PPM/°C | |

Performance Characteristics

| Test | Conditions | Specification |
|---------------------------|---|-------------------------|
| Thermal Shock | -55 °C to + 150 °C, 1000 Cycles, 15 minutes | $\Delta R < \pm 0.5 \%$ |
| Short Time Overload | 5 X Rated Power for 5 seconds | $\Delta R < \pm 0.5 \%$ |
| Low Temperature Storage | -55 °C for 24 hours | $\Delta R < \pm 0.5 \%$ |
| High Temperature Exposure | 1000 hours @ + 170 °C | $\Delta R < \pm 1.0 \%$ |
| Bias Humidity | +85 °C, 85 % RH, 10 % Bias, 1000 hours | $\Delta R < \pm 0.5 \%$ |
| Mechanical Shock | 100 g's for 6 milliseconds, 5 pulses | $\Delta R < \pm 0.5 \%$ |
| Vibration | Frequency varied 10 to 2000 KHz in one minute, 3 directions, 12 hours | $\Delta R < \pm 0.5 \%$ |
| Load Life | 1000 hours at rated power at +70 °C, 1.5 hours on, 0.5 hours off | $\Delta R < \pm 1.0 \%$ |
| Resistance to Solder Heat | +260 °C Solder, 10-12 second dwell, 25 mm/second emergence | $\Delta R < \pm 0.5 \%$ |
| Moisture Resistance | MIL-STD-202 Method 106, 0 % power (7a and 7b not required) | $\Delta R < \pm 0.5 \%$ |

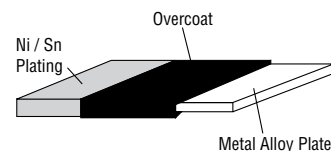
Recommended Solder Pad Layout



| Model | Dimension | | |
|-----------------------------------|----------------|----------------|----------------|
| | A | B | L |
| CRE2512-R001 ~ CRE2512-R004 | 4.0 (.0157) | 3.1 (0.122) | 1.3 (0.052) |
| CRE2512-R005 ~ CRE2512-R009 | 4.0 (.0157) | 2.1 (0.083) | 4.1 (0.161) |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Construction

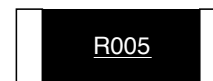


Typical Part Marking

CRE2512-R001 ~
CRE2512-R004



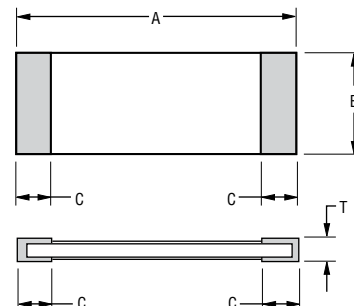
CRE2512-R005 ~
CRE2512-R009



Product Dimensions

| Model | Dimension | | | |
|--------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| | A | B | C | T |
| CRE2512-R001 ~ CRE2512-R004 | 6.45 ± 0.20 (0.254 ± 0.008) | 3.35 ± 0.20 (0.131 ± 0.008) | 2.00 ± 0.20 (0.079 ± 0.008) | 0.70 ± 0.20 (0.0276 ± 0.008) |
| CRE2512-R005 ~ CRE2512-R009 | 6.45 ± 0.20 (0.254 ± 0.008) | 3.35 ± 0.20 (0.131 ± 0.008) | 0.95 ± 0.20 (0.037 ± 0.008) | 0.70 ± 0.20 (0.0276 ± 0.008) |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$



