



## Features

- EB welded metal strip
- Very high power
- Excellent long term stability
- Low resistance, low TCR
- Low thermal EMF
- RoHS compliant\* and halogen free\*\*

## Applications

- Current sensing
- Voltage division
- Power modules
- Frequency converters
- Industrial

# Model CSI2H-2512 Series Current Sense Resistor

### Electrical Characteristics

Characteristic	Model CSI2H-2512 Series <sup>4</sup>	
Resistance Range / Power Rating @70 °C <sup>1</sup>	CSI2H-2512C-000 <sup>3</sup>	< 0.1 mΩ / 100 A
	CSI2H-2512R-L300x	0.3 mΩ / 6 W
	CSI2H-2512R-L500x	0.5 mΩ / 6 W
	CSI2H-2512R-1L00x	1.0 mΩ / 5 W
	CSI2H-2512K-1L80x	1.8 mΩ / 5 W
	CSI2H-2512K-2L00x	2.0 mΩ / 5 W
	CSI2H-2512K-2L30x	2.3 mΩ / 5 W
	CSI2H-2512K-3L00x	3.0 mΩ / 4 W
	CSI2H-2512K-3L50x	3.5 mΩ / 4 W
Operating Temperature Range	-55 to +170 °C	
TCR - Resistive Alloy <sup>2</sup>	±50 PPM/°C (20~60 °C)	
Temperature Coefficient including Copper Terminals	CSI2H-2512R-L300x	±150 PPM/°C
	CSI2H-2512R-L500x	±100 PPM/°C
	CSI2H-2512R-1L00x	±75 PPM/°C
	CSI2H-2512K-1L80x	±75 PPM/°C
	CSI2H-2512K-2L00x	±75 PPM/°C
	CSI2H-2512K-2L30x	±75 PPM/°C
	CSI2H-2512K-3L00x	±75 PPM/°C
	CSI2H-2512K-3L50x	±75 PPM/°C
Inductance	Material type R: < 2 nH Material type K: < 5 nH	
Resistance Tolerance	±1 %, ±2 %, ±5 %	

<sup>1</sup>Terminal temperature    <sup>2</sup>For full TCR range, refer to TCR curve

<sup>3</sup>Tinned copper    <sup>4</sup>Other resistance values are available upon request - contact factory

### Environmental Characteristics

Characteristic	Test Condition	ΔTR Max.
Thermal Shock	-55 to +150 °C / 1000 Cycles	0.50 %
Short Time Overload	5 Times Rated Power for 5 Second Duration	0.50 %
Resistance to Soldering Heat	+260 °C / 10 Seconds	0.50 %
High Temperature Exposure	+170 °C / 1000 Hours	1.00 %
Low Temperature Storage	-65 °C / 24 Hours	0.10 %
Moisture Resistance	10 Days with Cold Shock, No Load	0.20 %
Mechanical Shock	100 g, 6 ms half sine	0.20 %
Vibration, High Frequency	5 g, 10-2000 Hz	0.20 %
Load Life	1000 Hours, Max. Load, Terminal Temperature 130 °C	1.00 %
Solderability	J-STD-002	95 % Coverage Min.
ESD	AEC-Q200-002, 25 kV	0.25 %
Board Flex	60 Sec. Min. Holding Time	0.25 %

### Additional Information

Click these links for more information:



### How to Order

Model CSI 2H - 2512 R - L500 J

No. of Terminals & Style \_\_\_\_\_

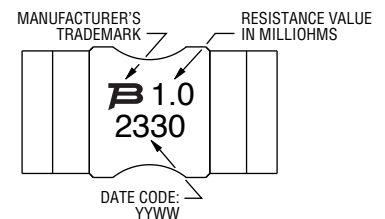
Size \_\_\_\_\_

Material Type \_\_\_\_\_  
(See Part Number Table)

Resistance Code (milliohms) \_\_\_\_\_  
"L" represents decimal point  
(examples: L500 = .500 milliohms;  
1L00 = 1.00 milliohm)

