



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 qualified, automotive grade

Applications

- Power supplies
- Stepper motor drives
- Battery packs
- White goods
- Input amplifiers

CRE2512 - High Power Current Sense Chip Resistor

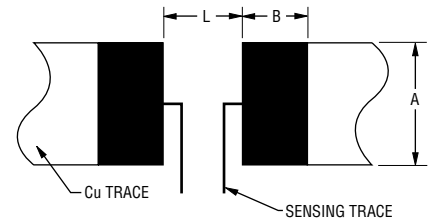
Electrical Characteristics

Characteristic	CRE2512	
Power Rating @ 70 °C	2 W	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)	$\Delta R < \pm 0.5 \%$

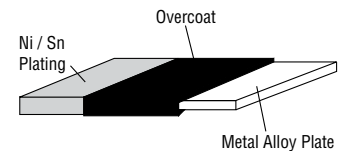
Recommended Solder Pad Layout



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

CRE2512-R001 ~
CRE2512-R004



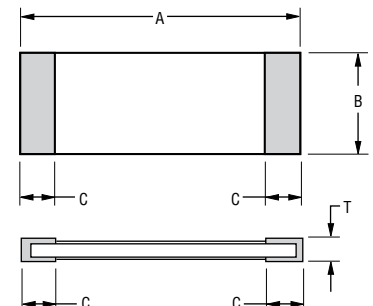
CRE2512-R005 ~
CRE2512-R009



Product Dimensions

Model	Dimension			
	A	B	C	T
CRE2512-R001 ~ CRE2512-R004	6.45 ± 0.20 (0.254 ± 0.008)	3.35 ± 0.20 (0.131 ± 0.008)	2.00 ± 0.20 (0.079 ± 0.008)	0.70 ± 0.20 (0.0276 ± 0.008)
CRE2512-R005 ~ CRE2512-R009	6.45 ± 0.20 (0.254 ± 0.008)	3.35 ± 0.20 (0.131 ± 0.008)	0.95 ± 0.20 (0.037 ± 0.008)	0.70 ± 0.20 (0.0276 ± 0.008)

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



*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.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

BOURNS®

EMBOSSED TAPE

TOP TAPE

RESISTOR

1.2 ± 0.15
(0.047 ± 0.006)

3.60 ± 0.20
(0.142 ± 0.008)

4.0 ± 0.1
(0.157 ± 0.004)

2.0 ± 0.05
(0.079 ± 0.002)

4.0 ± 0.05
(0.157 ± 0.002)

1.5 ± 0.1
(0.069 ± 0.004)

5.5 ± 0.05
(0.217 ± 0.002)

12.0 ± 0.2
(0.472 ± 0.008)

6.9 ± 0.2
(0.272 ± 0.008)

1.75 ± 0.1
(0.069 ± 0.004)

1.5
(0.059)
DIA. MIN.

1.5 ± 0.1
(0.059 ± 0.004) DIA.

180 ± 0.3
(7.09 ± 0.0118) DIA.

60.0
(2.362)
MIN. DIA.

13.0 ± 1.0
(0.512 ± 0.039) DIA.

15.4 ± 2.0
(0.606 ± 0.079)

13.0 ± 1.0
(0.512 ± 0.039)

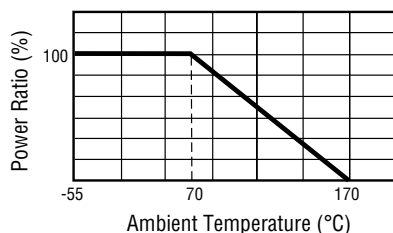
USER DIRECTION OF FEED

DIMENSIONS: MM (INCHES)

Packaging: 4000 pieces per 180 mm (7 inch) reel

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		

Derating Curve



Temperature (°C)

Time (seconds)

<1> Maximum of 20 seconds between +255 °C and +260 °C

<1> 255 °C

260 °C peak

150 °C

190 °C

220 °C

90 - 150 seconds

60 - 120 seconds

10 seconds minimum

Ramp Up 3 °C/second maximum

Ramp Down 6 °C/second

CRE 2512 - F Z - R001 E - 2

Model _____
 CRE = Precision Chip Resistor

Size _____
 2512 = 2512 Size

Resistance Tolerance _____
 F = $\pm 1\%$

TCR _____
 Z = ± 50 PPM/ $^{\circ}$ 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

Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Bourns:

[CRE2512-FZ-R003E-3](#) [CRE2512-FZ-R002E-3](#) [CRE2512-FZ-R007E-3](#) [CRE2512-FZ-R007E-2](#) [CRE2512-FZ-R002E-2](#) [CRE2512-FZ-R001E-2](#) [CRE2512-FZ-R001E-3](#) [CRE2512-FZ-R004E-2](#) [CRE2512-FZ-R004E-3](#) [CRE2512-FZ-R008E-3](#) [CRE2512-FZ-R008E-2](#) [CRE2512-FZ-R005E-3](#) [CRE2512-FZ-R005E-2](#) [CRE2512-FZ-R006E-3](#) [CRE2512-FZ-R006E-2](#) [CRE2512-FZ-R009E-2](#) [CRE2512-FZ-R009E-3](#) [CRE2512-FZ-R003E-2](#)