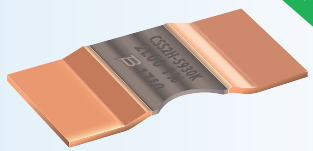
BOURNS®

AUTOMOTIVE GRADE

CSS2H-5930 SERIES

Current Sense Resistor



*RoHS COMPLIANT, **HALOGEN FREE & AEC-Q200 COMPLIANT

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

Sustainability

- Small size reduces material use
- Energy-saving low-power design
- Corrosion-resistant for longevity
- High efficiency, low power loss
- ISO 14001, low-impact energy

Product Overview

This automotive grade, surface mount resistor features an electron-beam-welded metal strip design that delivers high power capability and excellent long-term stability for precision current sensing applications. With an ultra-low resistance value, high power rating, and low inductance, the CSS2H-5930 Series is well suited for high-current applications. This current sense resistor is AEC-Q200 compliant, RoHS compliant, and halogen-free, ensuring reliable performance in harsh automotive and industrial environments.

Electrical Characteristics

Characteristic	Model CSS2H-5930 Series	
Resistance Range / Power Rating @70 °C [1]	CSS2H-5930C-000 [3]	< 0.2 mΩ / 160 A
	CSS2H-5930R-L100x	0.1 mΩ / 15 W
	CSS2H-5930R-L200x	0.2 mΩ / 15 W
	CSS2H-5930R-L300x	0.3 mΩ / 15 W
	CSS2H-5930R-L500x	0.5 mΩ / 8 W
	CSS2H-5930K-1L00x	1.0 mΩ / 9 W
	CSS2H-5930K-2L00x	2.0 mΩ / 7 W
	CSS2H-5930K-3L00x [4]	3.0 mΩ / 6 W
Operating Temperature Range	-55 to +170 °C	
TCR - Resistive Alloy [2] (20~60 °C)	±50 PPM/°C	
Temperature Coefficient including Copper Terminals (20~60 °C)	CSS2H-5930R-L100x	±275 PPM/°C
	CSS2H-5930R-L200x	±225 PPM/°C
	CSS2H-5930R-L300x	±150 PPM/°C
	CSS2H-5930R-L500x	±100 PPM/°C
	CSS2H-5930K-1L00x	±75 PPM/°C
	CSS2H-5930K-2L00x	±75 PPM/°C
	CSS2H-5930K-3L00x[4]	±75 PPM/°C
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-5930K-3L00x is available upon request - contact factory

How to Order

CSS 2H - 5930 K - 1L00 F __

- Model
- 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 milliohms)
- Resistance Tolerance F = ±1 % J = ±5 %
- Packaging Size Blank = Standard 13 ″ reel E = Mini 7 ″ reel

Contact Information

www.bourns.com	Phone	Email
Asia-Pacific	+886-2 2562-4117	asiacus@bourns.com
Europe	+36 88 885 877	eurocus@bourns.com
Mexico	+52 614 478 0400	mexicus@bourns.com
The Americas	+1-951 781-5500	americus@bourns.com

* 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.
Specifications are subject to change without notice.

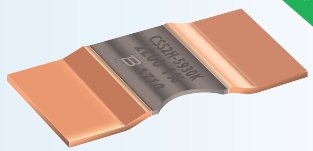
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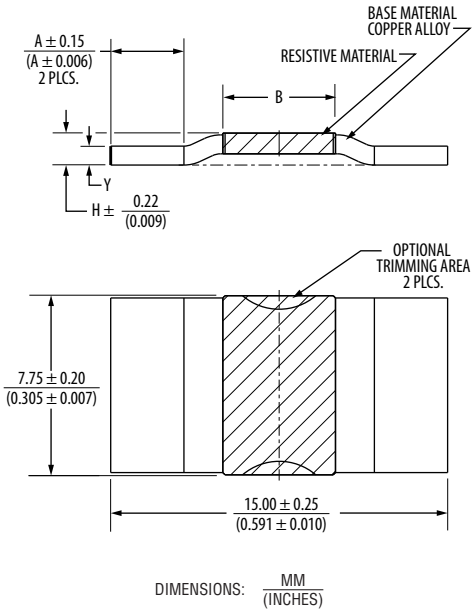


