



## Features

- Special alloy resistor
- Power rating at 70 °C: 3 W
- Inductance less than 5 nH
- RoHS compliant\*
- AEC-Q200 compliant

## Applications

- Power supplies
- Stepper motor drives
- Input amplifiers

# CRA2512 - High Power Current Sense Chip Resistor

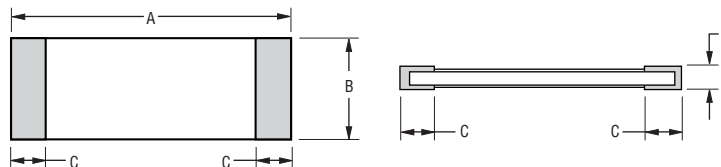
### Electrical Characteristics

Characteristic	CRA2512
Power Rating @ 70 °C	3 W
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	0.010 - 0.100 Ω
Resistance Tolerance	±1 %, ±5 %
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)	$\Delta R < \pm 0.5 \%$

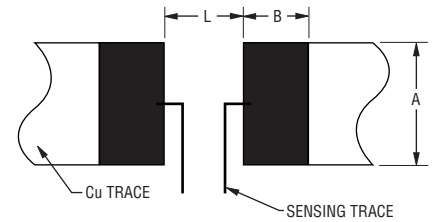
### Product Dimensions



Model	A	B	C	T	Resistor Material
CRA2512	$\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$	$\frac{3.20 \pm 0.20}{(0.126 \pm 0.008)}$	$\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$	$\frac{0.7 \pm 0.20}{(0.0276 \pm 0.008)}$	Resistor Cu-Ni or Cu-Mn

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

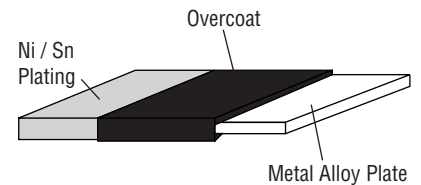
### Recommended Solder Pad Layout



Model	A	B	L
CRA2512	$\frac{4.0}{(0.157)}$	$\frac{2.1}{(0.083)}$	$\frac{4.1}{(0.161)}$

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

### Construction



**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.

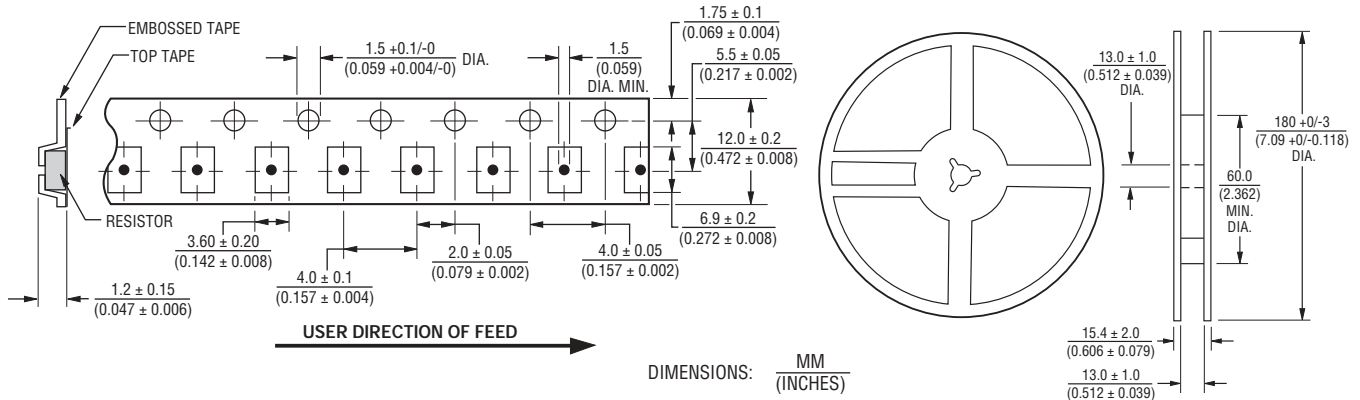
Users should verify actual device performance in their specific applications.

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**BOURNS®**

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

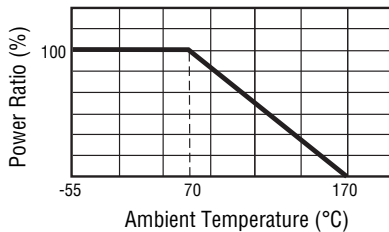


## CRA2512 Resistance Values Available

Code	R Value	Code	R Value
R010	0.010	R050	0.050
R015	0.015	R060	0.060
R020	0.020	R070	0.070
R025	0.025	R075	0.075
R030	0.030	R080	0.080
R040	0.040	R100	0.100

Consult factory for other resistance values.

## Derating Curve

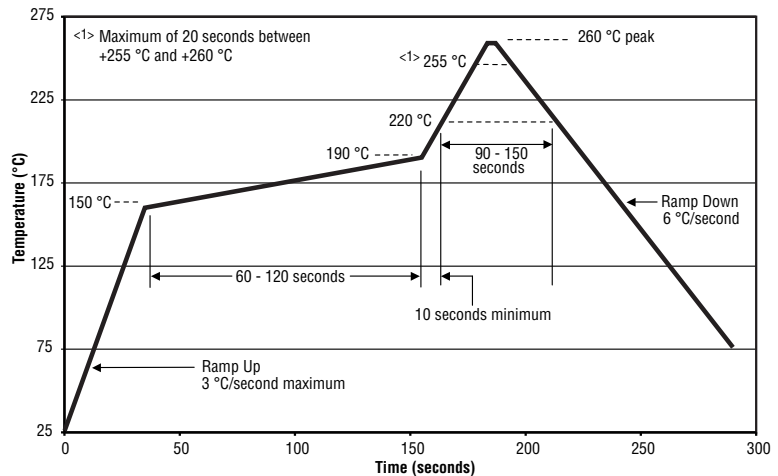


## Environmental Specifications

Moisture Sensitivity Level ..... 1  
ESD Classification (HBM) ..... 1A

## Soldering Profile

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



## How to Order

**CRA 2512 - F Z - R020 E LF**

Model \_\_\_\_\_  
(CRA = Precision Chip Resistor)

Size \_\_\_\_\_  
2512 = 2512 Size

Resistance Tolerance \_\_\_\_\_  
• F = ±1 %  
• J = ±5 %

TCR (PPM/°C) \_\_\_\_\_  
• Z = ±50 PPM/°C

Resistance Value \_\_\_\_\_  
"R" (decimal point) followed by three significant digits (example: R025 = 0.025 ohm)

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

Termination \_\_\_\_\_  
• LF = Tin-plated (RoHS compliant)

REV. 09/19

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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