

## Features

- EB welded metal strip
- Very high power
- Excellent long term stability
- Low resistance, low TCR
- Low thermal EMF
- RoHS compliant\* and halogen free\*\*
- AEC-Q200 qualified

## Applications

- Current sensing
- Voltage division
- Battery management systems
- Power modules
- Frequency converters
- Industrial

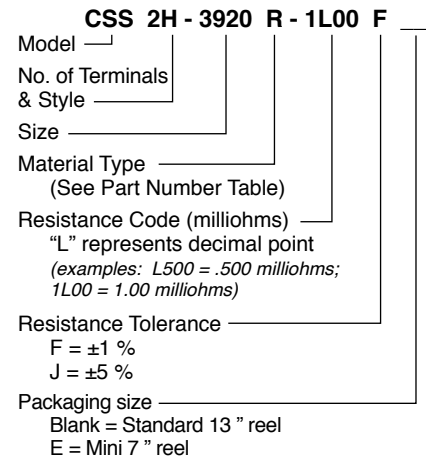
# Model CSS2H-3920 Series Current Sense Resistor

### Electrical Characteristics

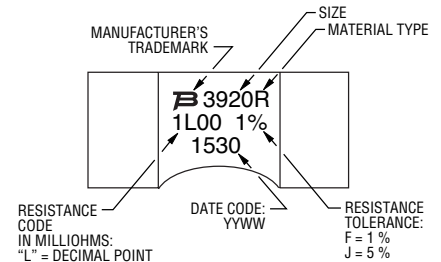
Characteristic	Model CSS2H-3920 Series	
Resistance Range / Power Rating @70 °C <sup>1</sup> / Power Rating @130 °C <sup>1</sup>	CSS2H-3920C-000 <sup>3</sup>	< 0.2 mΩ / 160 A
	CSS2H-3920R-L200x	0.2 mΩ / 12 W / 5 W
	CSS2H-3920R-L300x	0.3 mΩ / 10 W / 5 W
	CSS2H-3920R-L500x	0.5 mΩ / 9 W / 5 W
	CSS2H-3920R-L700x	0.7 mΩ / 8 W / 5 W
	CSS2H-3920R-1L00x	1.0 mΩ / 8 W / 5 W
	CSS2H-3920K-2L00x	2.0 mΩ / 6 W / 4 W
	CSS2H-3920K-2L50x	2.5 mΩ / 5 W / 3.5 W
	CSS2H-3920K-3L00x	3.0 mΩ / 5 W / 3 W
	CSS2H-3920K-4L00x	4.0 mΩ / 4 W / 2.5 W
CSS2H-3920K-5L00x	5.0 mΩ / 3 W / 2 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	CSS2H-3920R-L200x	±150 PPM/°C
	CSS2H-3920R-L300x	±150 PPM/°C
	CSS2H-3920R-L500x	±150 PPM/°C
	CSS2H-3920R-L700x	±100 PPM/°C
	CSS2H-3920R-1L00x	±100 PPM/°C
	CSS2H-3920K-2L00x	±75 PPM/°C
	CSS2H-3920K-2L50x	±75 PPM/°C
	CSS2H-3920K-3L00x	±75 PPM/°C
	CSS2H-3920K-4L00x	±75 PPM/°C
	CSS2H-3920K-5L00x	±75 PPM/°C
Resistance Tolerance	±1 %, ±5 %	

- 1 Terminal temperature
- 2 For full TCR range, refer to TCR curve
- 3 Tinned copper

### How to Order



### Typical Part Marking



### Environmental Characteristics

Characteristic	Test Condition	ΔR Max.
Thermal Shock	-55 to +150 °C / 2000 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 / 2000 Hours	1.00 %
Low Temperature Storage	-65 °C / 24 Hours	0.10 %
Biased Humidity Test	+85 °C, 85 %R.H., 1000 Hours	0.50 %
Moisture Resistance	10 Days with Cold Shock, No Load	0.20 %
Mechanical Shock	100 g, 6 ms half sine	0.20 %
Vibration, High Frequency	20 g, 10-2000 Hz	0.20 %
Load Life	2000 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 %

\* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

\*\*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.

