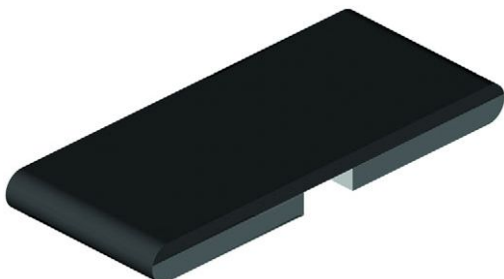




Power Metal Strip® Resistors, High Power (5 W), Low Value (down to 0.001 Ω), Surface Mount



RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

FEATURES

- Improved thermal management incorporated into design
- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifier
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Very low inductance (< 5 nH)
- Excellent frequency response to 50 MHz
- Solid metal nickel-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified (1)
- Compliant to RoHS Directive 2002/95/EC

Product Termination Notice: PCN-DR-028-2015-Rev-0

For documentation go to: www.vishay.com/quality/pcn-search/. Enter search for resistors, Vishay Dale, and product termination.

Technical Note: WSHM / WSH Side by Side Comparison for a Drop-In Replacement Part: www.vishay.com/doc?30305.

Note

(1) Flame retardance test may not be applicable to some resistor technologies.

STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | SIZE | POWER RATING $P_{70\text{ }^\circ\text{C}}$ W | TOLERANCE ± % | RESISTANCE VALUE RANGE Ω | WEIGHT (typical) g/1000 pieces |
|--------------|------|---|------------------|--------------------------------|--------------------------------------|
| WSH2818 | 2818 | 5 (2) | 1.0 | 0.001 to 0.1 | 126 |

Note

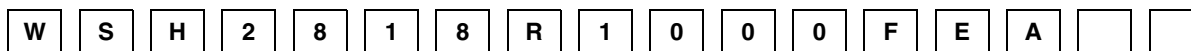
(2) The WSH2818 is rated at 5 W with maximum surface temperature of 200 °C.

TECHNICAL SPECIFICATIONS

| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
|-----------------------------|--------|--|
| Temperature coefficient | ppm/°C | ± 200 for 1 mΩ to 5.99 mΩ ± 75 for 6 mΩ to 100 mΩ |
| Inductance | nH | < 5 |
| Operating temperature range | °C | -65 to +170 |
| Maximum continuous current | A | $(P/R)^{1/2}$ |

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSH2818R1000FEA



GLOBAL MODEL
WSH2818

RESISTANCE VALUE
L = mΩ*
R = Decimal
4L000 = 0.004 Ω
R0100 = 0.01 Ω
* Use "L" for resistance values < 0.01 Ω

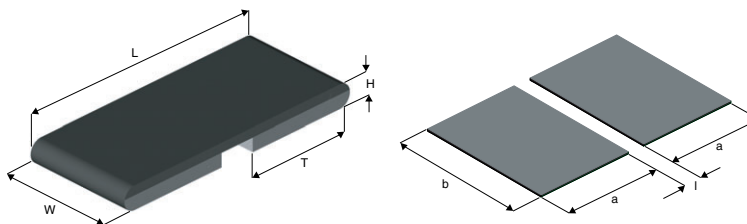
TOLERANCE CODE
F = ± 1.0 %
J = ± 5.0 %

PACKAGING CODE
EA = lead (Pb)-free, tape/reel
EK = lead (Pb)-free, bulk

SPECIAL
(dash number)
(up to 2 digits)
from 1 to 99
as applicable

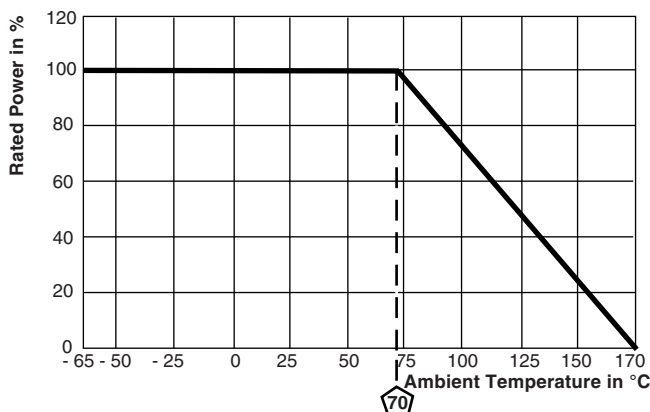


DIMENSIONS in inches (millimeters)



| MODEL | RESISTANCE RANGE Ω | DIMENSIONS | | | | SOLDER PAD DIMENSIONS | | |
|---------|------------------------------|-------------------------------|-------------------------------|---------------------------------|--------------------------------|-----------------------|----------------|-----------------|
| | | L | W | H | T | a | b | l |
| WSH2818 | 0.006 to 0.1 | 0.280 ± 0.010 (7.1 ± 0.25) | 0.180 ± 0.010 (4.6 ± 0.25) | 0.032 ± 0.010 (0.813 ± 0.25) | 0.125 ± 0.010 (3.18 ± 0.25) | 0.138 (3.5) | 0.200 (5.1) | 0.024 (0.61) |
| | 0.001 to 0.0059 | | | 0.045 ± 0.010 (1.143 ± 0.25) | | | | |

DERATING



| PERFORMANCE | | |
|---------------------------|--|--------------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS |
| Thermal shock | -55 °C to +150 °C, 1000 cycles, 15 min at each extreme | ± 0.5 % ΔR |
| Short time overload | 4x rated power for 5 s | ± 1.0 % ΔR |
| Low temperature operation | -65 °C for 45 min | ± 0.5 % ΔR |
| High temperature exposure | 1000 h at +170 °C | ± 1.0 % ΔR |
| Bias humidity | +85 °C, 85 % RH, 10 % bias, 1000 h | ± 0.5 % ΔR |
| Mechanical shock | 100 g's for 6 ms, 5 pulses | ± 0.5 % ΔR |
| Vibration | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | ± 0.5 % ΔR |
| Load life | 1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF" | ± 1.0 % ΔR |
| Resistance to solder heat | +260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence | ± 0.5 % ΔR |
| Moisture resistance | MIL-STD-202, method 106, 0 % power, 7b not required | ± 0.5 % ΔR |

| PACKAGING | | | | |
|-----------|------------------------|------------|-------------|------|
| MODEL | REEL | | | |
| | TAPE WIDTH | DIAMETER | PIECES/REEL | CODE |
| WSH2818 | 16 mm/embossed plastic | 330 mm/13" | 3500 | EA |

Note

- Embossed Carrier Tape per EIA-481.



Disclaimer

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