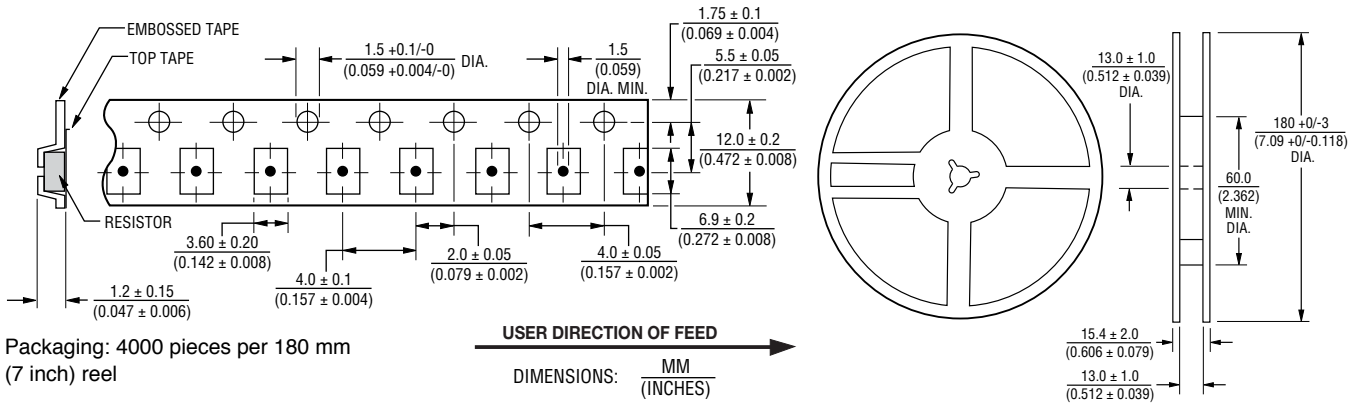
WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

CRE2512 - High Power Current Sense Chip Resistor

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Packaging Dimensions (Conforms to EIA RS-481A)

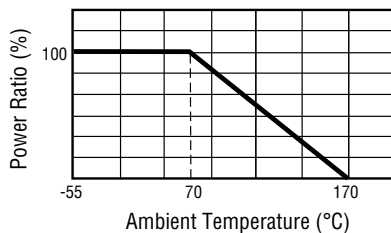


CRE2512 Resistance Values Available

| Code | R Value | Code | R Value |
|------|---------|------|---------|
| R001 | 0.0010 | R006 | 0.0060 |
| R002 | 0.0020 | R007 | 0.0070 |
| R003 | 0.0030 | R008 | 0.0080 |
| R004 | 0.0040 | R009 | 0.0090 |
| R005 | 0.0050 | | |

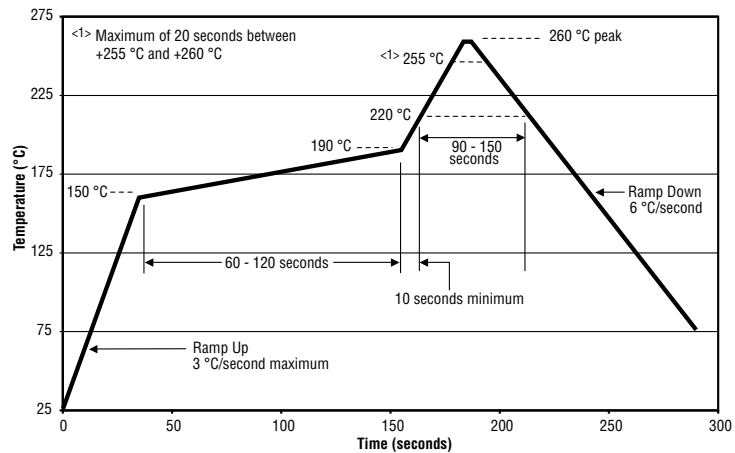
Consult factory for other resistance values.

Derating Curve



Soldering Profile

Can be soldered in accordance with IPC/JEDEC-J-STD-020.



How to Order

CRE 2512 - F Z - R001 E - 2

Model _____
 CRE = Precision Chip Resistor

Size _____
 2512 = 2512 Size

Resistance Tolerance _____
 F = $\pm 1\%$

TCR _____
 Z = ± 50 PPM/°C

Resistance Value _____
 "R" (decimal point) followed by three significant digits (example: R004 = 0.0040 ohm)

Packaging _____
 E = 4000 pieces on 180 mm (7 inch) reel

Power Rating _____
 2 = 2 Watts
 3 = 3 Watts

REV. 11/18

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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