Resistance Tolerance \_\_\_\_\_  
F = ±1 %  
G = ±2 %  
J = ±5 %

### 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.

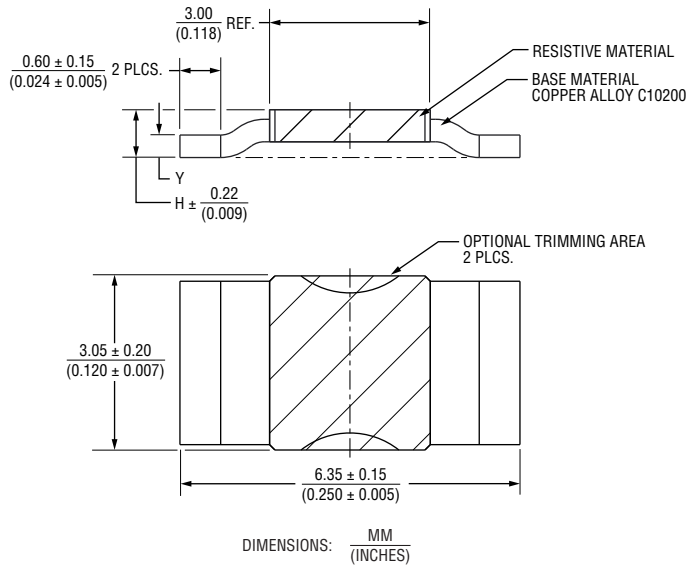
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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# Model CSI2H-2512 Series Current Sense Resistor

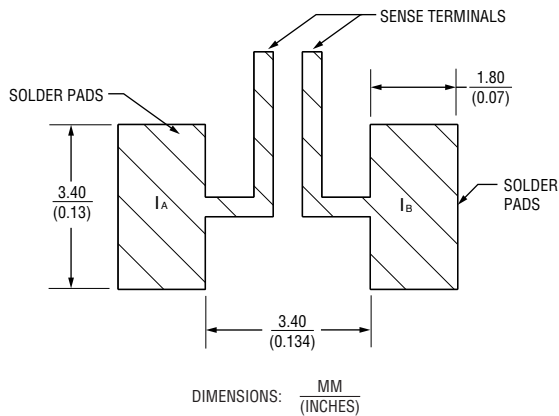
**BOURNS®**

## Product Dimensions

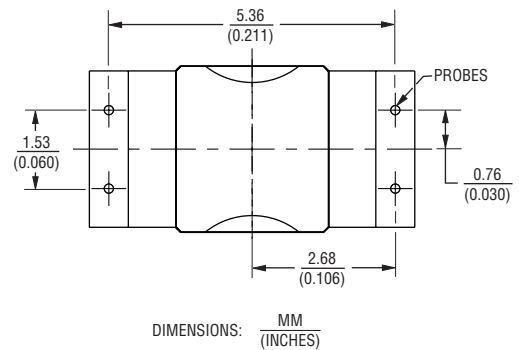


Part Number	Dimension H max.	Dimension Y max.	Alloy
CSI2H-2512C-000	$\frac{0.78}{(0.031)}$	$\frac{0.43}{(0.017)}$	Cu-Sn
CSI2H-2512R-L300x	$\frac{1.65}{(0.065)}$	$\frac{1.21}{(0.048)}$	Cu-Mn
CSI2H-2512R-L500x	$\frac{1.21}{(0.048)}$	$\frac{0.86}{(0.034)}$	Cu-Mn
CSI2H-2512R-1L00x	$\frac{0.78}{(0.031)}$	$\frac{0.43}{(0.017)}$	Cu-Mn
CSI2H-2512K-1L80x	$\frac{1.21}{(0.048)}$	$\frac{0.73}{(0.029)}$	Fe-Cr
CSI2H-2512K-2L00x	$\frac{1.09}{(0.043)}$	$\frac{0.73}{(0.029)}$	Fe-Cr
CSI2H-2512K-2L30x	$\frac{1.09}{(0.043)}$	$\frac{0.73}{(0.029)}$	Fe-Cr
CSI2H-2512K-3L00x	$\frac{0.81}{(0.032)}$	$\frac{0.45}{(0.018)}$	Fe-Cr
CSI2H-2512K-3L50x	$\frac{0.81}{(0.032)}$	$\frac{0.45}{(0.018)}$	Fe-Cr