*RoHS COMPLIANT, **HALOGEN FREE & AEC-Q200 COMPLIANT

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

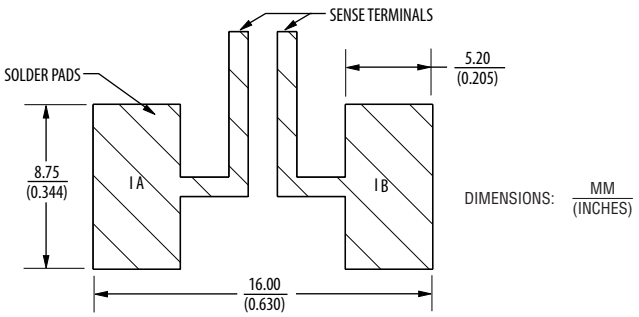
Product Dimensions



DIMENSIONS: MM / (INCHES)

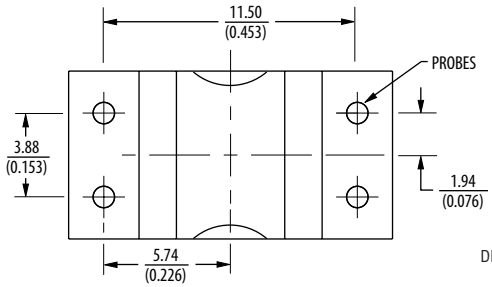
Part Number	Dimension				Alloy
	A	B	H	Y	
CSS2H-5930C-000	3.25 (0.128)	5.00 (0.197)	0.93 (0.037)	0.43 (0.017)	Cu/Tin
CSS2H-5930R-L100x	3.90 (0.153)	3.00 (0.118)	1.92 (0.072)	1.42 (0.047)	Cu-Mn
CSS2H-5930R-L200x	3.25 (0.128)	5.00 (0.197)	1.82 (0.072)	1.20 (0.047)	Cu-Mn
CSS2H-5930R-L300x	3.25 (0.128)	5.00 (0.197)	1.39 (0.055)	0.84 (0.033)	Cu-Mn
CSS2H-5930R-L500x	3.25 (0.128)	5.00 (0.197)	1.01 (0.040)	0.61 (0.024)	Cu-Mn
CSS2H-5930K-1L00x	3.25 (0.128)	5.00 (0.197)	1.41 (0.056)	0.91 (0.036)	Fe-Cr
CSS2H-5930K-2L00x	3.25 (0.128)	5.00 (0.197)	0.99 (0.039)	0.49 (0.019)	Fe-Cr
CSS2H-5930K-3L00x	3.25 (0.128)	5.00 (0.197)	0.80 (0.031)	0.43 (0.017)	Fe-Cr

Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

Recommended Measurements



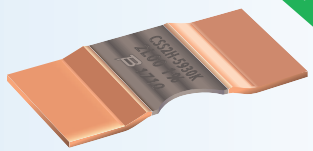
DIMENSIONS: MM / (INCHES)

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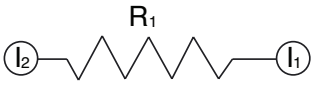
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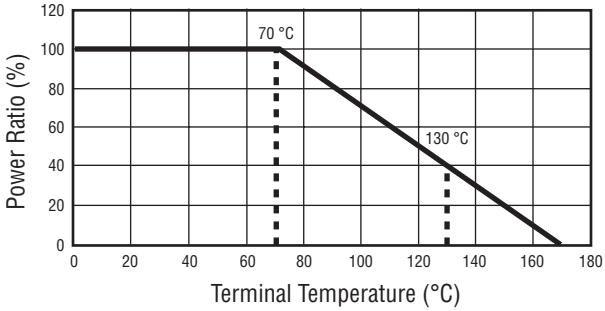


