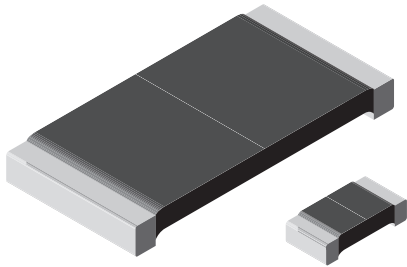


# Power Metal Strip® Resistors, Low Value, Surface Mount



## 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
- 60/40 tin/lead copper terminations
- Very low inductance 0.5nH to 5nH
- Excellent frequency response
- Low thermal EMF

## STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING $P_{70^{\circ}\text{C}}$ W	RESISTANCE RANGE $\Omega$	
		$\pm 0.5\%$	$\pm 1.0\%$
WSL0805	0.125	0.01 - 0.2	0.01 - 0.2
WSL1206	0.25	0.01 - 0.2	0.002 - 0.2
WSL2010	0.5	0.01 - 0.5	0.001 - 0.5
WSL2512	1.0*	0.01 - 0.5	0.001 - 0.5

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

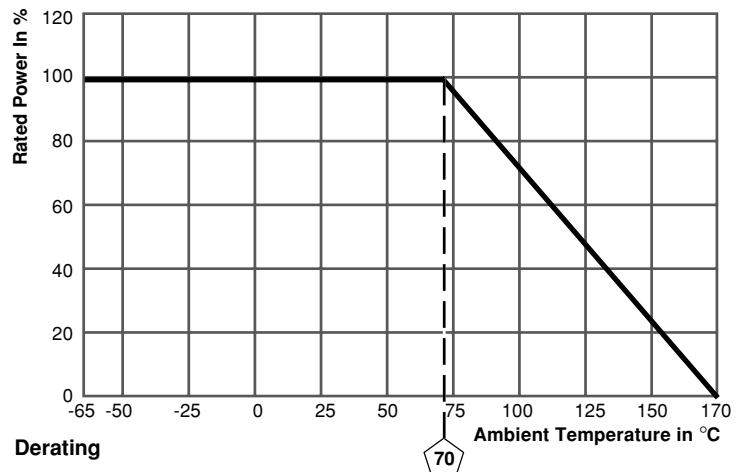
• Part Marking: DALE, Model, Value, Tolerance; due to resistor size limitations some resistors will be marked with only the resistance value

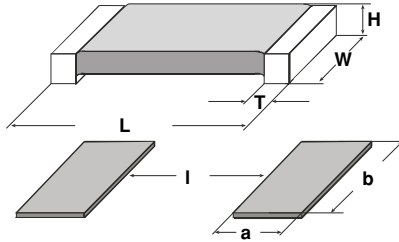
## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSL0805	WSL1206	WSL2010	WSL2512
Temperature Coefficient	ppm/°C	$\pm 75$	0.002Ω - 0.0029Ω = $\pm 275$ 0.003Ω - 0.0049Ω = $\pm 150$ 0.005Ω - 0.0069Ω = $\pm 110$ 0.007Ω - 0.2Ω = $\pm 75$	0.001Ω - 0.0029Ω = $\pm 275$ 0.003Ω - 0.0049Ω = $\pm 150$ 0.005Ω - 0.0069Ω = $\pm 110$ 0.007Ω - 0.5Ω = $\pm 75$	0.001Ω - 0.0029Ω = $\pm 275$ 0.003Ω - 0.0049Ω = $\pm 150$ 0.005Ω - 0.0069Ω = $\pm 110$ 0.007Ω - 0.5Ω = $\pm 75$
Operating Temperature Range	°C	- 65 / + 170			
Maximum Working Voltage	V	$(P \times R)^{1/2}$			
Weight/1000 pieces (typical)	g	4.8	16.2	38.9	63.6

## ORDERING INFORMATION

<b>WSL2010</b>	<b>0.01Ω</b>	<b>1.0%</b>	<b>R86</b>
MODEL	RESISTANCE	TOLERANCE	PACKAGING
	Ω	$\pm \%$	B43 = Bulk Pack R86 = Tape and Reel



**DIMENSIONS**


MODEL	DIMENSIONS - in inches [millimeters]				
	RESISTANCE RANGE $\Omega$	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]

MODEL	SOLDER PAD DIMENSIONS - in inches [millimeters]			
	RESISTANCE RANGE $\Omega$	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]

**PERFORMANCE**

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

**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

Embossed carrier tape per EIA-481-1A