



## 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-5930 Series Current Sense Resistor

### Electrical Characteristics

| Characteristic                                                                                  | Model CSS2H-5930 Series      |                      |
|-------------------------------------------------------------------------------------------------|------------------------------|----------------------|
| Resistance Range /<br>Power Rating @ 70 °C <sup>1</sup> /<br>Power Rating @ 130 °C <sup>1</sup> | CSS2H-5930C-000 <sup>3</sup> | < 0.2 mΩ / 160 A     |
|                                                                                                 | CSS2H-5930R-L200x            | 0.2 mΩ / 15 W / 10 W |
|                                                                                                 | CSS2H-5930R-L300x            | 0.3 mΩ / 15 W / 10 W |
|                                                                                                 | CSS2H-5930R-L500x            | 0.5 mΩ / 8 W / 6 W   |
|                                                                                                 | CSS2H-5930K-1L00x            | 1.0 mΩ / 9 W / 6 W   |
|                                                                                                 | CSS2H-5930K-2L00x            | 2.0 mΩ / 7 W / 4 W   |
|                                                                                                 | CSS2H-5930K-3L00x            | 3.0 mΩ / 6 W / 4 W   |
| Operating Temperature Range                                                                     | -55 to +170 °C               |                      |
| TCR - Resistive Alloy <sup>2</sup>                                                              | ±50 PPM/°C (20~60 °C)        |                      |
| Temperature Coefficient<br>including<br>Copper Terminals                                        | CSS2H-5930R-L200x            | ±150 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            | ±75 PPM/°C           |
| Resistance Tolerance                                                                            | ±1 %, ±5 %                   |                      |

<sup>1</sup> Terminal temperature

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

<sup>3</sup> Tinned copper

### 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

### 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.

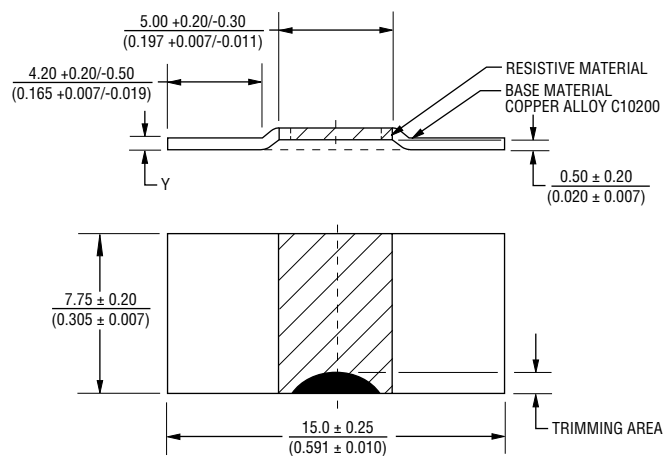
Specifications are subject to change without notice.

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.

# Model CSS2H-5930 Series Current Sense Resistor

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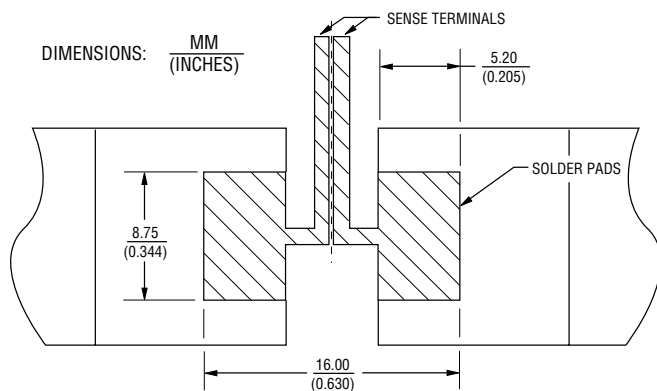
## Product Dimensions



