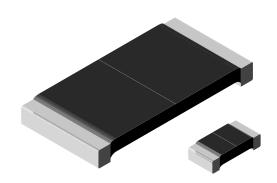
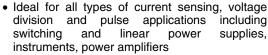
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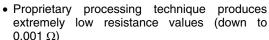
Power Metal Strip[®] Resistors, Low Value (down to 0.001 Ω), Surface Mount



FEATURES









- All welded construction
- Solderable terminations



RoHS*

- Solid metal Nickel-Chrome or Manganese-Copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3 μV/°C)
- Compliant to RoHS directive 2002/95/EC

STANDARD ELECTRICAL SPECIFICATIONS				
GLOBAL MODEL	POWER RATING P _{70 °C} W	RESISTANCE RANGE Ω		WEIGHT (typical)
		± 0.5 %	± 1.0 %	g/1000 pieces
WSL0603	0.1	0.01 to 0.1	0.01 to 0.1	1.9
WSL0805	0.125	0.01 to 0.2	0.01 to 0.2	4.8
WSL1206	0.25	0.006 to 0.2	0.001 to 0.2	16.2
WSL2010	0.5	0.004 to 0.5	0.001 to 0.5	38.9
WSL2512	1.0 (1)	0.003 to 0.5	0.001 to 0.5	63.6
WSL2816	2.0	0.01 to 0.1	0.01 to 0.1	118

Notes

 $^{(1)}$ For values above 0.1 Ω derate linearly to 80 % rated power at 0.5 Ω

• Part Marking: Value; Tolerance: Due to resistor size limitations some resistors will be marked with only the resistance value

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TECHNICAL SPECIFICATIONS			
PARAMETER	UNIT	WSL RESISTOR CHARACTERISTICS	
Temperature Coefficient	ppm/°C	\pm 275 for 1 m Ω to 2.9 m Ω , \pm 150 for 3 m Ω to 4.9 m Ω \pm 110 for 5 m Ω to 6.9 m Ω , \pm 75 for 7 m Ω to 0.5 Ω	
Operating Temperature Range	°C	- 65 to + 170	
Maximum Working Voltage	V	$(P \times R)^{1/2}$	

GLOBAL PART NUMBER INFORMATION NEW GLOBAL PART NUMBERING: WSL25124L000FTA (PREFERRED PART NUMBERING FORMAT) S 2 5 1 2 4 Α Т **GLOBAL MODEL TOLERANCE CODE PACKAGING** VALUE SPECIAL WSL0603 EA = Lead (Pb)-free, tape/reel $L = m\Omega^*$ $D = \pm 0.5 \%$ (Dash Number) WSL0805 R = Decimal $F = \pm 1.0 \%$ **EK** = Lead (Pb)-free, bulk (up to 2 digits) WSL1206 5L000 = 0.005 Ω $J = \pm 5.0 \%$ From 1 to 99 as WSL2010 **R0100** = 0.01 Ω TA = Tin/lead, tape/reel (R86) applicable WSL2512 use "L" for resistance TG = Tin/lead, tape/reel (RT1) WSL2816 BA = Tin/lead, bulk (B43) values < 0.01 Ω HISTORICAL PART NUMBER EXAMPLE: WSL2512 0.004 Ω 1 % R86 (WILL CONTINUE TO BE ACCEPTED) WSL2512 0.004Ω 1 % **R86** HISTORICAL MODEL RESISTANCE VALUE TOLERANCE CODE **PACKAGING**

^{*} Pb containing terminations are not RoHS compliant, exemptions may apply

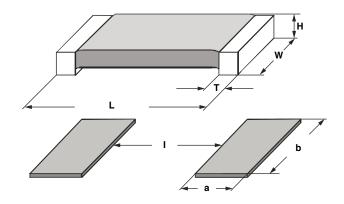
^{**} Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

