



## 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

## Model CSS4J-4026 Series Current Sense Resistor

### Electrical Characteristics

| Characteristic  | Model CSS4J-4026 Series        |              |
|---|--------------------------------|--------------|
| Resistance Range /<br>Power Rating @70 °C <sup>1</sup> /<br>Power Rating @130 °C <sup>1</sup> | CSS4J-4026R-L200x <sup>3</sup> | 0.2 mΩ / 5 W |
|   | CSS4J-4026R-L300x              | 0.3 mΩ / 5 W |
|   | CSS4J-4026R-L500x              | 0.5 mΩ / 5 W |
|   | CSS4J-4026R-1L00x              | 1.0 mΩ / 4 W |
|   | CSS4J-4026K-2L00x              | 2.0 mΩ / 4 W |
|   | CSS4J-4026K-3L00x              | 3.0 mΩ / 3 W |
|   | CSS4J-4026K-5L00x              | 5.0 mΩ / 3 W |
| Operating Temperature Range   | -55 to +170 °C                 |              |
| TCR - Resistive Alloy <sup>2</sup>  | ±50 PPM/°C (20~60 °C)          |              |
| Temperature Coefficient   | CSS4J-4026R-L200x <sup>3</sup> | ±150 PPM/°C  |
|   | CSS4J-4026R-L300x              | ±100 PPM/°C  |
|   | CSS4J-4026R-L500x              | ±100 PPM/°C  |
|   | CSS4J-4026R-1L00x              | ±75 PPM/°C   |
|   | CSS4J-4026K-2L00x              | ±75 PPM/°C   |
|   | CSS4J-4026K-3L00x              | ±75 PPM/°C   |
|   | CSS4J-4026K-5L00x              | ±75 PPM/°C   |
| Inductance  | < 3 nH                         |              |
| Resistance Tolerance  | ±1 %, ±5 %                     |              |

<sup>1</sup> Terminal temperature

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

<sup>3</sup> CSS4J-4026R-L200F is available upon request - contact factory

### How to Order

**CSS 4J - 4026 R - 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 %             |
| Moisture Sensitivity Level   |  | Level 1            |

\* 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.

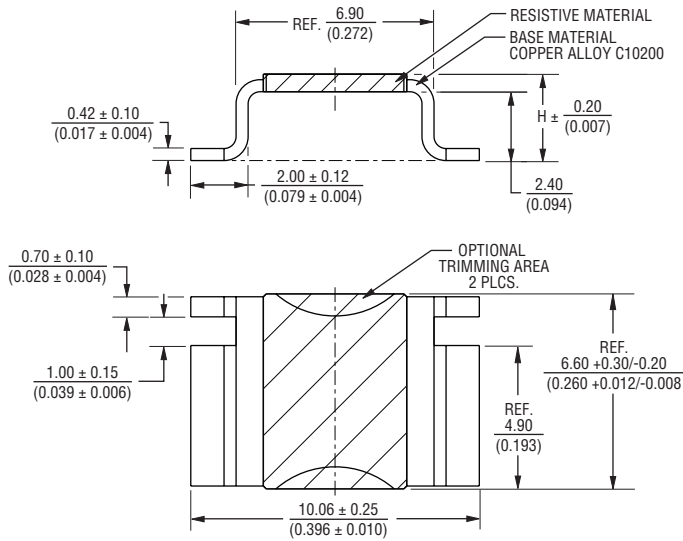
Users should verify actual device performance in their specific applications.

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# Model CSS4J-4026 Series Current Sense Resistor

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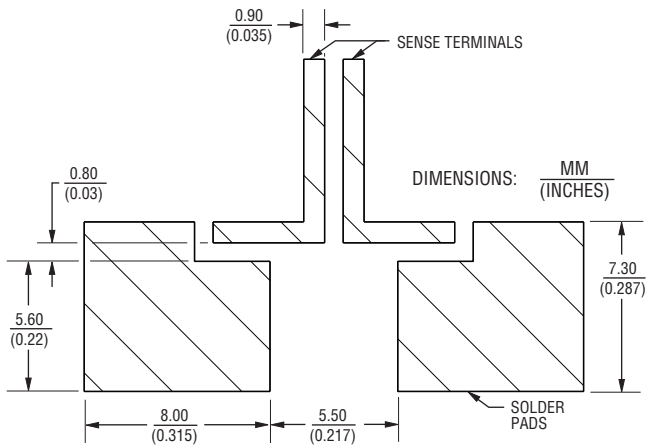
## Product Dimensions