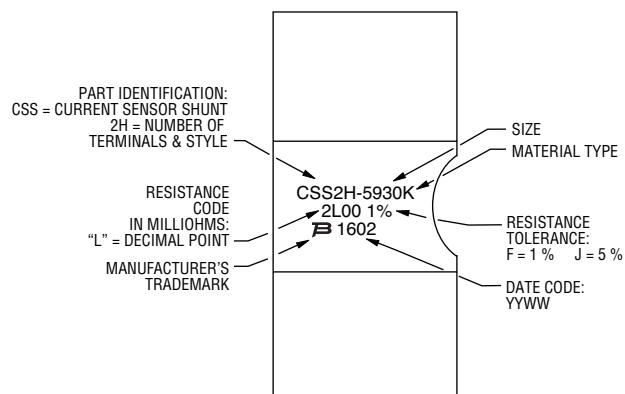
| Part Number       | Dimension Y                       |
|-------------------|-----------------------------------|
| CSS2H-5930C-000   | $0.42 \pm 0.1$<br>(0.016 ± 0.004) |
| CSS2H-5930R-L200x | $1.20 \pm 0.2$<br>(0.047 ± 0.008) |
| CSS2H-5930R-L300x | $0.84 \pm 0.1$<br>(0.033 ± 0.004) |
| CSS2H-5930R-L500x | $0.42 \pm 0.1$<br>(0.016 ± 0.004) |
| CSS2H-5930K-1L00x | $0.84 \pm 0.1$<br>(0.033 ± 0.004) |
| CSS2H-5930K-2L00x | $0.42 \pm 0.1$<br>(0.016 ± 0.004) |
| CSS2H-5930K-3L00x | $0.42 \pm 0.1$<br>(0.016 ± 0.004) |

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

## Recommended Pad Layout



## Typical Part Marking



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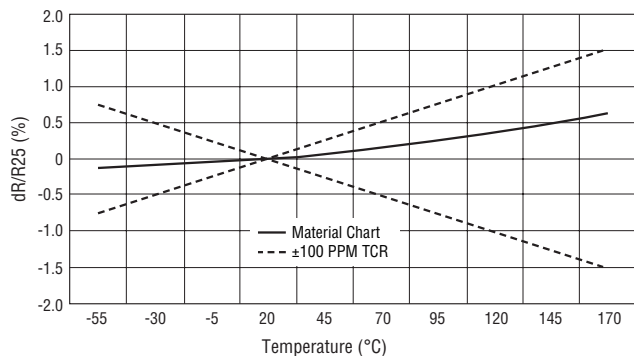
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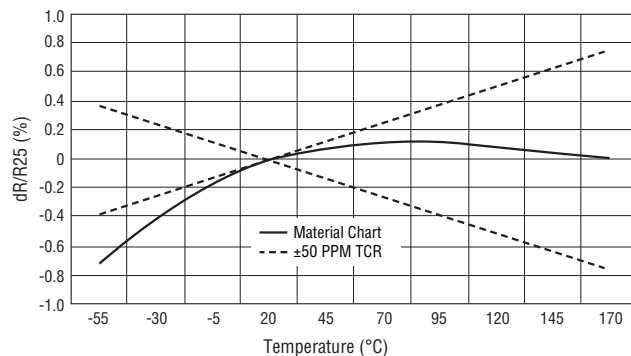
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## TCR Curves

