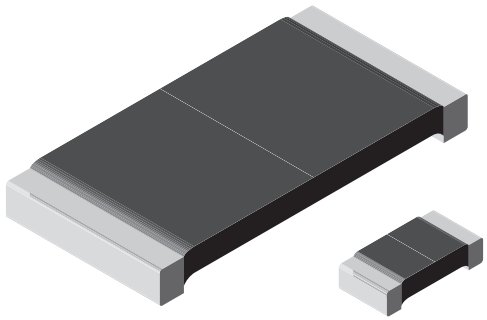
Power Metal Strip® Resistors, Low Value, Surface Mount



FEATURES

- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal Nickel-chrome or Manganese-copper alloy resistive element
- Solderable terminations
- Very low inductance 0.5nH to 5nH
- Excellent frequency response
- Low thermal EMF

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{70°C}$ W	RESISTANCE RANGE Ω		WEIGHT (TYPICAL) g/1000 pcs
		± 0.5%	± 1.0%	
WSL0805	0.125	0.01 - 0.2	0.01 - 0.2	4.8
WSL1206	0.25	0.01 - 0.2	0.002 - 0.2	16.2
WSL2010	0.5	0.01 - 0.5	0.001 - 0.5	38.9
WSL2512	1.0*	0.01 - 0.5	0.001 - 0.5	63.6
WSL2816	2.0	0.01 - 0.10	0.01 - 0.10	118

*For values above 0.1Ω derate linearly to 80% rated power at 0.5Ω

• Part Marking: DALE, Value, Tolerance: due to resistor size limitations some resistors will be marked with only the resistance value.

TECHNICAL SPECIFICATIONS

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

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: WSL25124L000FEA (preferred part numbering format)

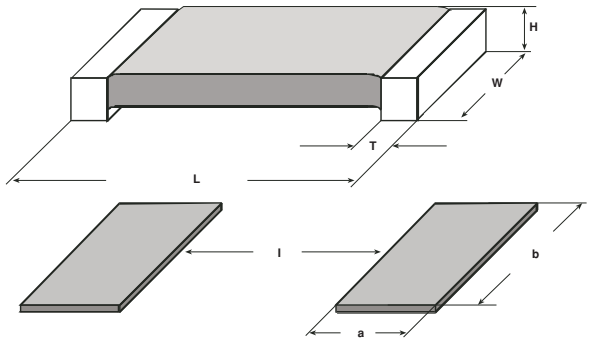
W	S	L	2	5	1	2	4	L	0	0	0	F	E	A		

GLOBAL MODEL	VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
(See Standard Electrical Specifications, Global Model, for more options).	**L** = Miliohm **R** = Decimal **4L000** = 0.004Ω **R0100** = 0.01Ω	**D** = ± 0.5% **F** = ± 1.0% **J** = ± 5.0%	**EA** = Lead Free, Tape/Reel **EK** = Lead Free, Bulk **TA** = Tin/Lead, Tape/Reel (R86) **BA** = Tin/Lead, Bulk (B43)	(Dash Number) (up to 2 digits) From **1-99** as applicable

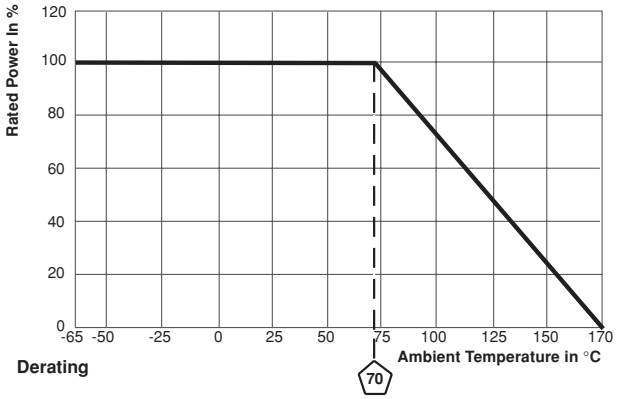
Historical Part Number example: WSL2512 0.004Ω 1% EA (will continue to be accepted)

WSL2512	0.004Ω	1%	EA
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

DIMENSIONS



MODEL	DIMENSIONS in inches [millimeters]				
	RESISTANCE RANGE Ω	L	W	H	T
WSL0805	0.01 - 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]
WSL1206	0.002 - 0.2	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 - 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 - 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 - 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 - 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 - 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 - 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]



MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]			
	RESISTANCE RANGE Ω	a	b	l
WSL0805	0.01 - 0.2	0.040 [1.02]	0.050 [1.27]	0.020 [0.50]
WSL1206	0.002 - 0.2	0.050 [1.27]	0.070[1.78]	0.055 [1.40]
WSL2010	0.001 - 0.0069	0.093 [2.36]	0.120 [3.05]	0.055 [1.40]
	0.007 - 0.5	0.055 [1.40]	0.120 [3.05]	0.130 [3.30]
WSL2512	0.001 - 0.0049	0.120 [3.05]	0.145 [3.68]	0.050 [1.27]
	0.005 - 0.0069	0.083 [2.11]	0.145 [3.68]	0.125 [3.18]
	0.007 - 0.5	0.065 [1.65]	0.145 [3.68]	0.160 [4.06]
WSL2816	0.01 - 0.1	0.130 [3.3]	0.190 [4.8]	0.040 [1.00]

PERFORMANCE

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

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSL0805	8mm/Punched Paper	178mm/7"	5000	RT1
WSL1206	8mm/Embossed Plastic	178mm/7"	4000	R86
WSL2010	12mm/Embossed Plastic	178mm/7"	4000	R86
WSL2512	12mm/Embossed Plastic	178mm/7"	2000	R86
WSL2816	12mm/Embossed Plastic	178mm/7"	2000	R86

Embossed carrier tape per EIA-481-1A.