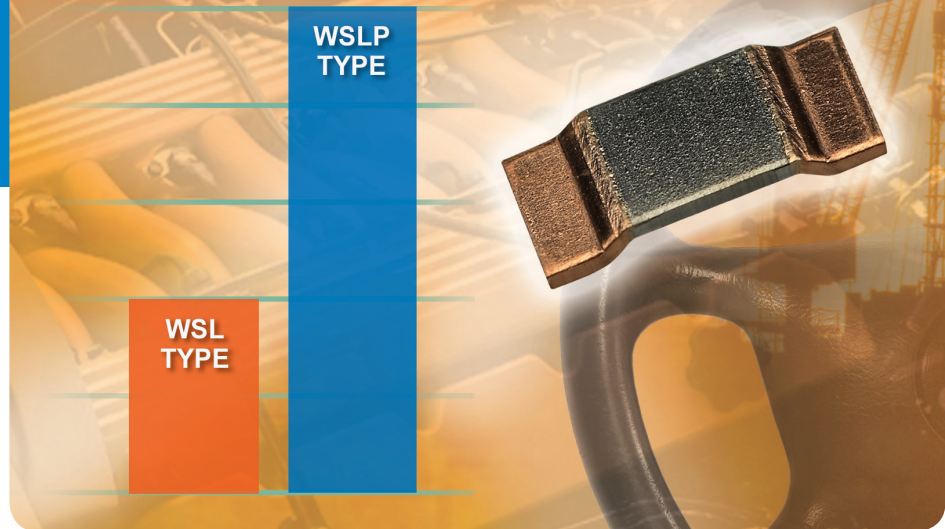




POWER METAL STRIP® RESISTOR

WSLP3921 and WSLP5931

High Power Density



High Power, 5 W to 10 W, Surface-Mount Power Metal Strip® Resistors

KEY BENEFITS

- The WSLP3921 resistors have very high power rating of 5 W and 9 W
- The WSLP5931 resistors have very high power rating of 7 W and 10 W
- Very low resistance values (down to 0.0003 Ω)
- AEC-Q200 qualified*

APPLICATIONS

- Automotive
 - Electronic controls (engine controls, climate controls, anti-lock brakes, etc.)
 - Brushless DC motor controls (electric power steering, electric – water pump / oil pump / air conditioning / etc.)
 - Electric and hybrid controls (battery management)
- Industrial
 - Oil / gas well drilling (down hole test/measurement equipment)
 - Air conditioning / Heat pump (inverter control)
- Consumer
 - Air conditioning / Heat pump (inverter control)
 - White goods (inverter control)

*Flame retardance test may not be applicable to some resistor technologies

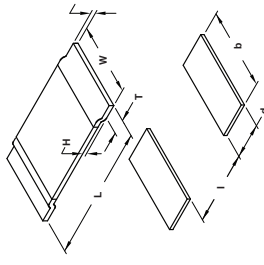
High Power, 5 W to 10 W, Surface Mount Power Metal Strip® Resistors

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, down to 0.0003Ω
- Specially selected and stabilized materials allow for high power rating (to 10 W)
- All welded construction
- Solid metal nickel-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3 μV/°C)
- Compliant to RoHS directive 2002/95/EC



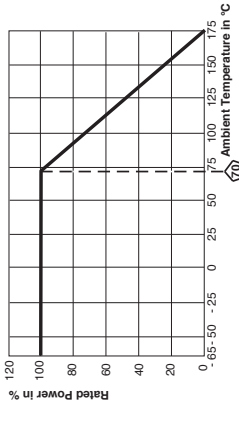
DIMENSIONS



MODEL	DIMENSIONS in inches (millimeters)			SOLDER PAD DIMENSIONS in inches (millimeters)		
	L	W	H	T	d	b
WSLP3921	0.394 ± 0.010 (10.0 ± 0.254)	0.205 ± 0.010 (5.20 ± 0.254)	0.020 (0.5)	0.080 ± 0.010 (2.00 ± 0.254)	1.02 (1.27)	0.050 (1.27)
WSLP5931	0.591 ± 0.010 (15.0 ± 0.254)	0.305 ± 0.010 (7.75 ± 0.254)	0.020 (0.5)	0.157 ± 0.010 (4.00 ± 0.254)	0.050 (1.27)	0.055 (1.40)

