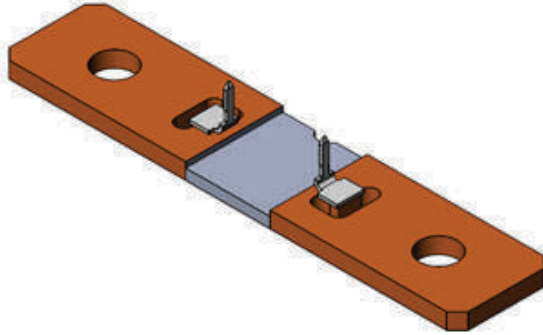


Power Metal Strip® Shunt Resistor With Sense Pins, Low TCR (Down to $< \pm 10 \text{ ppm}/^\circ\text{C}$), Very Low Value (100 $\mu\Omega$, 500 $\mu\Omega$, and 1000 $\mu\Omega$)



FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal nickel-chrome alloy resistive element with unique design for low TCR (down to $\pm 10 \text{ ppm}/^\circ\text{C}$)
- Very low inductance ($< 5 \text{ nH}$)
- Low thermal EMF (as low as $< 1.25 \mu\text{V}/^\circ\text{C}$)
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

DESIGN SUPPORT TOOLS click logo to get started



| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | |
|------------------------------------|------|---|-----------------------|---------------------------------------|---|--------------------------|
| GLOBAL MODEL | SIZE | POWER RATING $P_{70^\circ\text{C}}$ W | TOLERANCE $\pm \%$ | RESISTANCE VALUE RANGE Ω | RESISTANCE VALUES CURRENTLY AVAILABLE ⁽¹⁾ Ω | WEIGHT (typical) g |
| WSBS8518...35 | 8518 | 36 | 5, 10 | 100 μ to 1000 μ | 100 μ | 36.5 |
| WSBS8518...35 | 8518 | 25 | 5, 10 | 100 μ to 1000 μ | 500 μ | 33.9 |
| WSBS8518...35 | 8518 | 20 | 5, 10 | 100 μ to 1000 μ | 1000 μ | 31.8 |

Note

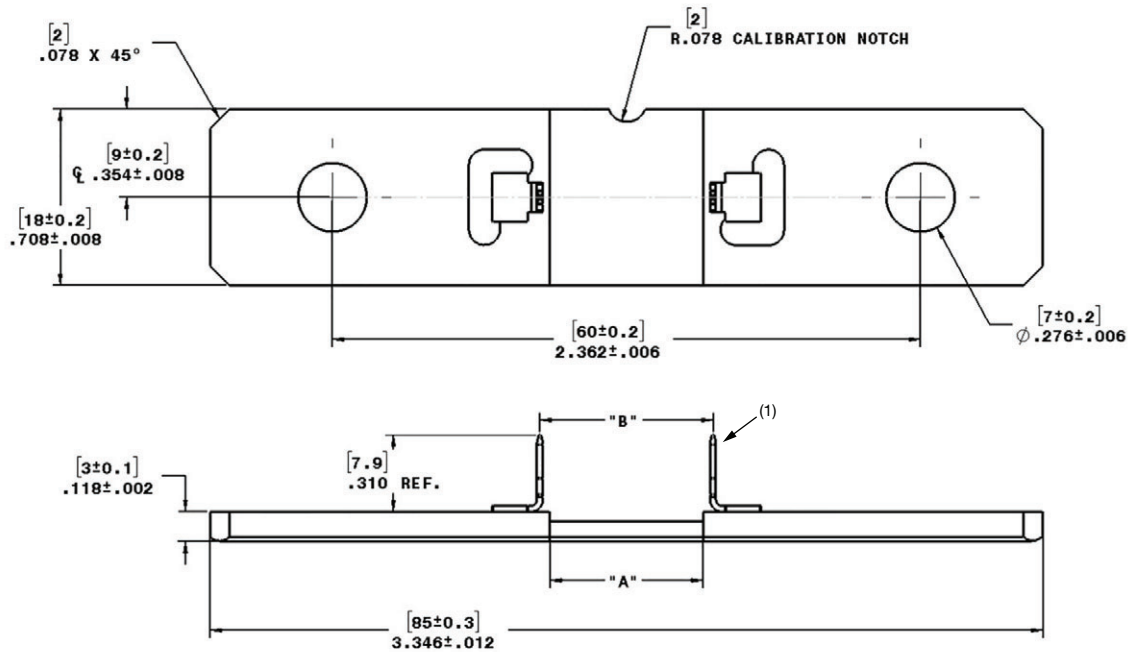
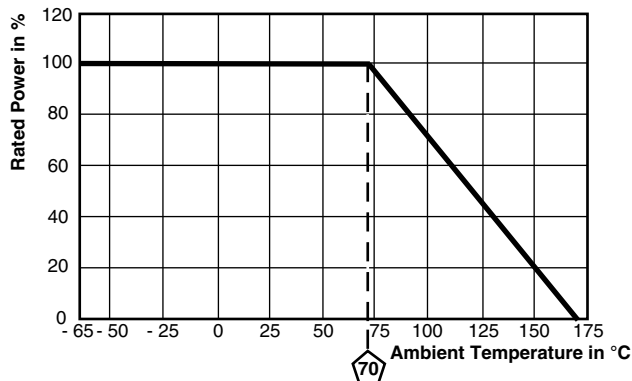
⁽¹⁾ Other values may be available, contact factory

