



**THE DATASHEET OF  
CRE2512-FZ-R002E-3**





## Features

- Mn/Cu alloy resistor
- Power rating at 70 °C: 2 W, 3 W
- Inductance less than 5 nH
- Low thermal EMF <3 μV/°C
- 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	
	Power Rating @ 70 °C	2 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

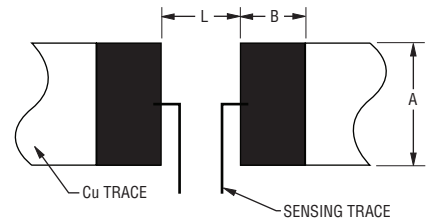
Test	Conditions	Specification
Thermal Shock	-55 °C to + 150 °C, 1000 Cycles, 15 minutes	$\Delta R < \pm 0.5 \%$
Short Time Overload	5 X Rated Power for 5 seconds	$\Delta R < \pm 0.5 \%$
Low Temperature Storage	-55 °C for 24 hours	$\Delta R < \pm 0.5 \%$
High Temperature Exposure	1000 hours @ + 170 °C	$\Delta R < \pm 1.0 \%$
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)	$\Delta R < \pm 0.5 \%$

### Additional Information

Click these links for more information:



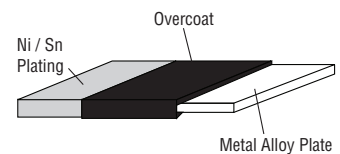
### Recommended Solder Pad Layout



Model	Dimension		
	A	B	L
CRE2512-R001 ~ CRE2512-R004	4.0 (0.157)	3.1 (0.122)	1.3 (0.051)
CRE2512-R005 ~ CRE2512-R009	4.0 (0.157)	2.1 (0.083)	4.1 (0.161)

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

### Construction



### Typical Part Marking



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\*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.

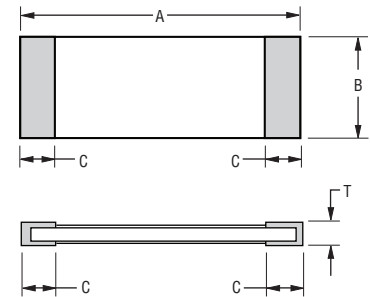
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# CRE2512 - High Power Current Sense Chip Resistor



## Product Dimensions

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



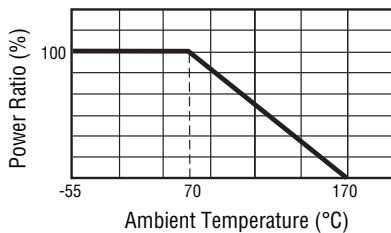
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## 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

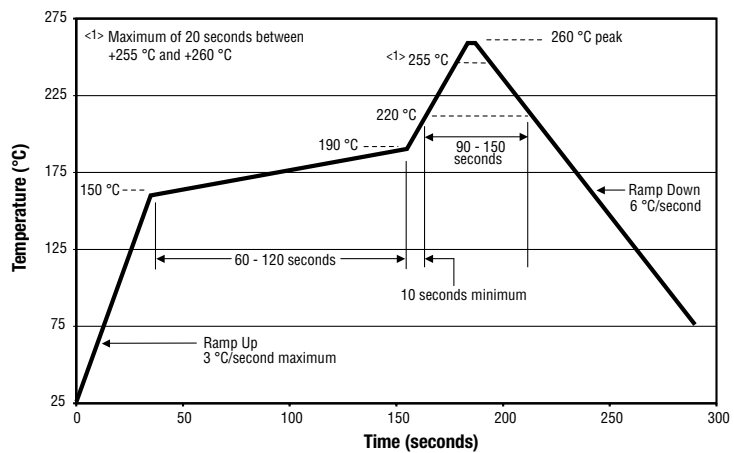


## Environmental Specifications

Moisture Sensitivity Level ..... 1

## 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)

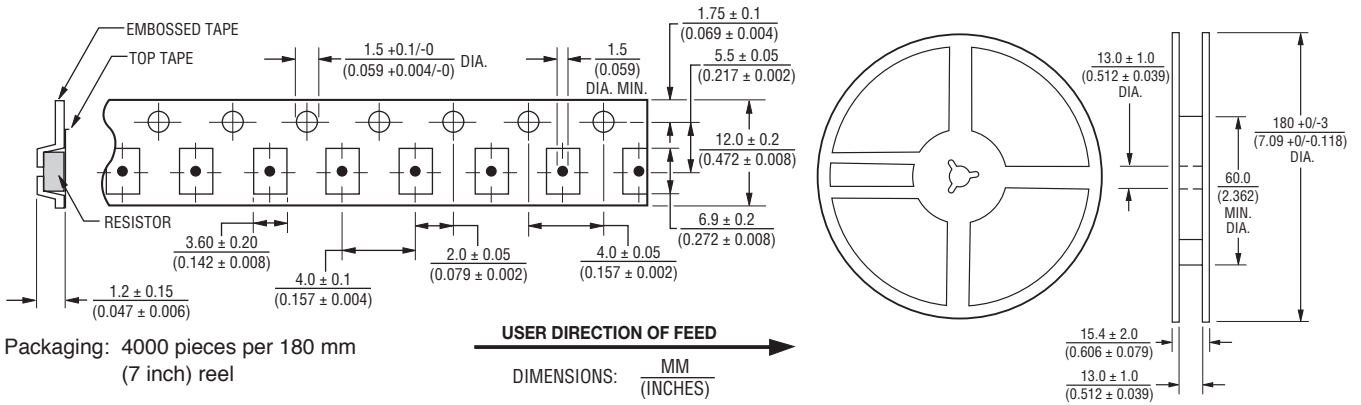
Packaging \_\_\_\_\_  
 E = 4000 pieces on 180 mm (7 inch) reel

Power Rating \_\_\_\_\_  
 2 = 2 Watts  
 3 = 3 Watts

# CRE2512 - High Power Current Sense Chip Resistor

**BOURNS®**

## Packaging Dimensions (Conforms to EIA RS-481A)



REV. 08/21

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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