



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

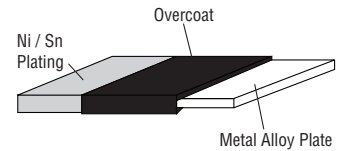
### Recommended Solder Pad Layout



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



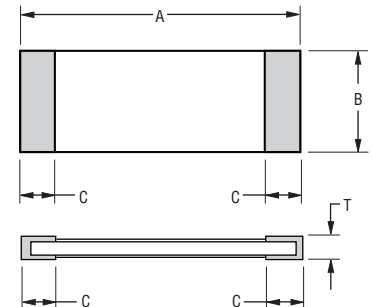
### Typical Part Marking



### 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](http://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)

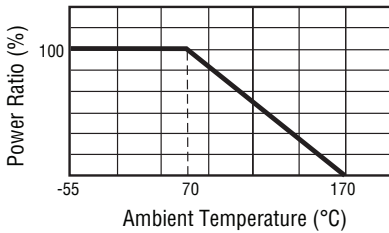


## CRE2512 Resistance Values Available

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

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Users should verify actual device performance in their specific applications.

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