## Recommended Pad Layout



## Recommended Measurements



## Electrical Schematic



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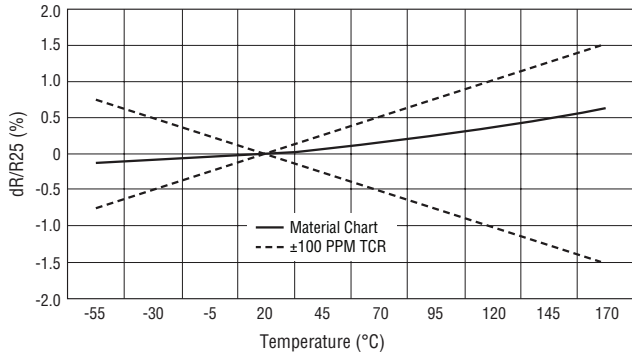
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# Model CSI2H-2512 Series Current Sense Resistor

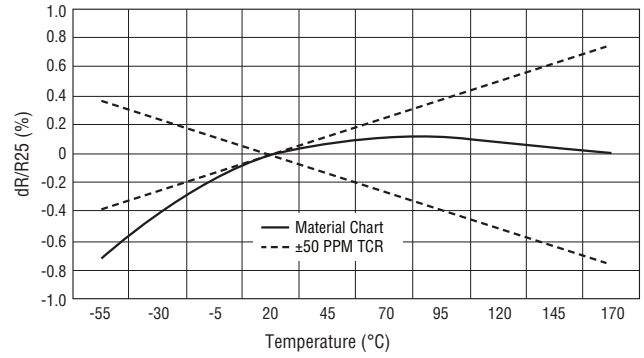


## TCR Curves

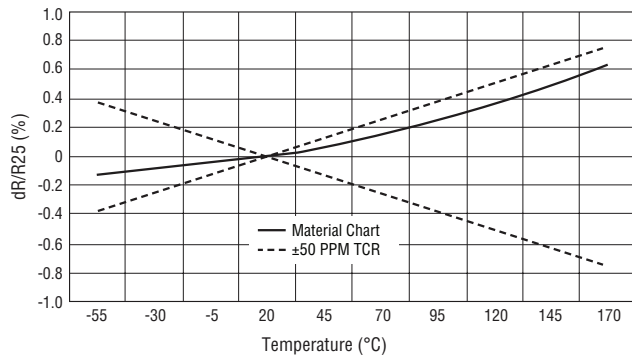
K-Type Resistive Material



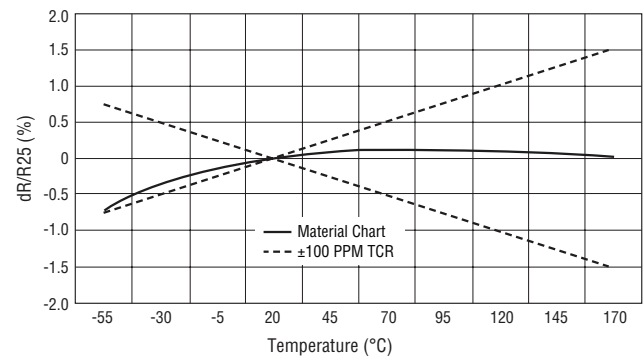
R-Type Resistive Material



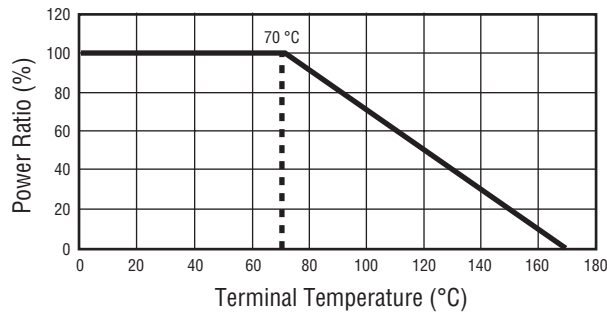
K-Type Resistive Material



R-Type Resistive Material