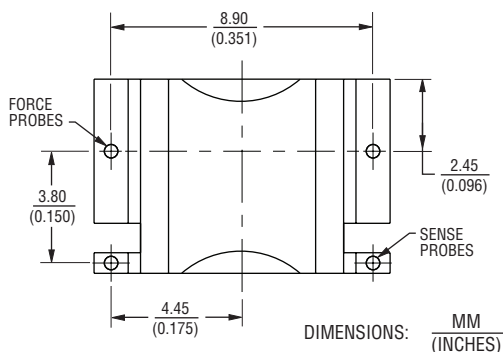
| Part Number       | Dimension H            | Alloy |
|-------------------|------------------------|-------|
| CSS4J-4026R-L200x | $\frac{3.59}{(0.14)}$  | Cu-Mn |
| CSS4J-4026R-L300x | $\frac{3.45}{(0.136)}$ | Cu-Mn |
| CSS4J-4026R-L500x | $\frac{3.01}{(0.119)}$ | Cu-Mn |
| CSS4J-4026R-1L00x | $\frac{2.82}{(0.111)}$ | Cu-Mn |
| CSS4J-4026K-2L00x | $\frac{2.94}{(0.116)}$ | Fe-Cr |
| CSS4J-4026K-3L00x | $\frac{2.82}{(0.111)}$ | Fe-Cr |
| CSS4J-4026K-5L00x | $\frac{2.82}{(0.111)}$ | Fe-Cr |

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

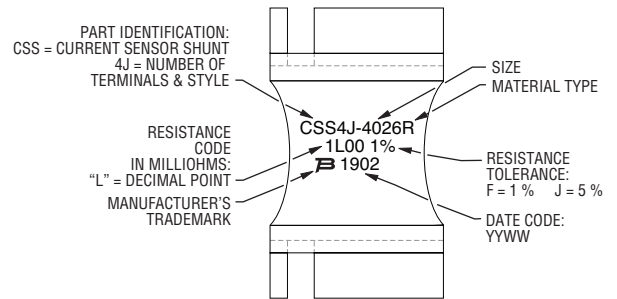
## Recommended Pad Layout



## Recommended Measurements



## Typical Part Marking



## Electrical Schematic



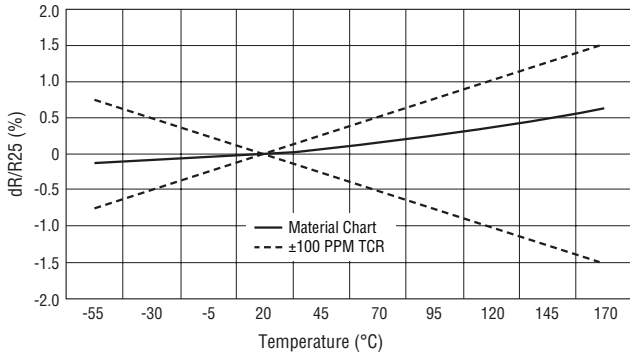
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# Model CSS4J-4026 Series Current Sense Resistor

