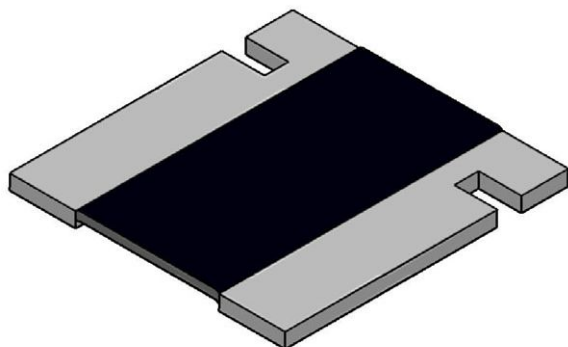


Power Metal Strip® Resistors, Low Value (down to 0.001 Ω), Surface Mount, 4-Terminal



DESIGN SUPPORT TOOLS

3D
Models
Available


Design Tools
Available

[click logo to get started](#)

FEATURES

- 4-terminal design allows for 0.5 % resistance tolerance down to 0.001 Ω
- All welded construction of the Power Metal Strip® resistors are ideal for all types of current sensing, voltage division, and pulse applications
- Proprietary processing technique produces extremely low resistance values (down to 0.001 Ω)
- Sulfur resistance by construction that is unaffected by high sulfur environments
- Solid metal nickel-chrome alloy resistive element with low TCR (< 20 ppm/°C)
- Low thermal EMF (< 3 μV/°C)
- Very low inductance, 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- AEC-Q200 qualified ⁽¹⁾
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

**AUTOMOTIVE
GRADE**



RoHS*
Available

**HALOGEN
FREE**
Available

**GREEN
(5-2008)**
Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

• Follow link to Overview of Automotive Grade Products for more details: www.vishay.com/doc?49924

⁽¹⁾ Flame retardance test may not be applicable to some resistor technologies

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ 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

GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING EXAMPLE: WSL36375L00FEA (visit www.vishay.net Vishay Dale parts numbering manual for all options)

W S L 3 6 3 7 5 L 0 0 0 F E A

GLOBAL MODEL
(7 digits)

WSL3637

RESISTANCE VALUE ⁽¹⁾
(5 digits)

L = mΩ^{*}
R = decimal
5L000 = 0.005 Ω
R0100 = 0.01 Ω

* Use "L" for resistance
values < 0.01 Ω

TOLERANCE CODE
(1 digit)

D = ± 0.5 %
F = ± 1.0 %

PACKAGING CODE ⁽²⁾
(2 digits)

EA = lead (Pb)-free, tape / reel
EK = lead (Pb)-free, bulk
TA = tin / lead, tape/reel (R86)
BA = tin / lead, bulk (B43)

SPECIAL
(2 digits)

(dash number)
(up to 2 digits)
from 1 to 99 as
applicable

Notes

⁽¹⁾ WSL marking (www.vishay.com/doc?30327)

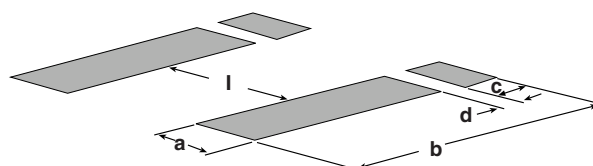
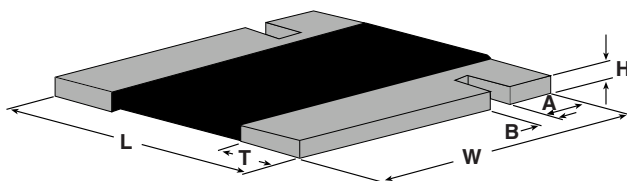
⁽²⁾ Packaging code: EB (lead (Pb)-free) and TB (tin / lead) are non-standard packaging codes designating 1000 piece reels. These non-standard packaging codes are identical to our standard EA (lead (Pb)-free) and TA (tin / lead), except that they have a package quantity of 1000 pieces

PATENT(S): www.vishay.com/patents

This Vishay product is protected by one or more United States and international patents.