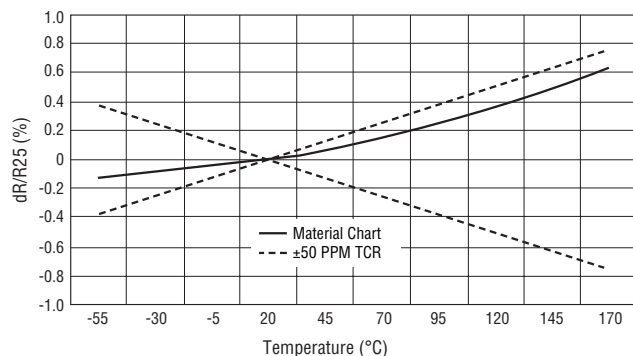
**K-Type Resistive Material**



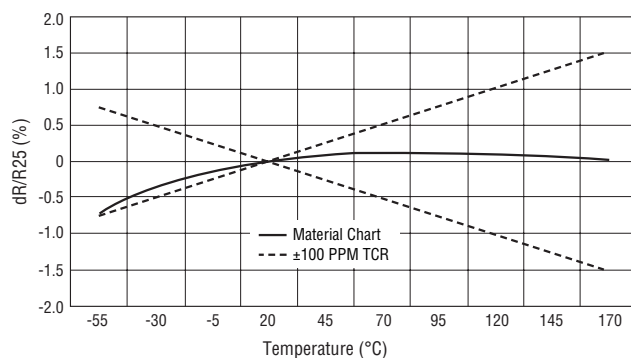
**R-Type Resistive Material**



**K-Type Resistive Material**

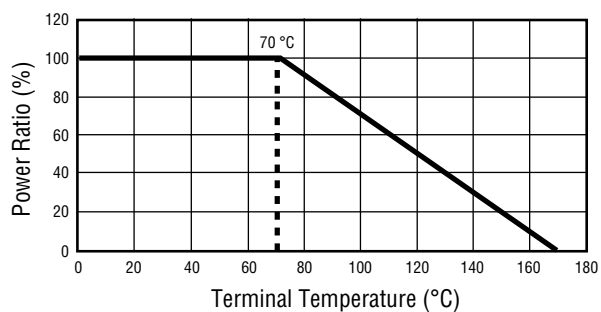


**R-Type Resistive Material**

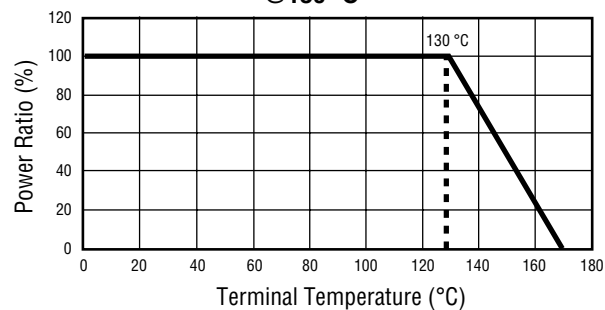


## Power Derating Curves

**@70 °C**



**@130 °C**



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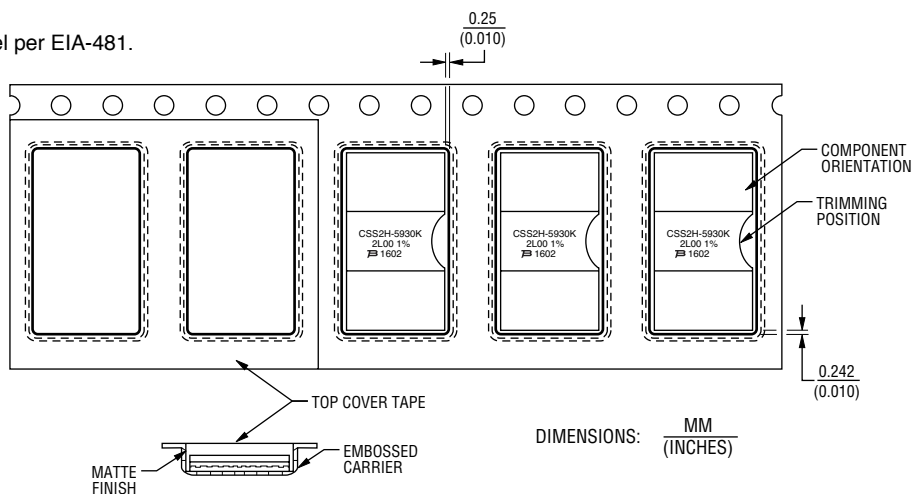
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### Packaging Specifications

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

Standard Reel Size: 13 inches  
Tape Width: 24 mm  
Quantity: 1,500 pcs. per reel

Mini-Reel Size: 7 inches  
Tape Width: 24 mm  
Quantity: 500 pcs. per reel



**BOURNS®**

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## Bourns:

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[CSS2H-5930K-3L00FE](#) [CSS2H-5930K-2L00F](#) [CSS2H-5930K-2L00FE](#)