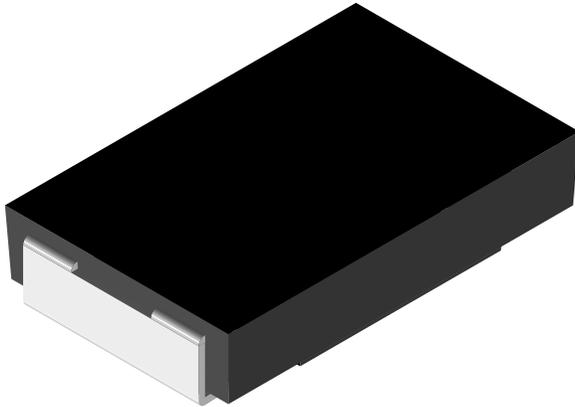


Power Metal Strip® Resistors, Low Value (down to 0.001 Ω), Surface Mount



FEATURES

- Molded high temperature encapsulation
- 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 (down to 0.001 Ω)
- All welded construction
- Solid metal Nickel-chrome or Manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Solderable terminations
- Very low inductance 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3 μV/°C)
- Lead (Pb)-free version is RoHS compliant



RoHS*
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS				
GLOBAL MODEL	SIZE	POWER RATING <i>P</i> _{70 °C} W	RESISTANCE RANGE Ω	
			± 0.5 %	± 1.0 %
WSR2	4527	2.0	0.01 - 1.0	0.001 - 1.0
WSR3	4527	3.0 ¹⁾	0.01 - 0.2	0.001 - 0.2

Note

1. The WSR3 requires a minimum of 1050 sq. mil. circuit traces connecting to the recommended solder pad
- Part Marking: DALE, Model, Value, Tolerance, Date Code

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	WSR2 & WSR3
Temperature Coefficient	ppm/°C	0.005 Ω - 0.0099 Ω = ± 110 0.010 Ω - 1.0 Ω = ± 75
Dielectric Withstanding Voltage	V _{AC}	> 500
Insulation Resistance	Ω	> 10 ⁹
Operating Temperature Range	°C	- 65/+ 275
Maximum Working Voltage	V	(<i>P</i> × <i>R</i>) ^{1/2}
Weight/1000 pieces (typical)	g	440

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: WSR25L000FTA (preferred part numbering format)

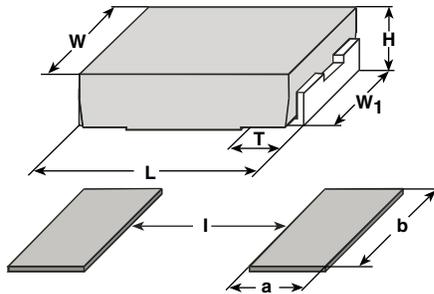
W	S	R	2	5	L	0	0	0	F	T	A		
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GLOBAL MODEL WSR2 WSR3	VALUE L = Milliohm* R = Decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω * use "L" for resistance values < 0.01 Ω	TOLERANCE D = ± 0.5 % F = ± 1.0 % J = ± 5.0 %	PACKAGING EA = Lead (Pb)-free, Tape/Reel EK = Lead (Pb)-free, Bulk TA = Tin/Lead, Tape/Reel (R86) BA = Tin/Lead, Bulk (B43)	SPECIAL (Dash Number) (up to 2 digits) From 1 - 99 as applicable
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Historical Part Number example: WSR2 0.005 Ω 1 % R86 (will continue to be accepted)

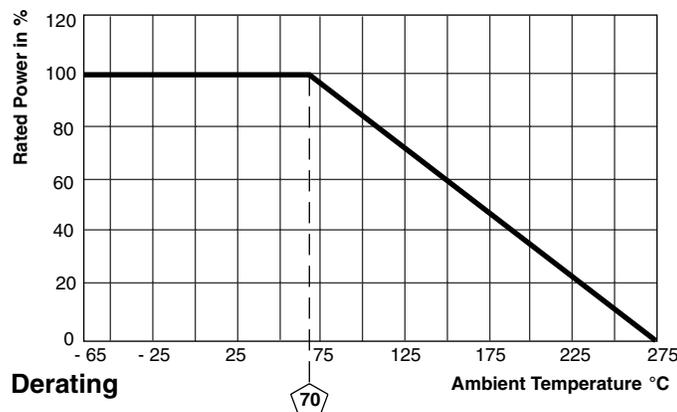
WSR2	0.005 Ω	1 %	R86
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

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

DIMENSIONS


MODEL	DIMENSIONS in inches [millimeters]				
	L	H	T	W	W ₁
WSR2	0.455 ± 0.032	0.095 ± 0.005	0.100 ± 0.010	0.275 ± 0.005	0.215 ± 0.005
WSR3	[11.56 ± 0.813]	[2.41 ± 0.127]	[2.54 ± 0.254]	[6.98 ± 0.127]	[5.46 ± 0.127]

MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]		
	a	b	l
WSR2	0.155	0.230	0.205
WSR3	[3.94]	[5.84]	[5.21]



PERFORMANCE			
TEST	CONDITIONS OF TEST	TEST LIMITS	
		WSR2	WSR3
Thermal Shock	- 55 °C to + 150 °C, 1000 cycles, 15 minutes at each extreme	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
Short Time Overload	WSR2: 5 x rated power for 5 seconds WSR3: 4 x rated power for 5 seconds	± (0.5 % + 0.0005 Ω) ΔR	± (2.0 % + 0.0005 Ω) ΔR
Low Temperature Storage	- 65 °C for 24 hours	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
High Temperature Exposure	1000 hours at + 275 °C	± (1.0 % + 0.0005 Ω) ΔR	± (1.0 % + 0.0005 Ω) ΔR
Bias Humidity	+ 85 °C, 85 % RH, 10 % Bias, 1000 hours	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
Mechanical Shock	100 g's for 6 milliseconds, 5 pulses	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
Vibration	Frequency varied 10 to 2000 Hz in one minute, 3 directions, 12 hours	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
Load Life	1000 hours at rated power, + 70 °C, 1.5 hours "ON", 0.5 hours "OFF"	± (1.0 % + 0.0005 Ω) ΔR	± (2.0 % + 0.0005 Ω) ΔR
Resistance to Solder Heat	+ 260 °C Solder, 10 - 12 second dwell, 25 mm/second emergence	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR
Moisture Resistance	MIL-STD-202 Method 106, 0 % power, 7a and 7b not required	± (0.5 % + 0.0005 Ω) ΔR	± (0.5 % + 0.0005 Ω) ΔR

PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSR2 & WSR3	24 mm/Embossed Plastic	330 mm/13"	1500	EA

Note

- Embossed Carrier Tape per EIA-481-2



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