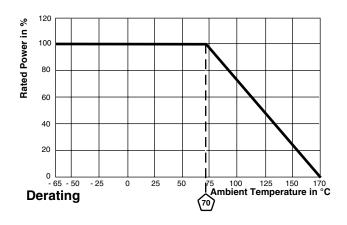


Power Metal Strip Resistors, Low Value (down to 0.001 Ω), Surface Mount

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DIMENSIONS





	DIMENSIONS in inches [millimeters]				
MODEL	RESISTANCE RANGE Ω	L	W	н	т
WSL0603	0.01 to 0.1	0.060 ± 0.010 [1.52 ± 0.254]	0.030 ± 0.010 [0.76 ± 0.254]	0.013 ± 0.005 [0.330 ± 0.127]	0.015 ± 0.010 [0.381 ± 0.254]
WSL0805	0.01 to 0.2	0.080 ± 0.010 [2.03 ± 0.254]	0.050 ± 0.010 [1.27 ± 0.254]	0.013 ± 0.005 [0.330 ± 0.127]	0.015 ± 0.010 [0.381 ± 0.254]
	0.001 to 0.0019	0.126 ± 0.010 [3.20 ± 0.254]	0.063 ± 0.010 [1.60 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.041 ± 0.010 [1.04 ± 0.254]
WSL1206	0.002 to 0.0059	0.126 ± 0.010 [3.20 ± 0.254]	0.063 ± 0.010 [1.60 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]
	0.006 to 0.20	0.126 ± 0.010 [3.20 ± 0.254]	0.063 ± 0.010 [1.60 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.020 ± 0.010 [0.508 ± 0.254]
WSL2010	0.001 to 0.0069	0.200 ± 0.010 [5.08 ± 0.254]	0.100 ± 0.010 [2.54 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.058 ± 0.010 [1.47 ± 0.254]
	0.007 to 0.5	0.200 ± 0.010 [5.08 ± 0.254]	0.100 ± 0.010 [2.54 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.020 ± 0.010 [0.508 ± 0.254]
WSL2512	0.001 to 0.0049	0.250 ± 0.010 [6.35 ± 0.254]	0.125 ± 0.010 [3.18 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.087 ± 0.010 [2.21 ± 0.254]
	0.005 to 0.0069	0.250 ± 0.010 [6.35 ± 0.254]	0.125 ± 0.010 [3.18 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.047 ± 0.010 [1.19 ± 0.254]
	0.007 to 0.5	0.250 ± 0.010 [6.35 ± 0.254]	0.125 ± 0.010 [3.18 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.030 ± 0.010 [0.762 ± 0.254]
WSL2816	0.01 to 0.1	0.280 ± 0.010 [7.1 ± 0.254]	0.165 ± 0.010 [4.2 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.062 ± 0.010 [1.57 ± 0.254]

	SOLDER PAD DIMENSIONS in inches [millimeters]			
MODEL	RESISTANCE RANGE Ω	а	b	ı
WSL0603	0.01 to 0.1	0.040 [1.01]	0.040 [1.01]	0.020 [0.50]
WSL0805	0.01 to 0.2	0.040 [1.02]	0.050 [1.27]	0.020 [0.50]
WSL1206	0.001 to 0.2	0.062 [1.57]	0.070[1.78]	0.030 [0.76]
WSL2010	0.001 to 0.0069	0.093 [2.36]	0.120 [3.05]	0.055 [1.40]
	0.007 to 0.5	0.055 [1.40]	0.120 [3.05]	0.130 [3.30]
WSL2512	0.001 to 0.0049	0.120 [3.05]	0.145 [3.68]	0.050 [1.27]
	0.005 to 0.0069	0.083 [2.11]	0.145 [3.68]	0.125 [3.18]
	0.007 to 0.5	0.065 [1.65]	0.145 [3.68]	0.160 [4.06]
WSL2816	0.01 to 0.1	0.096 [2.45]	0.185 [4.7]	0.125 [3.20]

PERFORMANCE				
TEST	CONDITIONS OF TEST	TEST LIMITS		
Thermal Shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Short Time Overload	5 x rated power for 5 s	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Low Temperature Operation	- 65 °C for 24 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
High Temperature Exposure	1000 h at + 170 °C	± (1.0 % + 0.0005 Ω) ΔR		
Bias Humidity	+ 85 °C, 85 % RH, 10 % Bias, 1000 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Mechanical Shock	100 g's for 6 ms, 5 pulses	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Load Life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$		
Resistance to Solder Heat	+ 260 °C Solder, 10 s to 12 s dwell, 25 mm/s emergence	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Moisture Resistance	MIL-STD-202, Method 106, 0 % power, 7a and 7b not required	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		

PACKAGING					
MODEL	REEL				
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE	
WSL0603	8 mm/Punched Paper	178 mm/7"	5000	EA	
WSL0805	8 mm/Punched Paper	178 mm/7"	5000	EA	
WSL1206	8 mm/Embossed Plastic	178 mm/7"	4000	EA	
WSL2010	12 mm/Embossed Plastic	178 mm/7"	4000	EA	
WSL2512	12 mm/Embossed Plastic	178 mm/7"	2000	EA	
WSL2816	16 mm/Embossed Plastic	330 mm/13"	5000	EA	

For technical questions, contact: ww2bresistors@vishay.com

Note

Embossed carrier tape per EIA-481-1A



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