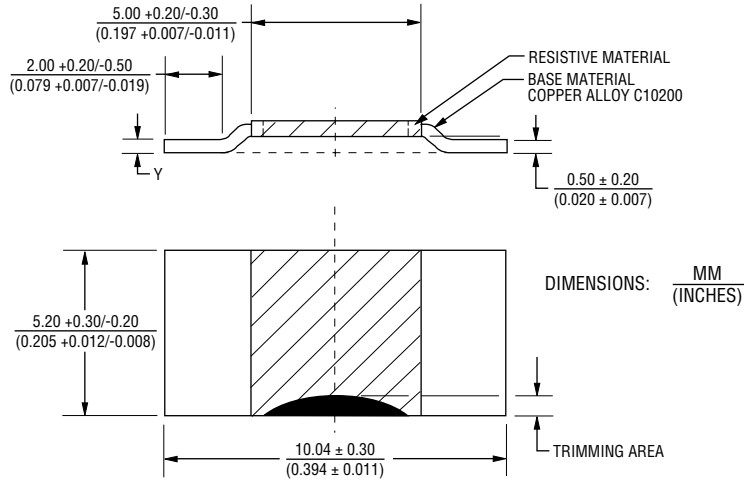
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# Model CSS2H-3920 Series Current Sense Resistor

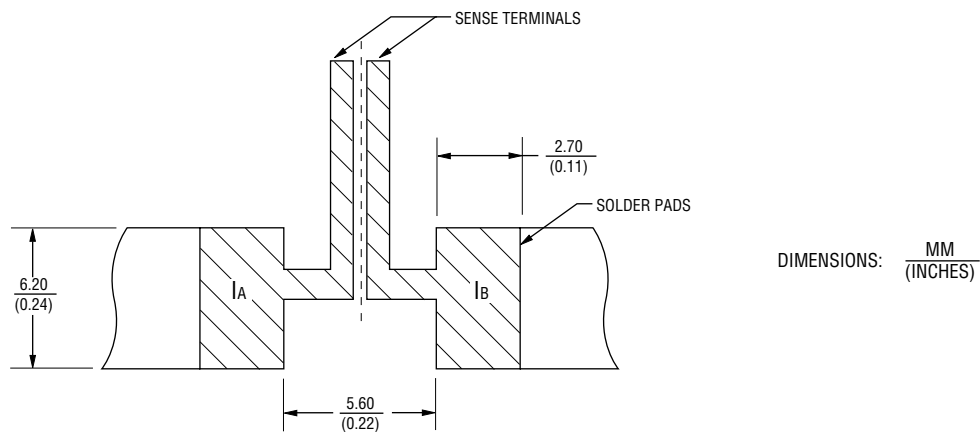
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## Product Dimensions



Part Number	Dimension Y
CSS2H-3920C-000	$\frac{0.42 \pm 0.1}{(0.016 \pm 0.004)}$
CSS2H-3920R-L200x	$\frac{1.20 \pm 0.2}{(0.047 \pm 0.008)}$
CSS2H-3920R-L300x	$\frac{1.20 \pm 0.2}{(0.047 \pm 0.008)}$
CSS2H-3920R-L500x	$\frac{0.84 \pm 0.1}{(0.033 \pm 0.004)}$
CSS2H-3920R-L700x	$\frac{0.42 \pm 0.1}{(0.016 \pm 0.004)}$
CSS2H-3920R-1L00x	
CSS2H-3920K-2L00x	
CSS2H-3920K-2L50x	
CSS2H-3920K-3L00x	
CSS2H-3920K-4L00x	
CSS2H-3920K-5L00x	

## Recommended Pad Layout



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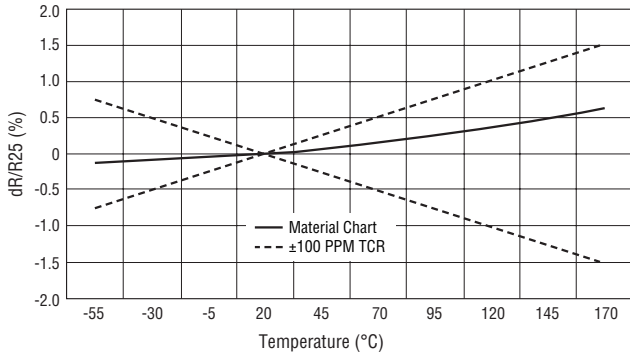
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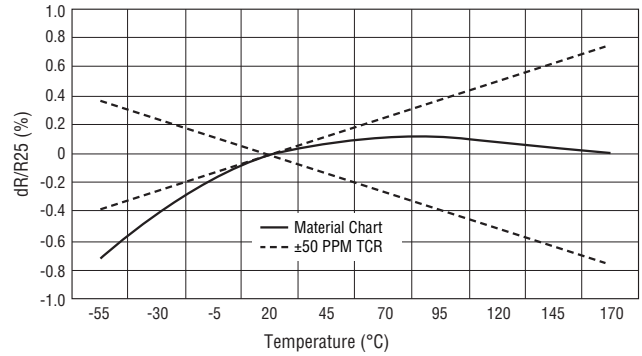


