# Model CSM2F-8518 Series Current Sense Resistor w/Tinned Terminals

## Features
- Tinned terminals
- Up to 36 W permanent power
- High pulse power rating
- Maximum fastening torque: 10 Nm
- Customized versions available
- AEC-Q200 and RoHS* compliant

## Applications
- Current sensing for battery management systems
- Current sensing in bus bars
- Current sensing in welding equipment
- Frequency converters

## Electrical Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Model CSM2F-8518 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Range / Power Rating @ 70 °C**</td>
<td>50 µΩ / 36 W</td>
</tr>
<tr>
<td></td>
<td>100 µΩ / 36 W</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 °C to +170 °C</td>
</tr>
<tr>
<td>TCR on Test Points</td>
<td>±150 ppm/°C for 50 µΩ</td>
</tr>
<tr>
<td></td>
<td>±125 ppm/°C for 100 µΩ</td>
</tr>
<tr>
<td>TCR Resistance Alloy***</td>
<td>&lt; 50 ppm/°C</td>
</tr>
<tr>
<td>Thermal EMF (µV/K)</td>
<td>&lt; 0.25 for 50 µΩ</td>
</tr>
<tr>
<td></td>
<td>&lt; 1.50 for 100 µΩ</td>
</tr>
<tr>
<td>Resistance Tolerance</td>
<td>±1 %, ±5 %</td>
</tr>
</tbody>
</table>

** Terminal temperature
*** For full TCR range, refer to TCR curve.

## Environmental Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Test Condition</th>
<th>±TR Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Shock</td>
<td>-55 to +150 °C / 1000 cycles</td>
<td>±1.0 %</td>
</tr>
<tr>
<td>Resistance to Soldering Heat</td>
<td>+260 °C / 10 seconds</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>High Temperature Exposure</td>
<td>+170 °C / 1000 hours</td>
<td>±1.5 %</td>
</tr>
<tr>
<td>Low Temperature Storage</td>
<td>-65 °C / 24 hours</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Biased Humidity Test</td>
<td>+85 °C, 85 % RH, 10 % bias, 1000 hours</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Mechanical Shock</td>
<td>100 g, 6 milliseconds, 5 pulses</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Vibration, High Frequency</td>
<td>10-2000 Hz in 1 minute, 3 directions, 12 hours</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Load Life</td>
<td>1000 hours, derated at 70 °C</td>
<td>±1.0 %</td>
</tr>
<tr>
<td>Solderability</td>
<td>J-STD-002</td>
<td>95 % coverage min.</td>
</tr>
</tbody>
</table>

## How to Order

- **Model**
- **No. of Terminals & Style**
- **Size (Metric)**
- **Resistance Code (Milliohms)**
  - "L" Represents Decimal Point
  - L050 = 50 MicroOhms
- **Resistance Tolerance**
  - F = ±1 %
  - J = ±5 %
- **Packaging**
  - 0 = Bulk Pack (50 pcs. per bag)
  - T = Tray Pack (32 pcs. per tray)
- **Surface Finishing**
  - 1 = Tinned Terminals

## Additional Information

Click these links for more information:

- PRODUCT
- TECHNICAL LIBRARY
- INVENTORY
- SAMPLES
- CONTACT

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**WARNING Cancer and Reproductive Harm**

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)
Model CSM2F-8518 Series Current Sense Resistor w/Tinned Terminals

Product Dimensions

NOTES:
1. Tinned Terminals: 100 % Sn, RoHS Complaint, JESD201 Class-2, ST200 Process, 2.5 -8 micrometers, Ni underplate 1.5- 4 micrometers.
2. Base Material Copper: C10200 Temper 1/2 Hard.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Dim A (MM)</th>
<th>Dim B (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSM2F-8518-L050Jxx</td>
<td>4.70</td>
<td>7.87</td>
</tr>
<tr>
<td>CSM2F-8518-L100Jxx</td>
<td>9.40</td>
<td>12.57</td>
</tr>
</tbody>
</table>

TCR Curves

Temperature Dependence for Resistive Material

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**Power Derating Curve**

<table>
<thead>
<tr>
<th>Terminal Temperature (°C)</th>
<th>Power Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Packaging Specifications**

- **Bulk Pack**: 50 pcs. per plastic bag
- **Tray Pack**: 32 pcs. per high impact polystyrene tray

**Size**: 246 mm x 246 mm (9.685 in. x 9.685 in.)

**Reference Pad for SMD Mounting**

**General Specifications**

- **Moisture Sensitivity Level**: 1
- **ESD Classification**: Level 6
  - per AEC-Q200-002, ≥ 25,000 V air discharge

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