



WSHM / WSH Side by Side Comparison for a Drop-In Replacement Part

By Bryan Yarborough



The WSHM is a new addition to the high-power Power Metal Strip® resistor family. The WSHM is a drop-in replacement for the WSH, with higher power handling, tighter tolerance, and a cost advantage over the WSH. We encourage all customers to migrate from the WSH to the WSHM. The below table provides a point-by-point comparison of the two resistors' datasheet specifications.

| Datasheet links | WSHM2818 | WSH2818 |
|---|--------------------------|-------------------------|
| FEATURES | | |
| All welded construction | Yes | Yes |
| Resistor element TCR | < 20 ppm/°C | < 20 ppm/°C |
| Very low inductance | < 5 nH | < 5 nH |
| Low thermal EMF | < 3 µV/°C | < 3 µV/°C |
| AEC-Q200 qualified | Yes | Yes |
| STANDARD ELECTRICAL SPECIFICATIONS | | |
| Size | 2818 | 2818 |
| Power rating | 7 W | 5 W |
| Resistance range | 0.5 % tolerance | 0.010 Ω to 0.1 Ω |
| | 1.0 % tolerance | 0.001 Ω to 0.1 Ω |
| Weight | 167.8 mg | 126 mg |
| TECHNICAL SPECIFICATIONS | | |
| Temperature coefficient | 0.001 Ω to 0.00599 Ω | 200 ppm/°C |
| | 0.006 Ω to 0.1 Ω | 75 ppm/°C |
| Operating temperature range | -65 °C to +170 °C | -65 °C to +170 °C |

TECHNICAL NOTE

WSHM / WSH

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| Datasheet links | WSHM2818 | WSH2818 |
|---|------------------------------------|-------------------------|
| DIMENSIONS in inches (millimeters) | | |
| | | |
| L | 0.28 (7.10) | 0.28 (7.10) |
| W | 0.18 (4.60) | 0.18 (4.60) |
| H | 0.006 Ω to 0.1 Ω | 0.059 (1.50) |
| | 0.001 Ω to 0.00599 Ω | 0.059 (1.50) |
| T | 0.125 (3.18) | 0.125 (3.18) |
| a | 0.138 (3.50) | 0.138 (3.50) |
| b | 0.20 (5.10) | 0.20 (5.10) |
| l | 0.024 (0.61) | 0.024 (0.61) |
| PERFORMANCE | | LIMITS |
| Thermal shock | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Short time overload | $\pm 1\%$ | $\pm 1\%$ |
| Low temperature operation | $\pm 0.5\%$ | $\pm 0.5\%$ |
| High temperature exposure | $\pm 1\%$ | $\pm 1\%$ |
| Bias humidity | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Mechanical shock | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Vibration | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Load life | $\pm 1\%$ | $\pm 1\%$ |
| Resistance to solder heat | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Moisture resistance | $\pm 0.5\%$ | $\pm 0.5\%$ |