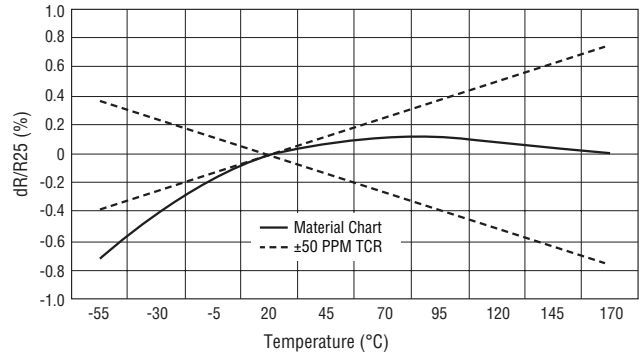


## TCR Curves

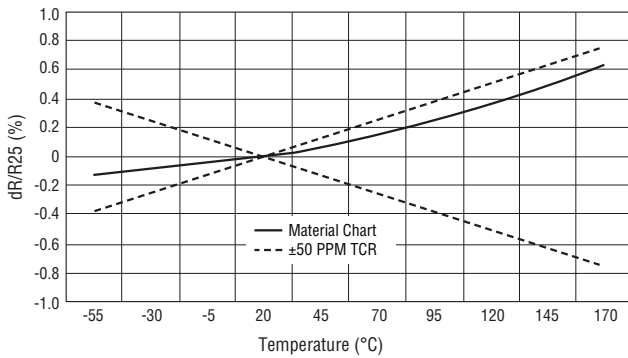
K-Type Resistive Material



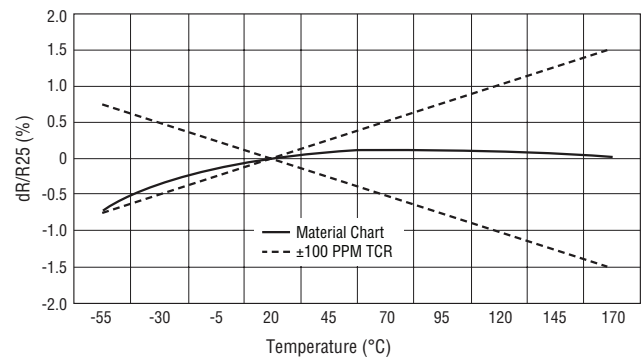
R-Type Resistive Material



K-Type Resistive Material

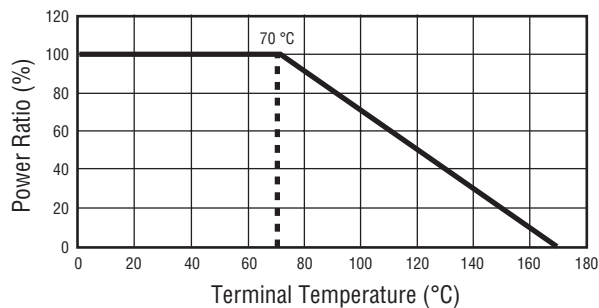


R-Type Resistive Material

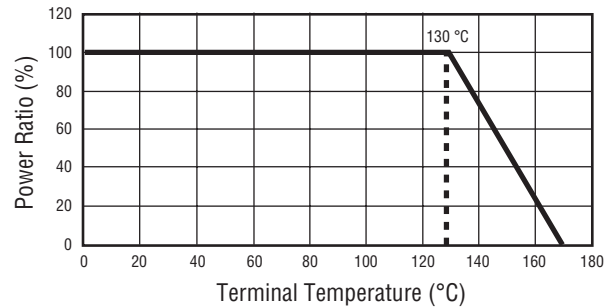


## Power Derating Curves

@ 70 °C



@ 130 °C



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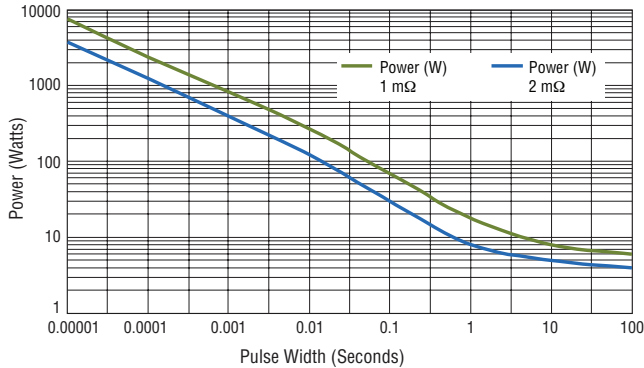
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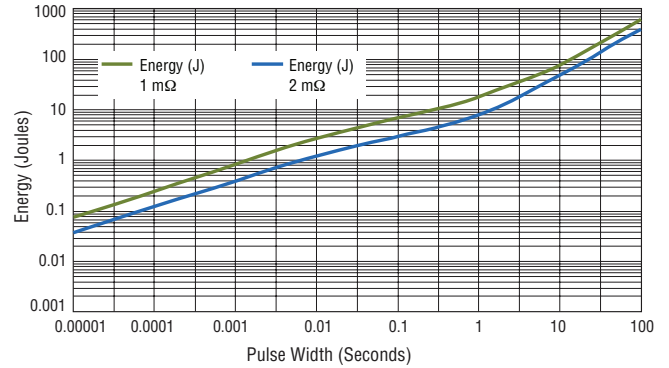
# Model CSS4J-4026 Series Current Sense Resistor

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## Maximum Pulse Power



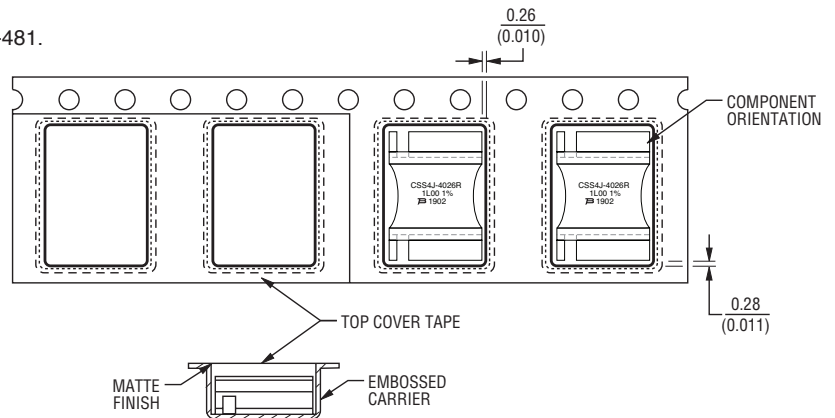
## Maximum Pulse Energy



## Packaging Specifications

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

- Standard Reel Size: 13 inches
- Tape Width: 16 mm
- Quantity: 1,500 pcs. per reel
  
- Mini-Reel Size: 7 inches
- Tape Width: 16 mm
- Quantity: 400 pcs. per reel



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

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