DERATING

GLOBAL MODEL	RESISTANCE VALUE (mΩ)	"D" THICKNESS (inches)	ELEMENT MATERIAL
WSLP3921	0.5	0.0300	Mn-Cu
WSLP3921	1.0	0.0150	Mn-Cu
WSLP3921	2.0	0.0270	Fe-Cr
WSLP3921	3.0	0.0170	Fe-Cr
WSLP3921	4.0	0.0130	Fe-Cr
WSLP5931	0.3	0.0300	Mn-Cu
WSLP5931	0.5	0.0180	Mn-Cu
WSLP5931	1.0	0.0330	Fe-Cr
WSLP5931	2.0	0.0155	Fe-Cr
WSLP5931	3.0	0.0105	Fe-Cr



PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % ΔR
Short time overload	5 x rated power for 5 s	± 0.5 % ΔR
Low temperature operation	- 65 °C for 45 min	± 0.5 % ΔR
High temperature storage	1000 h at +175 °C	± 1.0 % ΔR
Bias humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % ΔR
Mechanical shock	100 g/s for 6 ms, 5 pulses	± 0.5 % ΔR
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % ΔR
Load life at 70 °C	260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 % ΔR
Moisture resistance	MIL-STD-202, method 106.0 % power, 7b not required	± 1.0 % ΔR

PACKAGING

MODEL	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLP3921	16 mm/embossed plastic	330 mm/13"	3000	EA
WSLP5931	16 mm/embossed plastic	330 mm/13"	1500	EA

Note: Embossed carrier tape per EIA-481-2.

Revision 10-Jul-08

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	POWER RATING P70 °C W	TOLERANCE %	RESISTANCE RANGE mΩ	RESISTANCE VALUES CURRENTLY AVAILABLE (1) mΩ	WEIGHT (typical) g/1000 pieces
WSLP3921	5.0	1.0 and 5.0	2 to 4	2, 3, 4	281
WSLP3921	9.0	1.0 and 5.0	0.5 to 1	0.5, 1	281
WSLP5931	7.0	1.0 and 5.0	1 to 3	1, 2, 3	398
WSLP5931	10.0	1.0 and 5.0	0.3 to 0.5	0.3, 0.5	398

Note: (1) Other values may be available, contact factory.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSLP3921 AND WSLP5931
Temperature coefficient	ppm/°C	± 75
Operating temperature range	°C	- 65 to + 275
Maximum continuous current	A	(P/R) ^{1/2}

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSLP3921L000FEA

W	S	L	P	3	9	2	1	2	L	0	0	F	E	A																				
<table border="0"> <tr> <td>GLOBAL MODEL</td> <td>RESISTANCE VALUE</td> <td>TOLERANCE CODE</td> <td>PACKAGING CODE</td> </tr> <tr> <td>WSLP3921</td> <td>L = mΩ</td> <td>F = ± 1.0 %</td> <td>EA = Lead (Pb)-free, tape/reel</td> </tr> <tr> <td>WSLP5931</td> <td>2L000 = 0.002 Ω</td> <td>J = ± 5.0 %</td> <td>EK = Lead (Pb)-free, bulk</td> </tr> <tr> <td></td> <td></td> <td></td> <td>SPECIAL</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Reserved for future specials</td> </tr> </table>															GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	WSLP3921	L = mΩ	F = ± 1.0 %	EA = Lead (Pb)-free, tape/reel	WSLP5931	2L000 = 0.002 Ω	J = ± 5.0 %	EK = Lead (Pb)-free, bulk				SPECIAL				Reserved for future specials
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** Please see document " Vishay Material Category Policy": www.vishay.com/doc79902

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