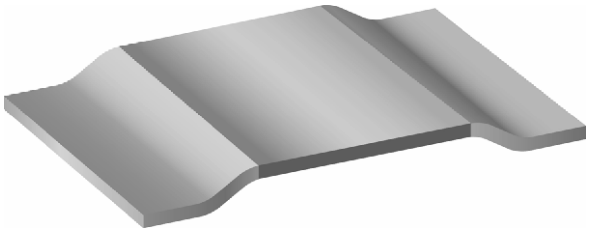
Power Metal Strip® Resistors, Very High Power (to 10 W) Low Value (Down to 0.0003 Ω), Surface Mount



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, down to 0.0003 Ω
- Specially selected and stabilized materials allow for high power rating (to 10 W)
- All welded construction
- Solid metal iron-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)
- AEC-Q200 qualified available (1)
- Compliant to RoHS Directive 2002/95/EC

AUTOMOTIVE GRADE Available

Pb-free

RoHS COMPLIANT

GREEN (5-2008)**

Note

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\,°C}$ W	TOLERANCE %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE (2) Ω	WEIGHT (typical) g/1000 pieces
WSLP3921	3921	5.0	1.0, 5.0	2m to 4m	2m, 3m, 4m	281
WSLP3921	3921	9.0	1.0, 5.0	0.5m to 1m	0.5m, 1m	281
WSLP5931	5931	7.0	1.0, 5.0	1m to 3m	1m, 2m, 3m	398
WSLP5931	5931	10.0	1.0, 5.0	0.3m to 0.5m	0.3m, 0.5m	398

Note

(2) Other values may be available, contact factory.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 175 for 0.3 mΩ and 0.5 mΩ, ± 75 for 1 mΩ to 4 mΩ
Operating temperature range	°C	- 65 to + 170
Maximum continuous current	A	$(P/R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

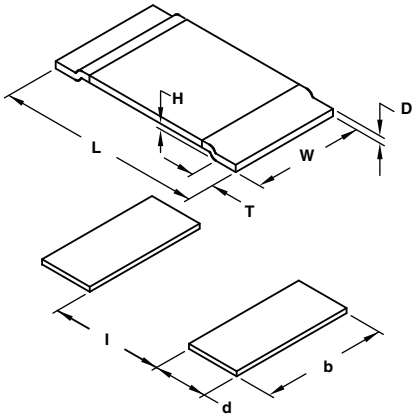
Global Part Numbering: WSLP39212L000FEA

W	S	L	P	3	9	2	1	2	L	0	0	0	F	E	A		

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
WSLP3921 **WSLP5931**	**L** = mΩ **2L000** = 0.002 Ω	**F** = ± 1.0 % **J** = ± 5.0 %	**EA** = Lead (Pb)-free, tape/reel **EK** = Lead (Pb)-free, bulk	Reserved for future specials

** Please see document “Vishay Material Category Policy”: www.vishay.com/doc?99902

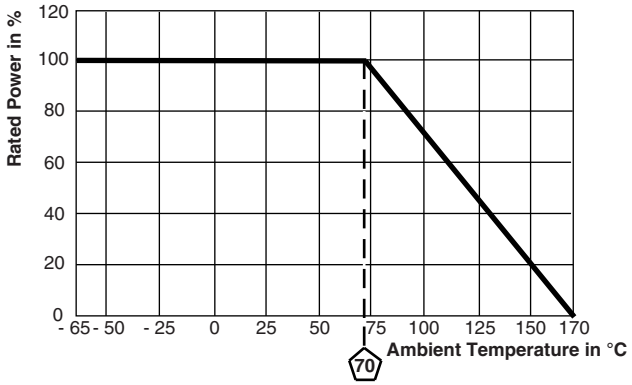
DIMENSIONS



MODEL	DIMENSIONS in inches (millimeters)				SOLDER PAD DIMENSIONS in inches (millimeters)		
	L	W	H	T	d	b	l
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)	0.106 ± 0.010 (2.70 ± 0.254)	0.244 ± 0.010 (6.20 ± 0.254)	0.220 ± 0.005 (5.60 ± 0.13)
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)	0.205 ± 0.010 (5.20 ± 0.254)	0.344 ± 0.010 (8.75 ± 0.254)	0.220 ± 0.005 (5.60 ± 0.13)

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

DERATING



PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % Δ*R*
Short time overload	5 x rated power for 5 s	± 0.5 % Δ*R*
Low temperature operation	- 65 °C for 45 min	± 0.5 % Δ*R*
High temperature storage	1000 h at + 170 °C	± 1.0 % Δ*R*
Bias humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % Δ*R*
Mechanical shock	100 *g*'s for 6 ms, 5 pulses	± 0.5 % Δ*R*
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % Δ*R*
Load life at 70 °C	1000 h, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % Δ*R*
Resistance to solder heat	260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 % Δ*R*
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 1.0 % Δ*R*

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLP3921	16 mm/embossed plastic	330 mm/13"	3000	EA
WSLP5931	24 mm/embossed plastic	330 mm/13"	1500	EA

Note

- Embossed Carrier Tape per EIA-481.

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
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