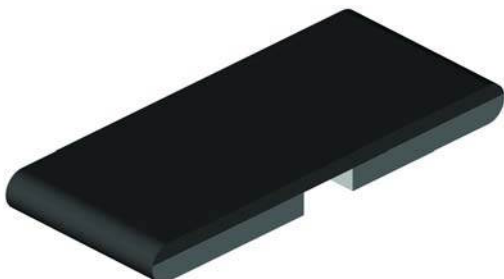




## Power Metal Strip® Resistors, High Power (5 W), Low Value (down to 0.001 Ω), Surface Mount



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

For documentation go to: [www.vishay.com/quality/pcn-search/](http://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](http://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 <sup>(1)</sup>
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**Note**

<sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	SIZE	POWER RATING <i>P</i> <sub>70 °C</sub> W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	WEIGHT (typical) g/1000 pieces
WSH2818	2818	5 <sup>(1)</sup>	1.0	0.001 to 0.1	126

**Note**

<sup>(1)</sup> 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	( <i>P/R</i> ) <sup>1/2</sup>

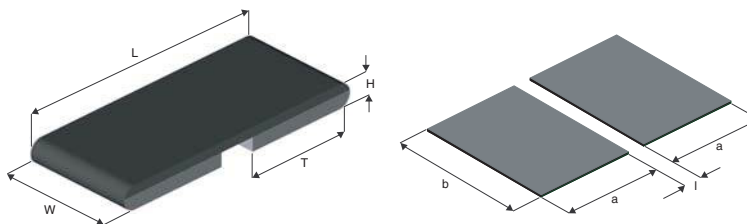
GLOBAL PART NUMBER INFORMATION																
Global Part Numbering example: WSH2818R1000FEA																
W	S	H	2	8	1	8	R	1	0	0	0	F	E	A		
GLOBAL MODEL			RESISTANCE VALUE			TOLERANCE CODE		PACKAGING CODE			SPECIAL					
WSH2818			L = mΩ* R = Decimal 4L000 = 0.004 Ω R0100 = 0.01 Ω  * Use "L" for resistance values < 0.01 Ω			F = ± 1.0 % J = ± 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					

**PATENT(S):** [www.vishay.com/patents](http://www.vishay.com/patents)

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

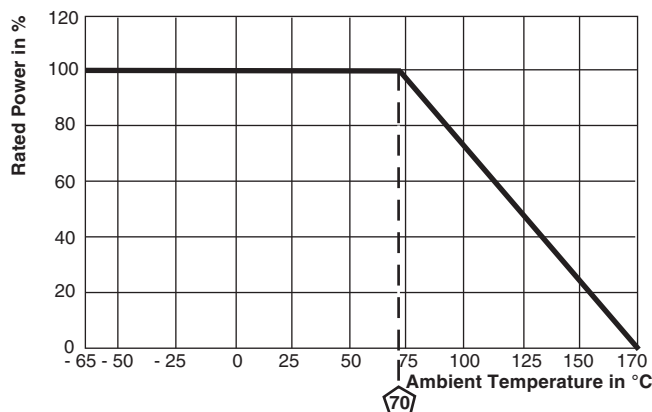


**DIMENSIONS** in inches (millimeters)



MODEL	RESISTANCE RANGE $\Omega$	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 % $\Delta R$
Short time overload	4x rated power for 5 s	± 1.0 % $\Delta R$
Low temperature operation	-65 °C for 45 min	± 0.5 % $\Delta R$
High temperature exposure	1000 h at +170 °C	± 1.0 % $\Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % $\Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 % $\Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % $\Delta R$
Load life	1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % $\Delta R$
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 % $\Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 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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