

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 compliant

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[1]	CSS2H-3920C-000[3]	< 0.2 mΩ / 160 A
	CSS2H-3920R-L200x	0.2 mΩ / 12 W
	CSS2H-3920R-L300x	0.3 mΩ / 10 W
	CSS2H-3920R-L500x	0.5 mΩ / 9 W
	CSS2H-3920R-L700x	0.7 mΩ / 8 W
	CSS2H-3920R-1L00x	1.0 mΩ / 8 W
	CSS2H-3920K-2L00x	2.0 mΩ / 6 W
	CSS2H-3920K-2L50x	2.5 mΩ / 5 W
	CSS2H-3920K-3L00x	3.0 mΩ / 5 W
	CSS2H-3920K-4L00x[4]	4.0 mΩ / 4 W
	CSS2H-3920K-5L00x[4]	5.0 mΩ / 3 W
Operating Temperature Range	-55 to +170 °C	
TCR - Resistive Alloy [2]	±50 PPM/°C (20~60 °C)	
Temperature Coefficient including Copper Terminals	CSS2H-3920R-L200x	±100 PPM/°C
	CSS2H-3920R-L300x	
	CSS2H-3920R-L500x	
	CSS2H-3920R-L700x	
	CSS2H-3920R-1L00x	
	CSS2H-3920K-2L00x	±75 PPM/°C
	CSS2H-3920K-2L50x	
	CSS2H-3920K-3L00x	
	CSS2H-3920K-4L00x[4]	
	CSS2H-3920K-5L00x[4]	
Inductance	Material type R: < 3 nH Material type K: < 5 nH	
Resistance Tolerance	±1 %, ±5 %	

[1] Terminal temperature [2] For full TCR range, refer to TCR curve
[3] Tinned copper [4] CSS2H-3920K-4L00x and -5L00x are available upon request - contact factory

Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES
FOLLOW | SHUNT PULSE CALCULATOR | CONTACT

How to Order

CSS 2H - 3920 R - 1L00 F ___

- Model: CSS
- No. of Terminals & Style: 2H
- Size: 3920
- Material Type (See Part Number Table): R
- Resistance Code (milliohms): 1L00
  "L" represents decimal point
  (examples: L500 = .500 milliohms; 1L00 = 1.00 milliohms)
- Resistance Tolerance: F
  F = ±1 %
  J = ±5 %
- Packaging size: ___
  Blank = Standard 13 ″ reel
  E = Mini 7 ″ reel

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 %
Moisture Sensitivity Level		Level 1

CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.See 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.

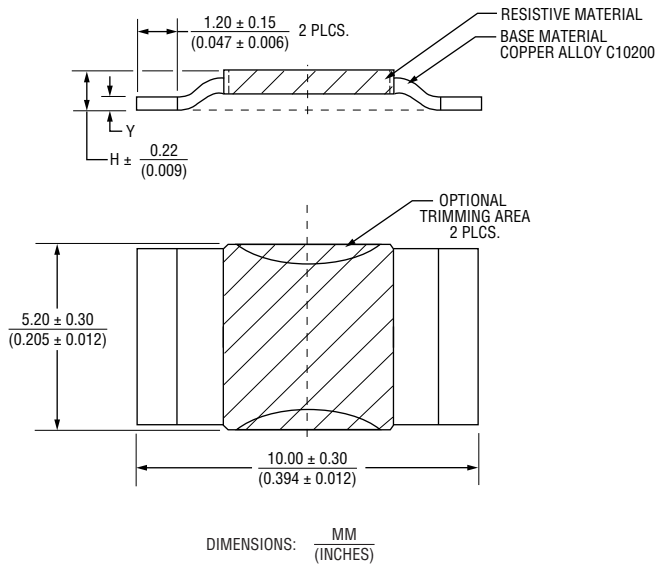
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Model CSS2H-3920 Series Current Sense Resistor