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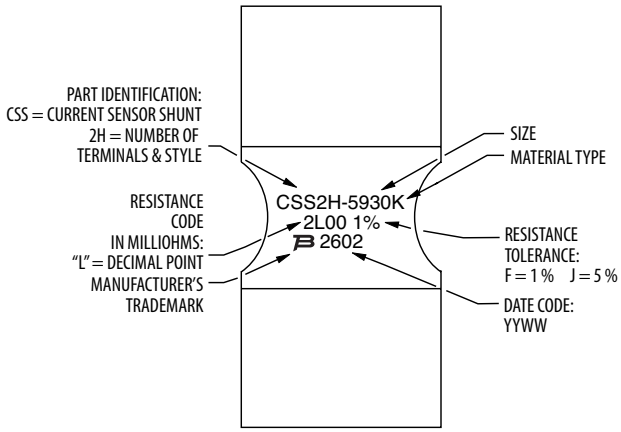
Electrical Schematic



Terminal Temperature Derating Curve

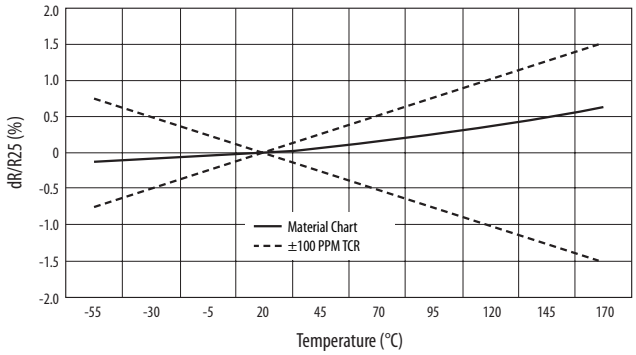


Typical Part Marking

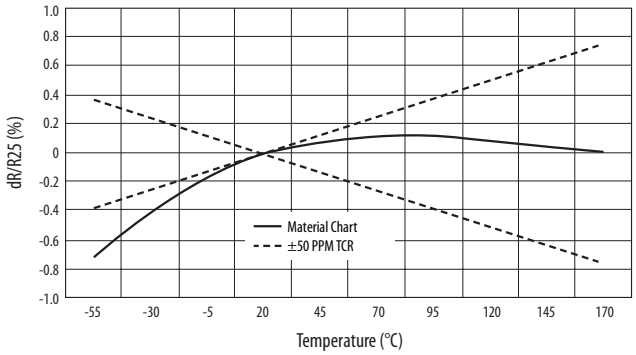


TCR Curves

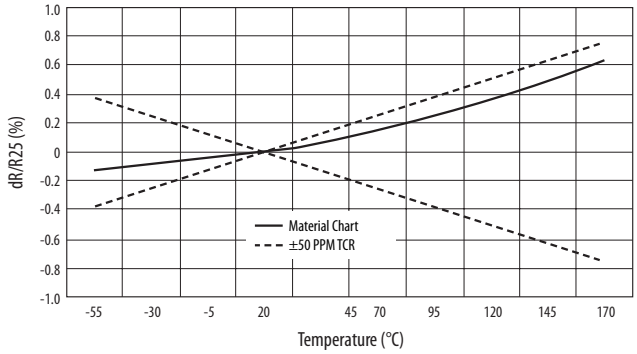
K-Type Resistive Material



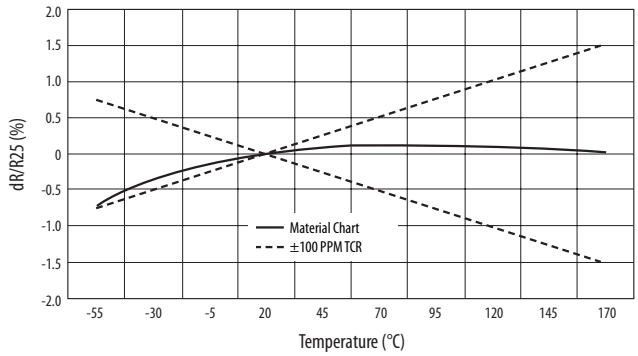
R-Type Resistive Material



K-Type Resistive Material



R-Type Resistive Material



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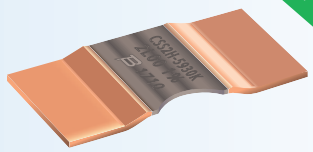