TECHNICAL SPECIFICATIONS

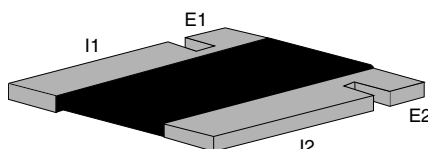
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 50 for 0.003 Ω to 0.010 Ω
		± 75 for 0.001 Ω to 0.0029 Ω
Element TCR	ppm/°C	< 20
Operating temperature range	°C	-65 to +170
Maximum working voltage	V	$(P \times R)^{1/2}$

DIMENSIONS

Note

- 3D models available: www.vishay.com/doc?30303

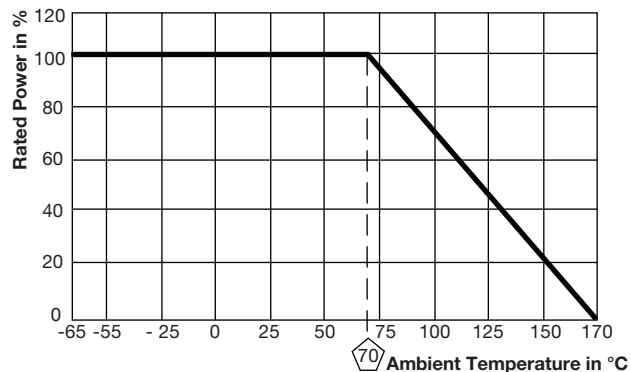
MODEL	DIMENSIONS in inches (millimeters)						
	RESISTANCE RANGE (Ω)	W	L	H	T	A	B
WSL3637	0.002 to 0.01	0.370 ± 0.010 (9.40 $\pm$ 0.254)	0.360 ± 0.010 (9.14 $\pm$ 0.254)	0.025 ± 0.010 (0.635 $\pm$ 0.254)	0.086 ± 0.010 (2.18 $\pm$ 0.254)	0.061 ± 0.010 (1.55 $\pm$ 0.254)	0.032 ± 0.010 (0.813 $\pm$ 0.254)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

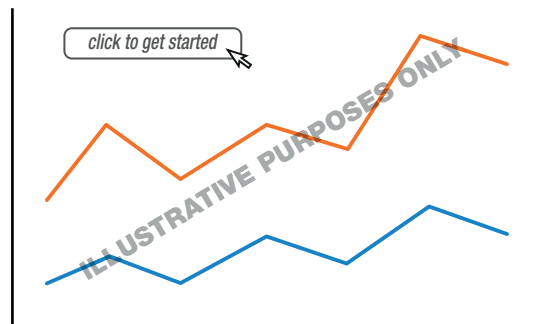
4 TERMINAL KELVIN CONNECTIONS

Notes

- E1 and E2: voltage sense connection
- I1 and I2: current connection

DERATING



PULSE CAPABILITY



www.vishay.com/resistors/power-metal-strip-calculator

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)
Short time overload	5 x rated power for 5 s	± (0.5 % + 0.0005 Ω)
Low temperature storage	-65 °C for 24 h	± (0.5 % + 0.0005 Ω)
High temperature exposure	1000 h at +170 °C	± (1.0 % + 0.0005 Ω)
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (0.5 % + 0.0005 Ω)
Mechanical shock	100 g's for 6 ms, 5 pulses	± (0.5 % + 0.0005 Ω)
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.0005 Ω)
Load life	1000 h at rated power, +70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.0005 Ω)
Solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.0005 Ω)
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	± (0.5 % + 0.0005 Ω)

PACKAGING ⁽¹⁾

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

Notes

- Embossed Carrier Tape per EIA-481
- ⁽¹⁾ Additional packaging details at www.vishay.com/doc?20051



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