## Terminal Temperature Derating Curve



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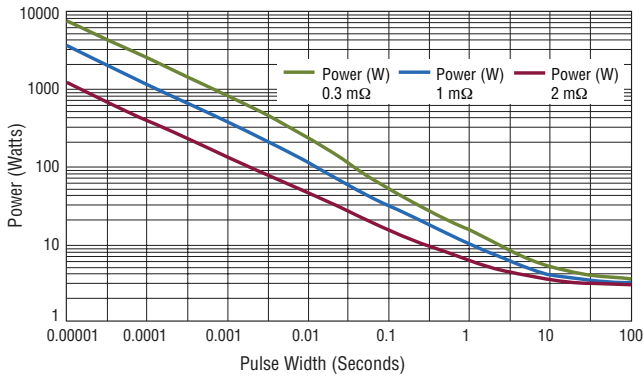
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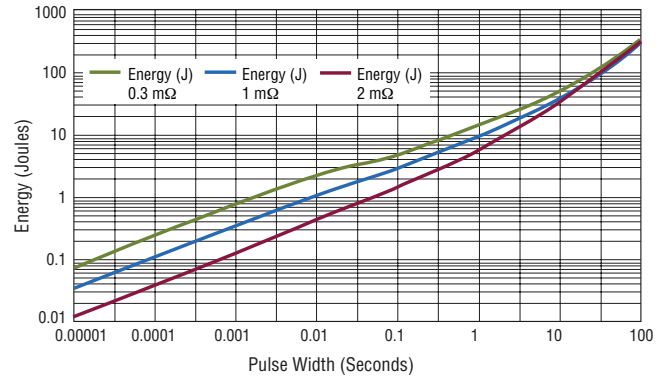
# Model CSI2H-2512 Series Current Sense Resistor

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## Maximum Pulse Power



## Maximum Pulse Energy



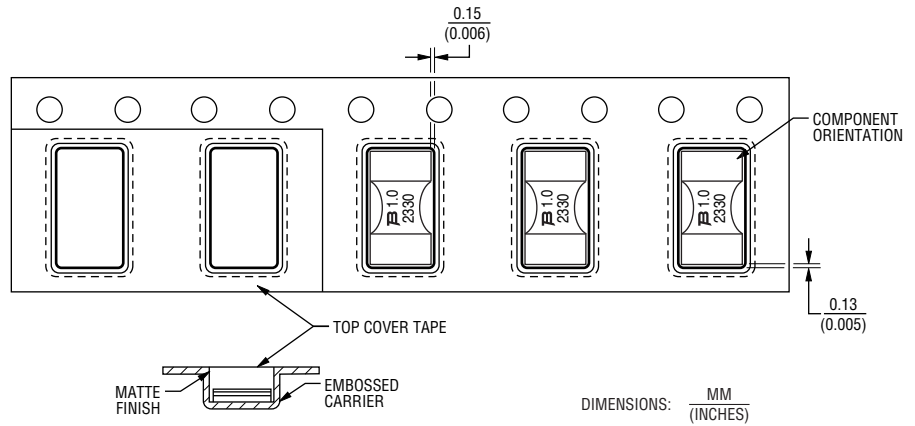
## Packaging Specifications

Components packaged per EIA-481.

Standard Reel Size: 13 inches

Tape Width: 12 mm

Quantity: 3,000 pcs. per reel



**BOURNS®**

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