Power Metal Strip® Battery Shunt Resistor,
Very Low Value (50 μΩ, 100 μΩ, 125 μΩ, and 250 μΩ)

FEATURES
- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Very low inductance (< 5 nH)
- Low thermal EMF (as low as < 1 μV/°C)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

ADDITIONAL RESOURCES
3D Models

STANDARD ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>GLOBAL MODEL</th>
<th>SIZE</th>
<th>POWER RATING</th>
<th>RESISTANCE VALUE RANGE (1)</th>
<th>RESISTANCE VALUES CURRENTLY AVAILABLE (2)</th>
<th>WEIGHT (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSBS8518</td>
<td>8518</td>
<td>36</td>
<td>50μ to 1000μ</td>
<td>50μ, 100μ, 125μ, 250μ</td>
<td>50μ = 37.9, 100μ / 125μ = 36.5, 250μ = 33.7</td>
</tr>
</tbody>
</table>

Notes
(1) Please reference WSBS8518...34 datasheet (www.vishay.com/doc?30354) for resistance values 500 μΩ to 1000 μΩ
(2) Other values may be available, contact factory

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>UNIT</th>
<th>RESISTOR CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature coefficient</td>
<td>ppm/°C</td>
<td>± 200 for 50 μΩ</td>
</tr>
<tr>
<td>Temperature coefficient (element material)</td>
<td>ppm/°C</td>
<td>± 175 for 100 μΩ, 125 μΩ</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>°C</td>
<td>± 110 for 250 μΩ</td>
</tr>
<tr>
<td>Thermal EMF</td>
<td>μV/°C</td>
<td>&lt; 20</td>
</tr>
<tr>
<td>Maximum current rating</td>
<td>A</td>
<td>(P/R)²/²</td>
</tr>
</tbody>
</table>

GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSBS8518L1250JK (WSBS8518, 0.000125 Ω, ± 5 %, bulk pack)

W S B S 8 5 1 8 L 1 2 5 0 J K

GLOBAL MODEL RESISTANCE VALUE
- L = mΩ
  - L0500 = 0.000050 Ω
  - L1000 = 0.000100 Ω
  - L1250 = 0.000125 Ω
  - L2500 = 0.000250 Ω

TOLERANCE CODE
- J = ± 5 %
- K = ± 10 %

PACKAGING CODE
- K = bulk pack
- T = tray pack

SPECIAL
- (dash number)
- (up to 2 digits)
- from 1 to 99 as applicable
**DIMENSIONS** in inches (millimeters)

Diagram showing dimensions:
- 0.078 (2.0)
- 0.118 (3.0)
- 0.492 (12.5)
- 2.362 (60)
- 0.078 (2) x 45°
- 0.354 (9.0)
- 0.708 ± 0.008 (16)
- Ø 0.276 (7.0)
- 3.346 ± 0.015 (85.0 ± 0.4)

**DERATING**

Graph showing derating with Ambient Temperature in °C.

**CALIBRATION CUT**

- Ø 0.276 (7.0) 2 PLACES
- Voltage Test Points
- 3.346 ± 0.015 (85.0 ± 0.4)

**TOLERANCES ON DECIMALS**

0.005 [x ± 0.1]

**UNLESS OTHERWISE LISTED**

**PERFORMANCE**

<table>
<thead>
<tr>
<th>TEST</th>
<th>CONDITIONS OF TEST</th>
<th>TEST LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal shock</td>
<td>-55 °C to +150 °C, 1000 cycles, 15 min at each extreme</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>Short time overload</td>
<td>5 x rated power for 5 s</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>Low temperature storage</td>
<td>-65 °C for 24 h</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>High temperature exposure</td>
<td>1000 h at +170 °C</td>
<td>± 1.0 % ∆R</td>
</tr>
<tr>
<td>Bias humidity</td>
<td>+85 °C, 85 % RH, 10 % bias, 1000 h</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>Mechanical shock</td>
<td>100 g’s for 6 ms, 5 pulses</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>Vibration</td>
<td>Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h</td>
<td>± 0.5 % ∆R</td>
</tr>
<tr>
<td>Load life</td>
<td>1000 h at +70 °C, 1.5 h “ON”, 0.5 h “OFF”</td>
<td>± 1.0 % ∆R</td>
</tr>
<tr>
<td>Moisture resistance</td>
<td>MIL-STD-202, method 106, 0 % power, 7b not required</td>
<td>± 0.5 % ∆R</td>
</tr>
</tbody>
</table>

**RESISTANCE VALUE (μΩ)** | **ELEMENT MATERIAL** | **REFERENCE** | **A** ± 0.005 [± 0.13] | **B**
---|----------------------|--------------|------------------|---
50 | Mn-Cu | 0.145 [3.68] | 0.270 [8.71] |
100 | Mn-Cu | 0.370 [9.40] | 0.495 [12.57] |
125 | Mn-Cu | 0.480 [12.19] | 0.605 [15.37] |
250 | Mn-Cu | 0.900 [22.86] | 1.025 [26.04] |
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