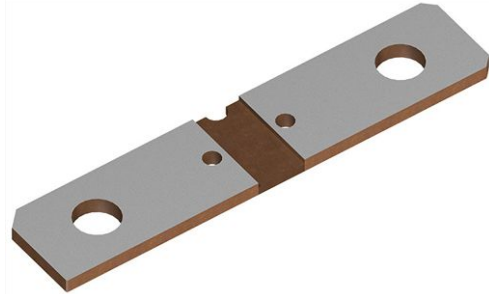




Power Metal Strip® Battery Shunt Resistor With M4 Tapped Holes and Sn Plated Terminals, Very Low Value (50 μΩ, 100 μΩ, 125 μΩ, and 250 μΩ)



FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- Tapped holes aid in PCB mounting and / or a location to attach voltage sense pins
- Sn plating assists with PCB mounting and corrosion protection
- All welded construction
- Very low inductance (< 5 nH)
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

DESIGN SUPPORT TOOLS AVAILABLE



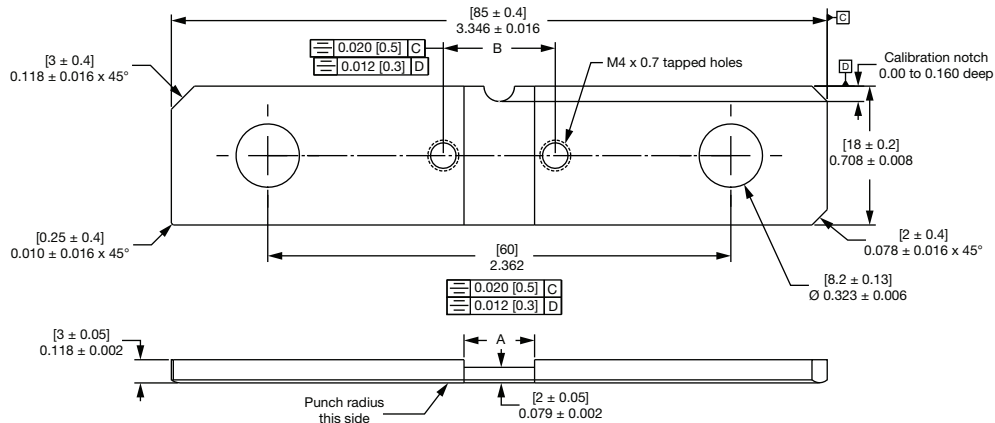
| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | |
|------------------------------------|------|--|------------------|--------------------------------|--|---|
| GLOBAL MODEL | SIZE | POWER RATING <i>P</i> _{70 °C} W | TOLERANCE ± % | RESISTANCE VALUE RANGE Ω | RESISTANCE VALUES CURRENTLY AVAILABLE ⁽¹⁾ Ω | WEIGHT (typical) g |
| WSBS8518...P4 | 8518 | 36 | 5, 10 | 50μ to 250μ | 50μ, 100μ, 125μ, 250μ | 50μ = 37.9, 100μ / 125μ = 36.5, 250μ = 33.7 |

Note

(1) Other values may be available, contact factory

| TECHNICAL SPECIFICATIONS | | |
|--|--------|-------------------------------|
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
| Temperature coefficient | ppm/°C | ± 200 for 50 μΩ |
| | | ± 175 for 100 μΩ, 125 μΩ |
| | | ± 110 for 250 μΩ |
| Temperature coefficient (element material) | ppm/°C | ± 20 |
| Operating temperature range | °C | -65 to +170 |
| Maximum current rating | A | (<i>P/R</i>) ^{1/2} |

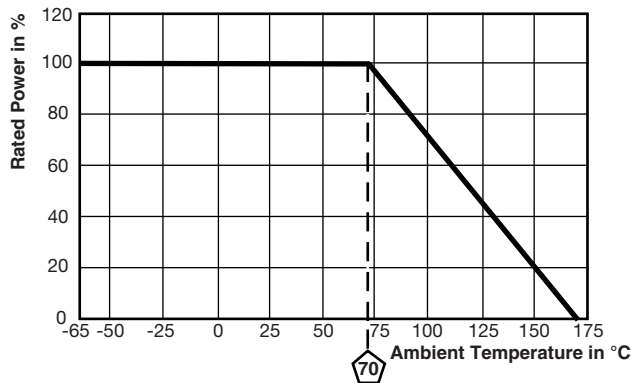
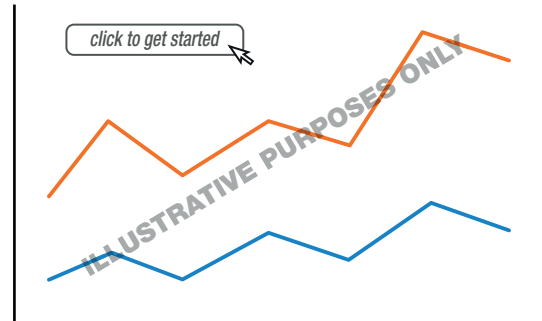
| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | |
|--|---|--|---|---|---|-------------------------|---|--------------------------------|---|---|---|---|---|---|---|---|
| GLOBAL PART NUMBERING: WSBS8518L1000JTP4 (WSBS8518-P4, 0.000100 Ω, ± 5 %, tray pack) | | | | | | | | | | | | | | | | |
| W | S | B | S | 8 | 5 | 1 | 8 | L | 1 | 0 | 0 | 0 | J | T | P | 4 |
| 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 | | | P4 = M4 tapped holes with plated terminals | | | | | |

DIMENSIONS in inches (millimeters)

Note

- Plating on top / bottom is Sn 2.5 μm to 8.0 μm over Ni 0.5 μm to 4.0 μm , edges are not plated

| RESISTANCE VALUE ($\mu\Omega$) | ELEMENT MATERIAL | A REFERENCE | B ± 0.005 (± 0.13) |
|----------------------------------|------------------|---------------|------------------------------|
| 50 | Mn-Cu | 0.145 (3.68) | 0.357 (9.07) |
| 100 | Mn-Cu | 0.360 (9.14) | 0.571 (14.50) |
| 125 | Mn-Cu | 0.454 (11.5) | 0.666 (16.9) |
| 250 | Mn-Cu | 0.900 (22.86) | 1.112 (28.2) |

TOLERANCES ON DECIMALS
 .xxx ± 0.005 (.x ± 0.1)
 UNLESS OTHERWISE LISTED

DERATING

PULSE CAPABILITY

www.vishay.com/resistors/large-shunt-power-metal-strip-calculator/

| 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 | $\pm 0.5\% \Delta R$ |
| | 10 x rated power for 5 s | $\pm 1.0\% \Delta R$ |
| 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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