

## Power Metal Strip® Resistors, Low Value (down to 0.001 Ω), Surface Mount, 4-Terminal



### FEATURES

- 4-Terminal design allows for 0.5 % resistance tolerance down to 0.001 Ω
- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power supplies, instruments and power amplifiers
- Proprietary processing technique produces extremely low resistance values (down to 0.001 Ω)
- All welded construction
- Solid metal nickel-chrome alloy resistive element with low TCR (< 20 ppm/°C)
- Solderable terminations
- Low thermal EMF (< 3 μV/°C)
- Very low inductance, 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- AEC-Q200 qualified <sup>(1)</sup>
- Compliant to RoHS Directive 2002/95/EC

AUTOMOTIVE GRADE



RoHS\* COMPLIANT  
GREEN (5-2009)\*\* Available

### Note

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

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	SIZE	POWER RATING $P_{70\text{ }^\circ\text{C}}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	WEIGHT (typical) g/1000 pieces
WSL3637	3637	3.0	0.5 and 1.0	0.001 to 0.01	274.3

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 75 for 0.001 Ω to 0.0029 Ω, ± 50 for 0.003 Ω to 0.010 Ω
Operating temperature range	°C	- 65 to + 170
Maximum working voltage	V	$(P \times R)^{1/2}$

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSL36375L000FTA (preferred part numbering format)

W	S	L	3	6	3	7	5	L	0	0	0	F	T	A		
GLOBAL MODEL WSL3637			RESISTANCE VALUE L = mΩ* R = Decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω  * Use "L" for resistance values < 0.01 Ω				TOLERANCE CODE D = ± 0.5 % F = ± 1.0 %		PACKAGING CODE 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 to 99 as applicable			

Historical Part Numbering example: WSL3637 0.005 Ω 1 % R86 (will continue to be accepted)

WSL3637	0.005 Ω	1 %	R86
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE

\* Pb containing terminations are not RoHS compliant, exemptions may apply  
\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc/99902](http://www.vishay.com/doc/99902)

**DIMENSIONS**


MODEL	DIMENSIONS in inches (millimeters)						
	RESISTANCE RANGE (Ω)	W	L	H	T	A	B
WSL3637	0.002 to 0.01	0.370 ± 0.010 (9.40 ± 0.254)	0.360 ± 0.010 (9.14 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.086 ± 0.010 (2.18 ± 0.254)	0.061 ± 0.010 (1.55 ± 0.254)	0.032 ± 0.010 (0.813 ± 0.254)
	0.001 to 0.0019				0.138 ± 0.010 (3.51 ± 0.254)		

MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)					
	RESISTANCE RANGE (Ω)	a	b	c	d	l
WSL3637	0.002 to 0.01	0.116 (2.95)	0.390 (9.91)	0.066 (1.68)	0.024 (0.610)	0.178 (4.52)
	0.001 to 0.0019	0.168 (4.27)	0.390 (9.91)	0.066 (1.68)	0.024 (0.610)	0.074 (1.88)



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	± (0.5 % + 0.0005 Ω) ΔR
Short time overload	5 x rated power for 5 s	± (0.5 % + 0.0005 Ω) ΔR
Low temperature storage	- 65 °C for 24 h	± (0.5 % + 0.0005 Ω) ΔR
High temperature exposure	1000 h at + 170 °C	± (1.0 % + 0.0005 Ω) ΔR
Bias humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	± (0.5 % + 0.0005 Ω) ΔR
Mechanical shock	100 g's for 6 ms, 5 pulses	± (0.5 % + 0.0005 Ω) ΔR
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.0005 Ω) ΔR
Load life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.0005 Ω) ΔR
Solder heat	+ 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (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

PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSL3637	16 mm/embossed plastic	330 mm/13"	4000	EA

**Note**

- Embossed Carrier Tape per EIA-481.



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