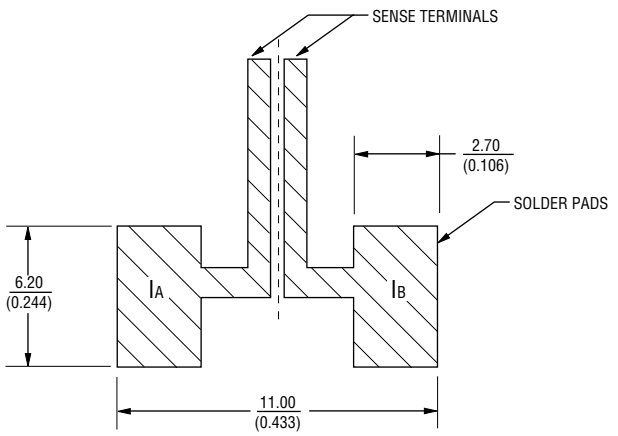
BOURNS®

Product Dimensions

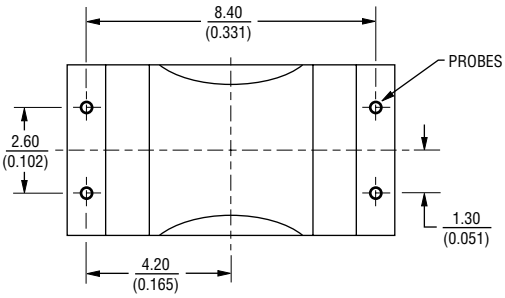


Part Number	Dimension H max.	Dimension Y max	Alloy
CSS2H-3920C-000	0.93 (0.037)	0.43 (0.017)	Cu/Tin
CSS2H-3920R-L200x	2.51 (0.099)	1.20 (0.047)	Cu-Mn
CSS2H-3920R-L300x	1.82 (0.072)	1.20 (0.047)	Cu-Mn
CSS2H-3920R-L500x	1.29 (0.051)	0.76 (0.030)	Cu-Mn
CSS2H-3920R-L700x	1.05 (0.041)	0.43 (0.017)	Cu-Mn
CSS2H-3920R-1L00x	0.93 (0.037)	0.43 (0.017)	Cu-Mn
CSS2H-3920K-2L00x	1.17 (0.046)	0.60 (0.024)	Fe-Cr
CSS2H-3920K-2L50x	1.04 (0.041)	0.50 (0.020)	Fe-Cr
CSS2H-3920K-3L00x	0.99 (0.039)	0.49 (0.019)	Fe-Cr
CSS2H-3920K-4L00x	0.85 (0.033)	0.43 (0.017)	Fe-Cr
CSS2H-3920K-5L00x	0.78 (0.031)	0.43 (0.017)	Fe-Cr

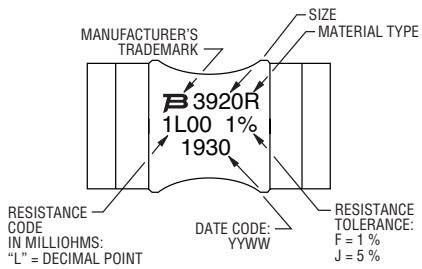
Recommended Pad Layout



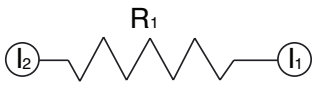
Recommended Measurements



Typical Part Marking



Electrical Schematic

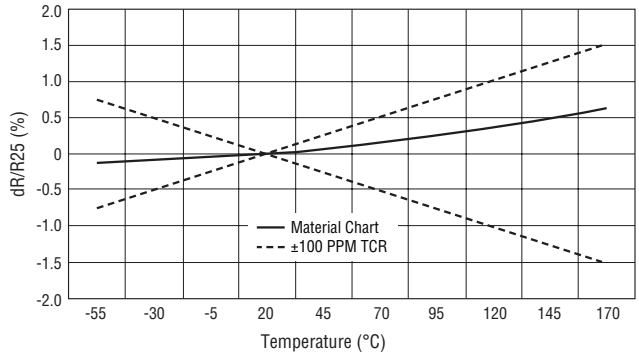


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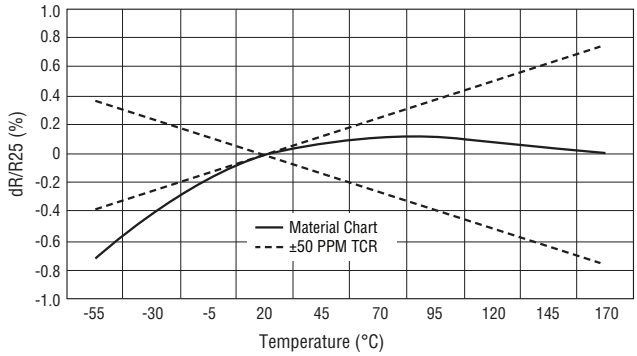
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TCR Curves

