



Features

- Special alloy resistor
- Power rating at 70 °C: 3 W
- Low thermal EMF <40 $\mu\text{V}/^\circ\text{C}$
- 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	$\pm 1\%$, $\pm 5\%$
Temperature Coefficient	± 50 PPM/ $^\circ\text{C}$

Performance Characteristics

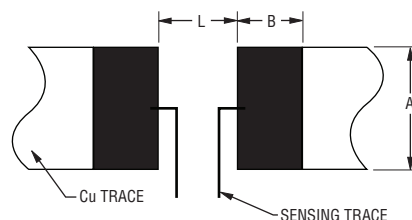
Test	Conditions	Specification
Thermal Shock	-55 °C to + 150 °C, 1000 Cycles, 15 minutes	$\Delta R < \pm 0.5\%$
Short Time Overload	5 X Rated Power for 5 seconds	$\Delta R < \pm 0.5\%$
Low Temperature Storage	-55 °C for 24 hours	$\Delta R < \pm 0.5\%$
High Temperature Exposure	1000 hours @ + 170 °C	$\Delta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



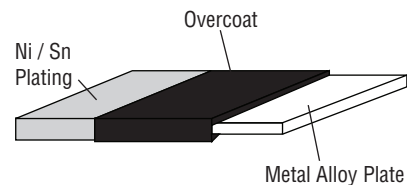
Recommended Solder Pad Layout



Model	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

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice.

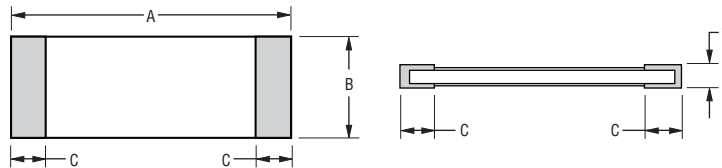
Users should verify actual device performance in their specific applications.

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CRA2512 - High Power Current Sense Chip Resistor

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Product Dimensions



Model	A	B	C	T
CRA2512	$\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$	$\frac{3.20 \pm 0.20}{(0.126 \pm 0.008)}$	$\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$	$\frac{0.90 \pm 0.20}{(0.035 \pm 0.008)}$

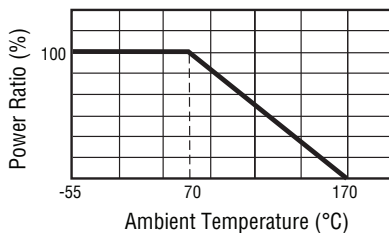
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

CRA2512 Resistance Values Available

Code	R Value	Code	R Value
R010	0.010	R047	0.047
R015	0.015	R050	0.050
R020	0.020	R060	0.060
R022	0.022	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

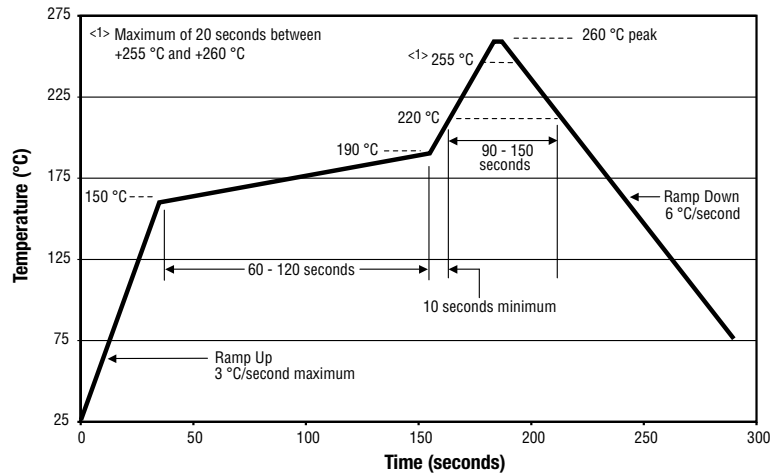


Environmental Specifications

Moisture Sensitivity Level 1

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 = $\pm 1\%$
 • J = $\pm 5\%$
 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)

Specifications are subject to change without notice.

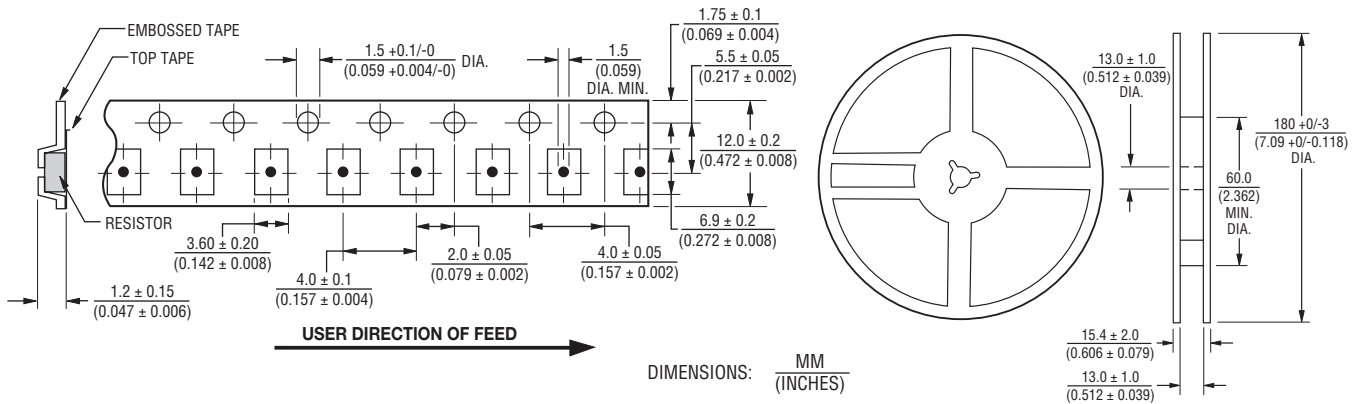
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CRA2512 - High Power Current Sense Chip Resistor

BOURNS®

Packaging Dimensions (Conforms to EIA RS-481A)



REV. 06/25

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