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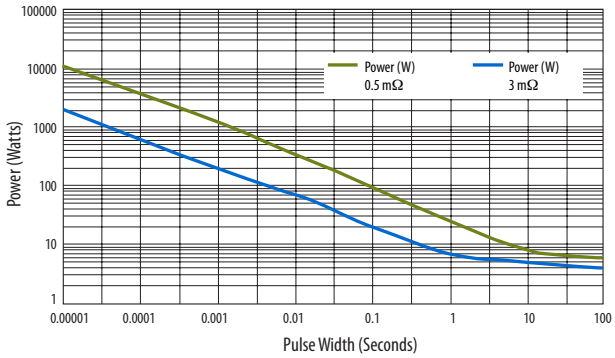
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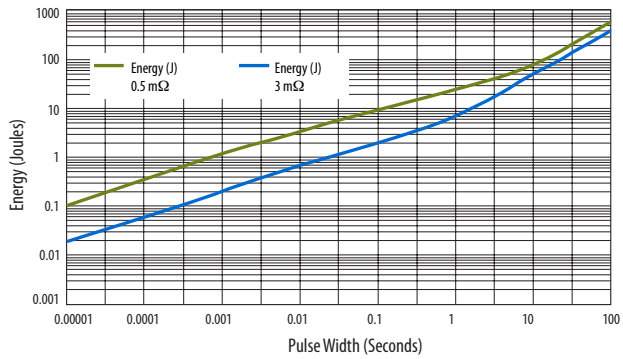


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Maximum Pulse Power



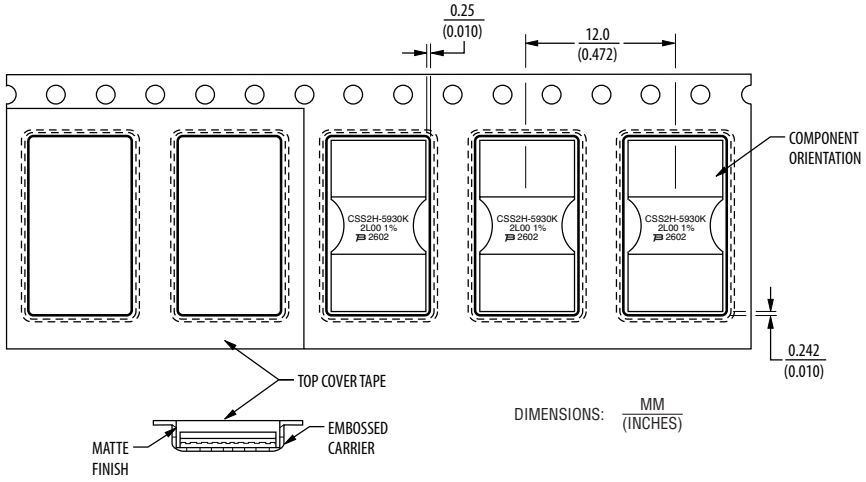
Maximum Pulse Energy



Packaging Specifications

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

Standard Reel Size:	13 inches
Tape Width:	24 mm
Quantity:	1,500 pcs. per reel
Pitch:	12 mm
Mini-Reel Size:	7 inches
Tape Width:	24 mm
Quantity:	500 pcs. per reel
Pitch:	12 mm



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