



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 compliant

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) | $\Delta R < \pm 0.5 \%$ |

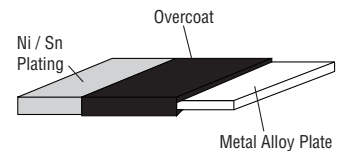
Recommended Solder Pad Layout



| 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



Product Dimensions

| Model | Dimension | | | |
|--------------------------------|---|--|---|--|
| | A | B | C | T |
| CRE2512-R001 ~ CRE2512-R004 | $\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$ | $\frac{3.2 \pm 0.20}{(0.126 \pm 0.008)}$ | $\frac{2.00 \pm 0.20}{(0.079 \pm 0.008)}$ | $\frac{0.70 \pm 0.20}{(0.0276 \pm 0.008)}$ |
| CRE2512-R005 ~ CRE2512-R009 | $\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$ | $\frac{3.2 \pm 0.20}{(0.126 \pm 0.008)}$ | $\frac{0.90 \pm 0.20}{(0.035 \pm 0.008)}$ | $\frac{0.70 \pm 0.20}{(0.0276 \pm 0.008)}$ |

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.

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BOURNS®

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



Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 1A

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 = ±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. 06/19

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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