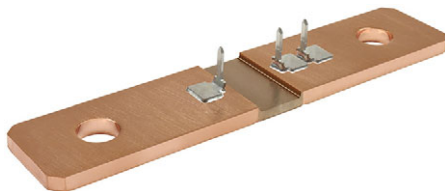




Power Metal Strip® Shunt Resistor With Three Sense Pins, Very Low Value (50 $\mu\Omega$, 100 $\mu\Omega$, 125 $\mu\Omega$, and 250 $\mu\Omega$)



FEATURES

- High power to resistor size ratio
- Sense pins allow for consistent contact location
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 nH)
- Low thermal EMF (< 1 $\mu\text{V}/^\circ\text{C}$ available)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

LINKS TO ADDITIONAL RESOURCES



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...40 | 8518 | 36 | 5, 10 | 50 μ to 1000 μ | 50 μ , 100 μ , 125 μ , 250 μ | 50 μ = 38.6, 100 μ / 125 μ = 37.1 250 μ = 34.4 |

Note

(1) Other values may be available, contact factory

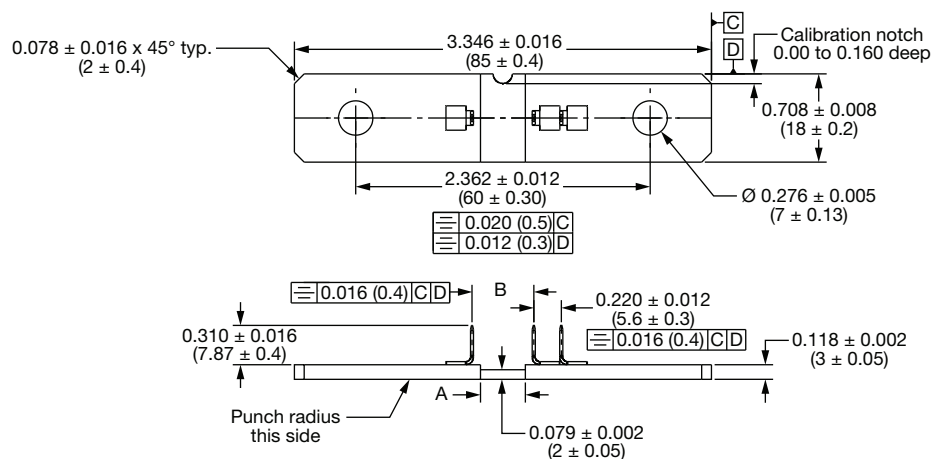
TECHNICAL SPECIFICATIONS

| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
|--|------------------------------|--|
| Temperature coefficient | ppm/°C | ± 200 for 50 $\mu\Omega$ |
| | | ± 175 for 100 $\mu\Omega$ / 125 $\mu\Omega$ |
| | | ± 110 for 250 $\mu\Omega$ |
| Temperature coefficient (element material) | ppm/°C | ± 20 |
| Thermal EMF | $\mu\text{V}/^\circ\text{C}$ | < 1 for 50 $\mu\Omega$ and < 3 for 100 $\mu\Omega$, 125 $\mu\Omega$, 250 $\mu\Omega$ |
| Inductance | nH | < 5 |
| Operating temperature range | °C | -65 to +170 |
| Maximum current rating | A | $(P/R)^{1/2}$ |

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8518L1000JT40 (WSBS8518...40, 0.0001 Ω , $\pm 5 \%$, tray pack)

| | | | | | | | | | | | | | | | | |
|--------------|---|---|---|--|---|---|---|-------------------------|---|--------------------------------|---|---|---|--------------------------------|---|---|
| W | S | B | S | 8 | 5 | 1 | 8 | L | 1 | 0 | 0 | 0 | J | T | 4 | 0 |
| GLOBAL MODEL | | | | RESISTANCE VALUE | | | | TOLERANCE CODE | | PACKAGING CODE | | | | SPECIAL | | |
| WSBS8518 | | | | L = mΩ L0500 = 0.000050 Ω L1000 = 0.000100 Ω L1250 = 0.000125 Ω L2500 = 0.000250 Ω | | | | J = ± 5 % K = ± 10 % | | K = bulk pack T = tray pack | | | | 40 = three sense pins attached | | |

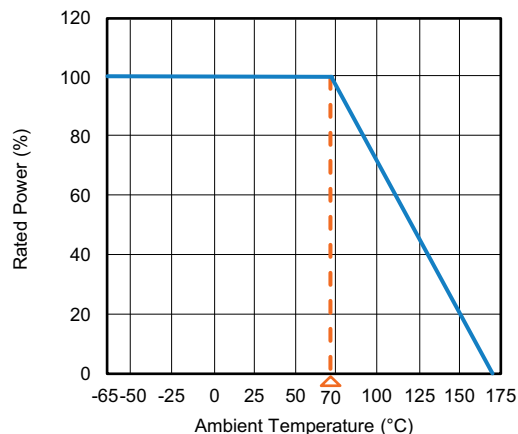
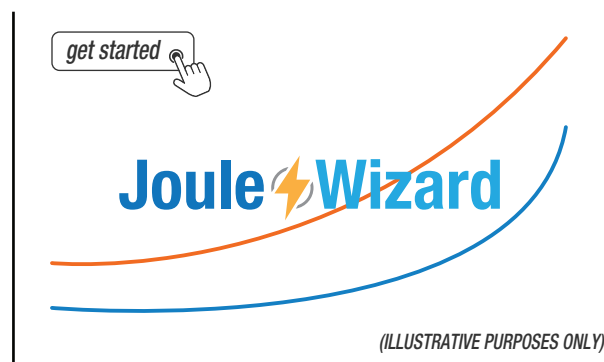
**DIMENSIONS** in inches (millimeters)**Note**

- Minimum pull strength of sense pins is 200 N

| RESISTANCE VALUE ($\mu\Omega$) | ELEMENT MATERIAL | A REFERENCE | B $\pm 0.005 (\pm 0.13)$ |
|----------------------------------|------------------|---------------|--------------------------|
| 50 | Mn-Cu | 0.145 (3.68) | 0.135 (3.43) |
| 100 | Mn-Cu | 0.370 (9.40) | 0.495 (12.57) |
| 125 | Mn-Cu | 0.480 (12.19) | 0.585 (14.86) |
| 250 | Mn-Cu | 0.900 (22.86) | 1.028 (26.11) |

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

UNLESS OTHERWISE LISTED

DERATING**PULSE CAPABILITY**

www.vishay.com/en/resistors/joulewizard/

| 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 | 5 x rated power for 5 s | $\pm 0.5 \% \Delta R$ |
| Low temperature storage | -65 °C for 24 h | $\pm 0.5 \% \Delta R$ |
| 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 | $\pm 0.5 \% \Delta R$ |
| Vibration | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | $\pm 0.5 \% \Delta R$ |
| 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 | $\pm 0.5 \% \Delta R$ |



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