| TECHNICAL SPECIFICATIONS | | |
|-----------------------------|------------------------------|-------------------------------|
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
| Temperature coefficient | ppm/ $^\circ\text{C}$ | ± 65 for 100 $\mu\Omega$ |
| | | ± 10 for 500 $\mu\Omega$ |
| | | ± 25 for 1000 $\mu\Omega$ |
| Operating temperature range | $^\circ\text{C}$ | -65 to +170 |
| Thermal EMF | $\mu\text{V}/^\circ\text{C}$ | < 1.25 |
| Inductance | nH | < 5 |
| Maximum current rating | A | $(P/R)^{1/2}$ |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | |
|--|---|---|---|---|-----------------------------------|---|--------------------------------|---|---|--------------------------------------|---|---|---|---|---|
| GLOBAL PART NUMBERING: WSBS8518L5000JT35 (WSBS8518...35, 0.0005 Ω , $\pm 5 \%$, tray pack) | | | | | | | | | | | | | | | |
| W | S | B | S | 8 | 5 | 1 | 8 | L | 5 | 0 | 0 | J | T | 3 | 5 |
| GLOBAL MODEL | | RESISTANCE VALUE | | | TOLERANCE CODE | | PACKAGING CODE | | | SPECIAL | | | | | |
| WSBS8518 | | L = m Ω L1000 = 0.000100 Ω L5000 = 0.000500 Ω 1L000 = 0.001000 Ω | | | J = $\pm 5 \%$ K = $\pm 10 \%$ | | K = bulk pack T = tray pack | | | 35 = low TCR and sense pins attached | | | | | |

PATENT(S): www.vishay.com/patents

This Vishay product is protected by one or more United States and International patents.

DIMENSIONS in inches (millimeters)

DERATING

 TOLERANCES ON DECIMALS
 $.xxx \pm 0.005$ [$x \pm 0.1$]

UNLESS OTHERWISE LISTED

| RESISTANCE VALUE ($\mu\Omega$) | ELEMENT MATERIAL | A REFERENCE | B ± 0.005 [± 0.13] |
|----------------------------------|------------------|---------------|------------------------------|
| 100 | Ni-Cr | 0.120 [3.05] | 0.135 [3.43] |
| 500 | Ni-Cr | 0.615 [15.62] | 0.695 [17.65] |
| 1000 | Ni-Cr | 0.900 [22.86] | 0.980 [24.89] |

Note

(1) Minimum pull strength of 200 N

| PERFORMANCE | | |
|---------------------------|--|----------------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS |
| Thermal shock | -55 °C to +150 °C, 1000 cycles, 15 min at each extreme | $\pm 0.5\% \Delta R$ |
| Short time overload | 5x rated power for 5 s | $\pm 0.5\% \Delta R$ |
| Low temperature storage | -65 °C for 24 h | $\pm 0.2\% \Delta R$ |
| High temperature exposure | 1000 h at +170 °C | $\pm 1.0\% \Delta R$ |
| Bias humidity | +85 °C, 85 % RH, 10 % bias, 1000 h | $\pm 0.5\% \Delta R$ |
| Mechanical shock | 100 g's for 6 ms, 5 pulses | $\pm 0.2\% \Delta R$ |
| Vibration | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | $\pm 0.2\% \Delta R$ |
| Load life | 1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF" | $\pm 1.0\% \Delta R$ |
| Moisture resistance | MIL-STD-202, method 106, 0 % power, 7b not required | $\pm 0.2\% \Delta R$ |



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