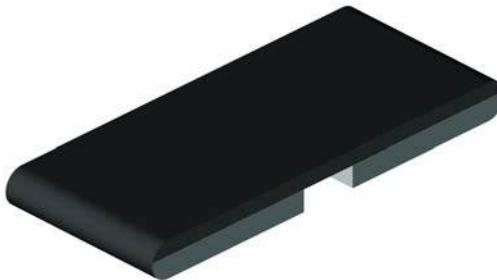


Power Metal Strip® Resistors, High Power (5 W), Low Value (down to 0.001 Ω), Surface Mount



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.

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⁾
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE GRADE



e3

RoHS
COMPLIANT

HALOGEN
FREE
GREEN
(IS-2008)

Note

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\text{ °C}}$ W	TOLERANCE \pm %	RESISTANCE VALUE RANGE Ω	WEIGHT (typical) g/1000 pieces
WSH2818	2818	5 ⁽¹⁾	1.0	0.001 to 0.1	126

Note

⁽¹⁾ The WSH2818 is rated at 5 W with maximum surface temperature of 200 °C

TECHNICAL SPECIFICATIONS

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

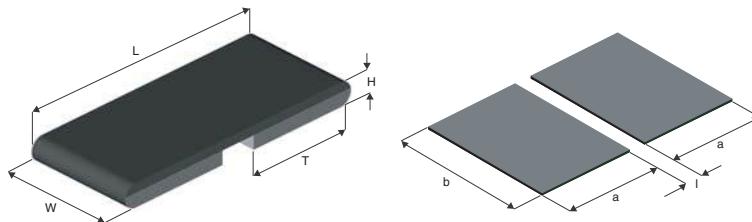
GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSH2818R1000FEA

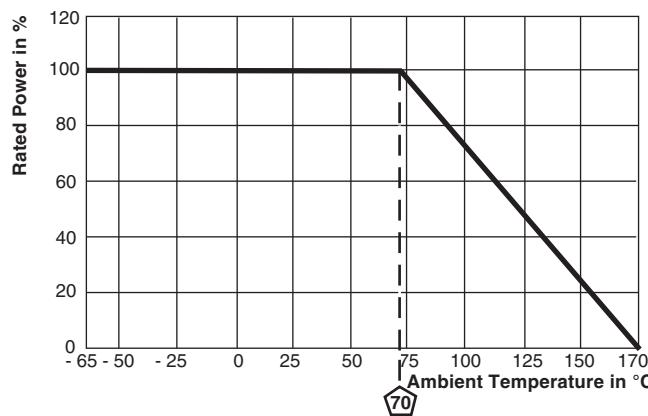
W	S	H	2	8	1	8	R	1	0	0	0	F	E	A		
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL
WSH2818				$L = m\Omega^*$ R = Decimal 4L000 = 0.004 Ω R0100 = 0.01 Ω				$F = \pm 1.0\%$ $J = \pm 5.0\%$				EA = lead (Pb)-free, tape/reel EK = lead (Pb)-free, bulk				(dash number) (up to 2 digits) from 1 to 99 as applicable
* Use "L" for resistance values < 0.01 Ω																

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

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

DIMENSIONS in inches (millimeters)

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

DERATING

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	4x rated power for 5 s	$\pm 1.0\% \Delta R$
Low temperature operation	-65 °C for 45 min	$\pm 0.5\% \Delta R$
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"	$\pm 1.0\% \Delta R$
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	$\pm 0.5\% \Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	$\pm 0.5\% \Delta R$

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

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