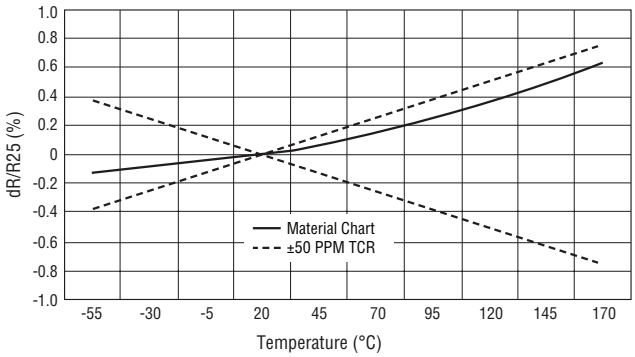
K-Type Resistive Material



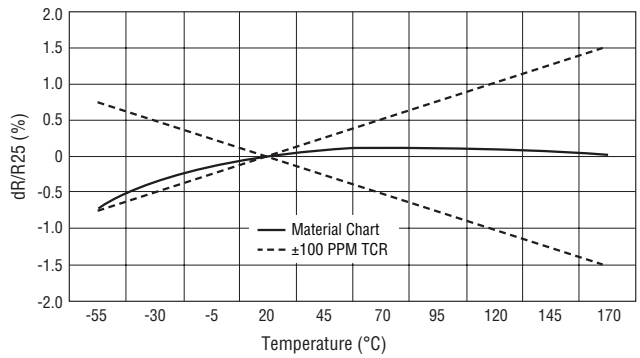
R-Type Resistive Material



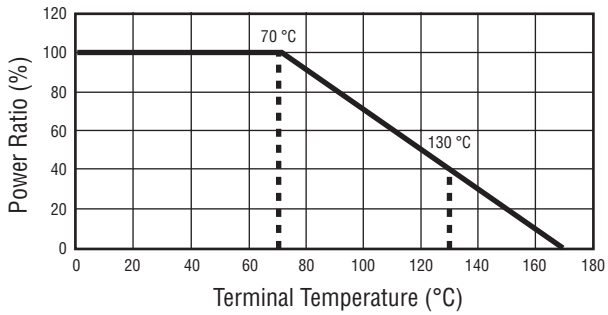
K-Type Resistive Material



R-Type Resistive Material



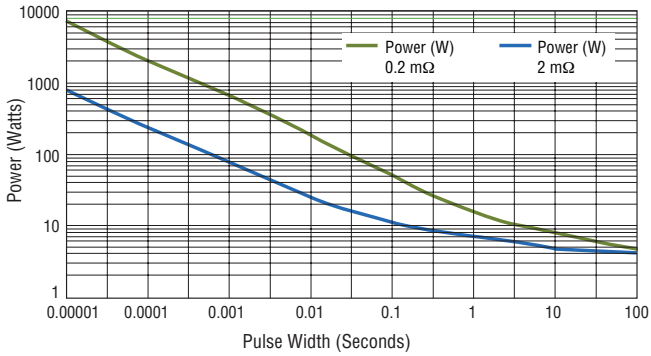
Terminal Temperature Derating Curve



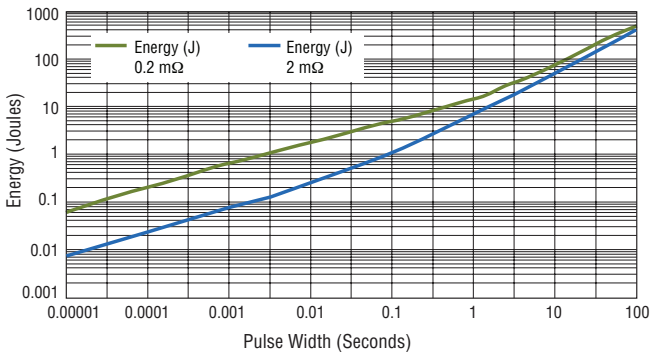
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Maximum Pulse Power



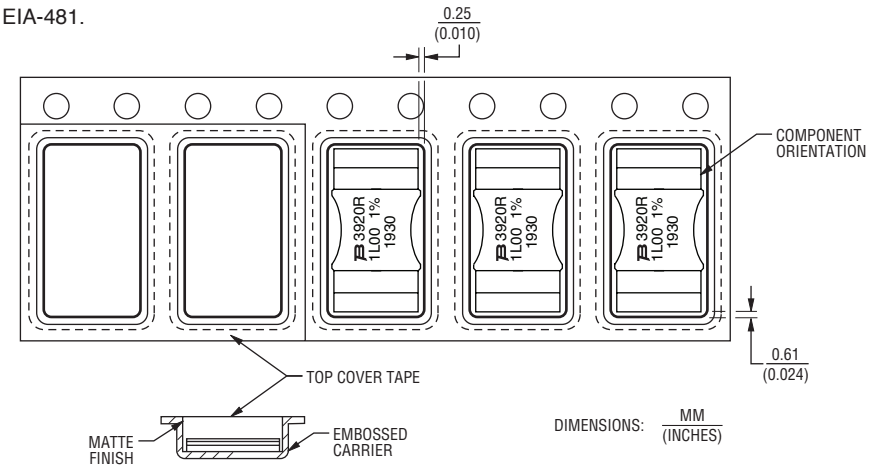
Maximum Pulse Energy



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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