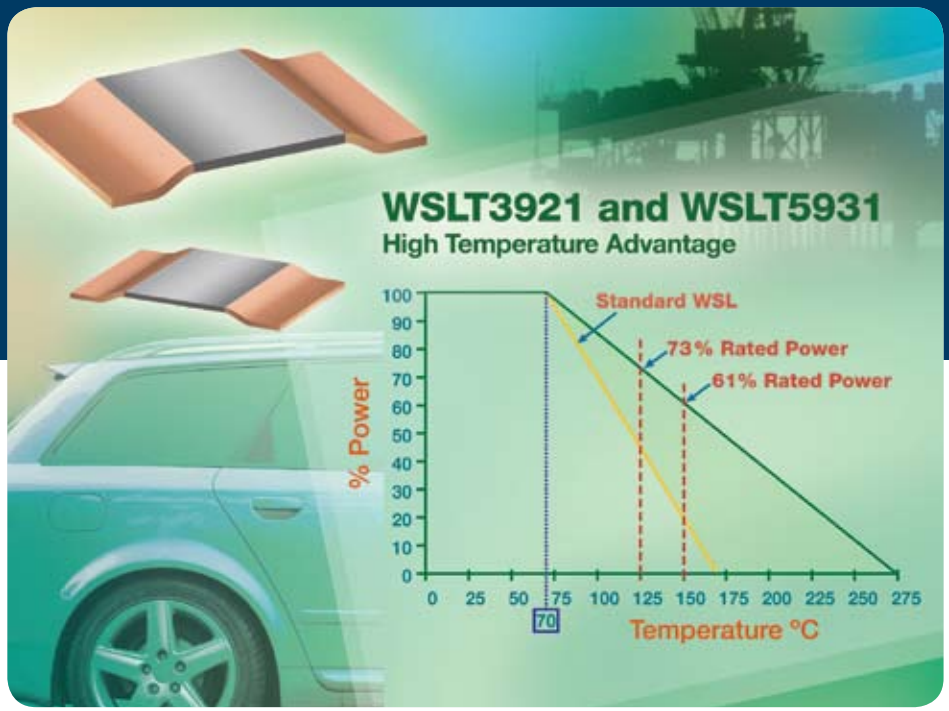
POWER METAL STRIP® RESISTORS

WSLT3921/5931



WSLT3921 and WSLT 5931

High-Temperature (+275 °C) 3-W and 5-W Surface-Mount Power Metal Strip® Resistors

FEATURES

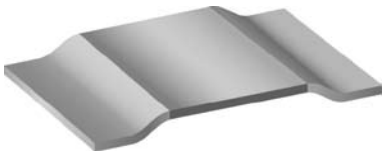
- Ideal for use in harsh, high temperature environments (to +275 °C)
- Enables use in high-temperature environments with less derating required: for example, 61 % rated power at 150 °C
- Operating temperature range of –65 °C to +275 °C
- Very low resistance values: down to 0.001 Ω
- Low TCR: < 20 ppm/°C
- Very low inductance: < 5 ηH
- Excellent frequency response to 50 MHz
- Low thermal EMF: < 3 µV/°C
- Lead (Pb)-free construction is RoHS-compliant

APPLICATIONS

- Automotive electronic controls: engine controls, audio electronics, climate controls, anti-lock brakes, etc.
- Oil/gas well drilling: down-hole test and measurement equipment

Datasheet is available on our web site at www.vishay.com
for WSLT3921/5931 - http://www.vishay.com/doc?30136

Power Metal Strip® Resistors, High Temperature (275 °C) Low Value (down to 0.001 Ω), Surface Mount



FEATURES

- 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
- Specially selceted and stabilized materials allow for high temperature derating (to + 275 °C)
- All welded construction
- Solid metal nickel-chrome alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 ηH)
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3 μV/°C)

RoHS COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{70\,°C}$	TOLERANCE %	RESISTANCE VALUES AVAILABLE mΩ	WEIGHT (typical) g/1000 pieces
WSLT3921	3.0	1.0 and 5.0	2, 3, 4	281
WSLT5931	5.0	1.0 and 5.0	1, 2, 3	398

Note

- Part Marking: no part marking on these parts

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSLT3921 AND WSLT5931
Temperature Coefficient	ppm/°C	± 75
Operating Temperature Range	°C	- 65 to + 275
Maximum Working Voltage	A	$(P/R)^{1/2}$

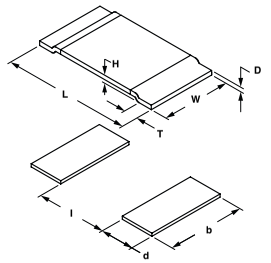
GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSLT39212L000FEA

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

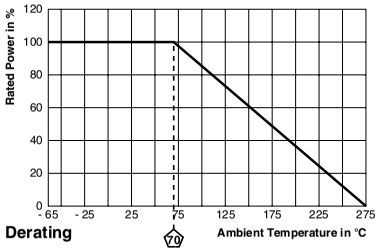
GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
WSLT3921 **WSLT5931**	**L** = mΩ **2L000** = 0.002 Ω	**F** = ± 1.0 % **J** = ± 5.0 %	**EA** = Lead (Pb)-free, tape/reel **EK** = Lead (Pb)-free, bulk	Reserved for future specials

DIMENSIONS



MODEL	DIMENSIONS in inches [millimeters]			
	L	W	H	T
WSLT3921	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]
WSLT5931	0.591 ± 0.010 [15.0 ± 0.254]	0.305 ± 0.010 [7.75 ± 0.254]	0.020 ± 0.010 [0.5]	0.157 ± 0.010 [4.00 ± 0.254]

MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]		
	d	b	L
WSLT3921	0.106 ± 0.010 [2.70 ± 0.254]	0.244 ± 0.010 [6.20 ± 0.254]	0.220 ± 0.005 [5.60 ± 0.13]
WSLT5931	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	ELEMENT MATERIAL
WSLT3921	2.0	0.0270	Fe-Cr
WSLT3921	3.0	0.0170	Fe-Cr
WSLT3921	4.0	0.0130	Fe-Cr
WSLT5931	1.0	0.0330	Fe-Cr
WSLT5931	2.0	0.0155	Fe-Cr
WSLT5931	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	± (1.0 % + 0.0005 Ω) Δ*R*
Short Time Overload	5 x rated power for 5 s	± (0.5 % + 0.0005 Ω) Δ*R*
Low Temperature Storage	- 65 °C for 45 min	± (0.5 % + 0.0005 Ω) Δ*R*
High Temperature Exposure	1000 h at + 275 °C	± (1.0 % + 0.0005 Ω) Δ*R*
Bias Humidity	+ 85 °C, 85 % RH, 10 % Bias, 1000 h	± (0.5 % + 0.0005 Ω) Δ*R*
Mechanical Shock	100 g's for 6 ms, 5 pulses	± (0.5 % + 0.0005 Ω) Δ*R*
Vibration	Frequency varied 10 to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.0005 Ω) Δ*R*
Load Life	1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.0005 Ω) Δ*R*
Resistance to Solder Heat	260 °C solder, 10 - 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.0005 Ω) Δ*R*
Moisture Resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	± (0.5 % + 0.0005 Ω) Δ*R*

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLT3921	16 mm/embossed plastic	330 mm/13"	3000	EA
WSLT5931	16 mm/embossed plastic	330 mm/13"	1500	EA

Note

- Embossed carrier tape per EIA-481-2

Revision 03-Dec-07