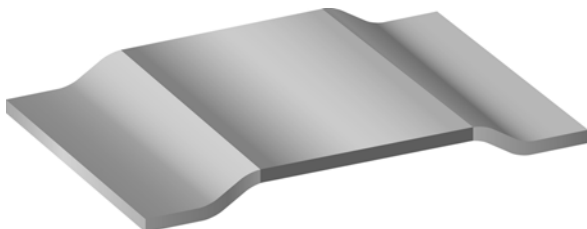


Power Metal Strip® Resistors, High Temperature (275 °C), Low Value (down to 0.0003 Ω), Surface Mount



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 temperature derating (to +275 °C)
- All welded construction
- Solid metal iron-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 nH)
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified available ⁽¹⁾
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

Note

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\text{ °C}}$ W	TOLERANCE %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE ⁽²⁾ Ω	WEIGHT (typical) g/1000 pieces
WSLT3921	3921	3.0	1.0, 5.0	0.5 m to 4 m	0.5 m, 1 m, 2 m, 3 m, 4 m	281
WSLT5931	5931	5.0	1.0, 5.0	0.3 m to 3 m	0.3 m, 0.5 m, 1 m, 2 m, 3 m	398

Notes

- Part marking: No part marking on these parts.
- ⁽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
Element TCR	ppm/°C	< 20
Operating temperature range	°C	-65 to +275
Maximum working voltage	V	$(P \times R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSLT39212L000FEA (WSLT3921, 0.002 Ω, ± 1 %)

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

GLOBAL MODEL

WSLT3921
WSLT5931

RESISTANCE VALUE

L = mΩ
2L000 = 0.002 Ω

TOLERANCE CODE

F = ± 1.0 %
J = ± 5.0 %

PACKAGING CODE

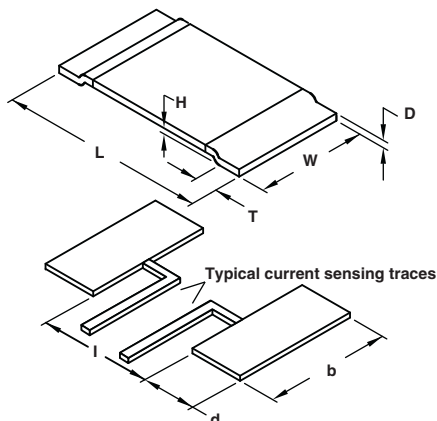
EA = Lead (Pb)-free, tape/reel
EK = Lead (Pb)-free, bulk

SPECIAL

Reserved for
future specials



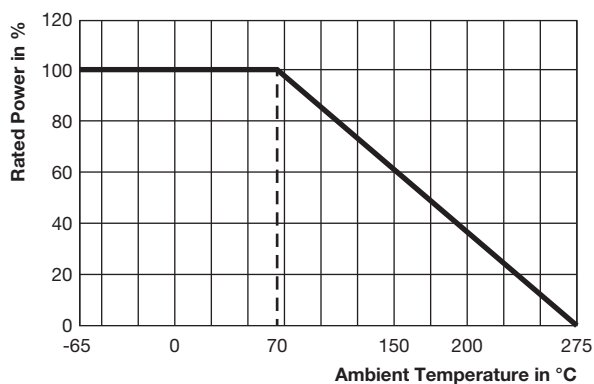
DIMENSIONS



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 (0.5)	0.157 ± 0.010 (4.00 ± 0.254)

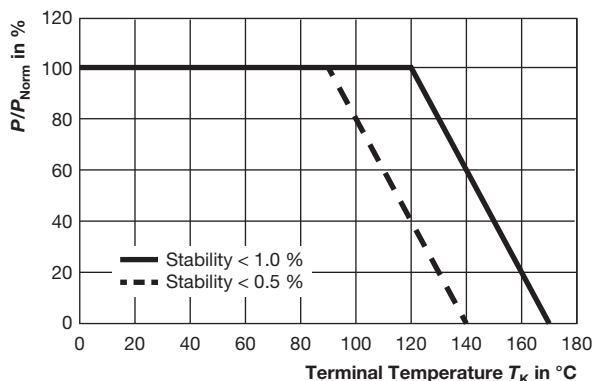
MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)		
	d	b	l
WSLT3921	0.106 ± 0.010 (2.70 ± 0.254)	0.244 ± 0.010 (6.20 ± 0.254)	0.220 ± 0.005 (5.60 ± 0.13)
WSLT5931	0.205 ± 0.010 (5.20 ± 0.254)	0.344 ± 0.010 (8.75 ± 0.254)	0.220 ± 0.005 (5.60 ± 0.13)

DERATING - AMBIENT TEMPERATURE

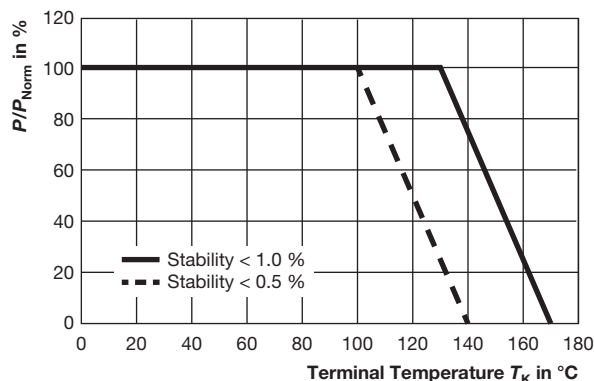


GLOBAL MODEL	RESISTANCE VALUE (mΩ)	"D" THICKNESS (Inches)	ELEMENT MATERIAL
WSLT3921	0.5	0.0300	Mn-Cu
WSLT3921	1.0	0.0150	Mn-Cu
WSLT3921	2.0	0.0270	Fe-Cr
WSLT3921	3.0	0.0170	Fe-Cr
WSLT3921	4.0	0.0130	Fe-Cr
WSLT5931	0.3	0.0300	Mn-Cu
WSLT5931	0.5	0.0180	Mn-Cu
WSLT5931	1.0	0.0330	Fe-Cr
WSLT5931	2.0	0.0155	Fe-Cr
WSLT5931	3.0	0.0105	Fe-Cr

DERATING - TERMINAL TEMPERATURE



Example: WSLT3921 0.0005 Ω



Example: WSLT5931 0.0005 Ω



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$
Short time overload	5x rated power for 5 s	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Low temperature storage	-65 °C for 45 min	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
High temperature exposure	1000 h at + 275 °C	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$

PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLT3921	16 mm/embossed plastic	330 mm/13"	3000	EA
WSLT5931	24 mm/embossed plastic	330 mm/13"	1500	EA

Note

- Embossed Carrier Tape per EIA-481.



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