## TCR Curves

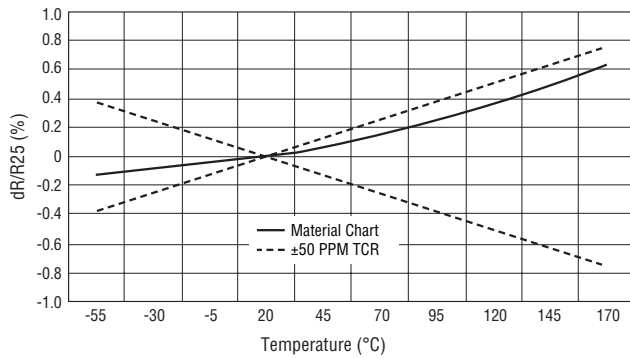
K-Type Resistive Material



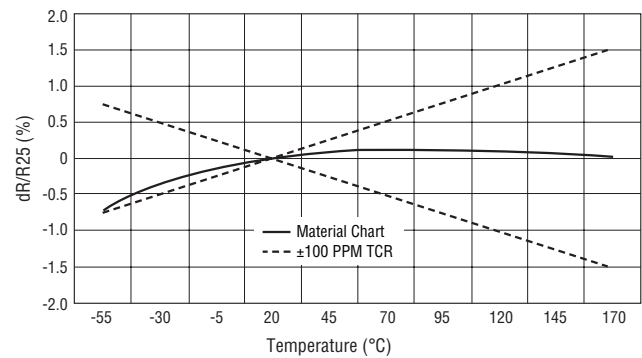
R-Type Resistive Material



K-Type Resistive Material

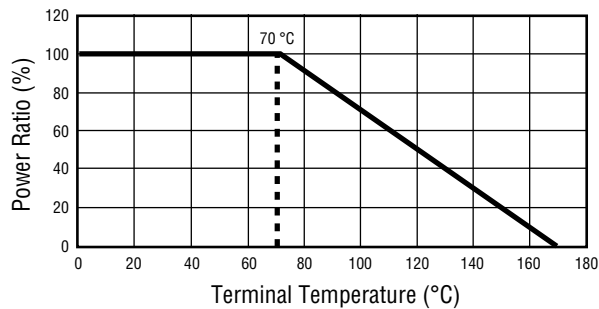


R-Type Resistive Material

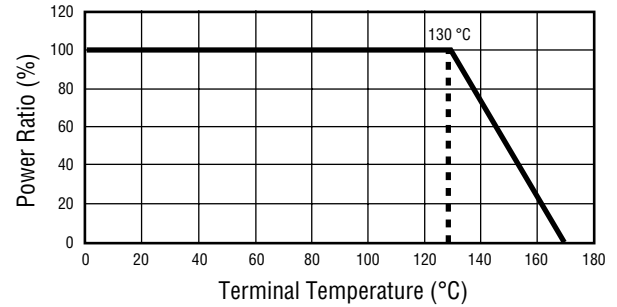


## Power Derating Curves

@70 °C



@130 °C



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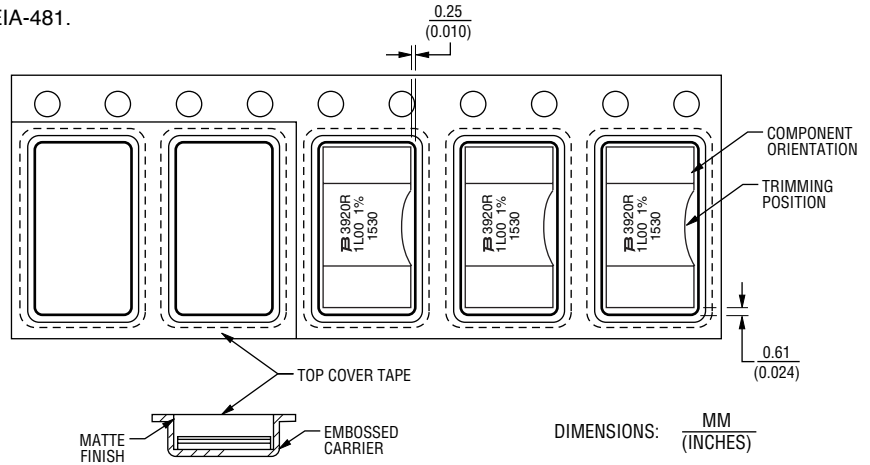
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## Packaging Specifications

Components packaged on plastic tape & reel per EIA-481.

Standard Reel Size: 13 inches  
Tape Width: 16 mm  
Quantity: 3,000 pcs. per reel

Mini-Reel Size: 7 inches  
Tape Width: 16 mm  
Quantity: 1000 pcs. per reel



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