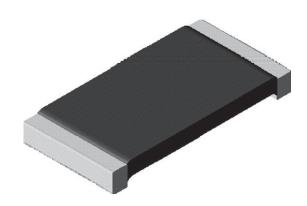


www.vishay.com

Vishay Dale

Power Metal Strip[®] Resistors, High Temperature (275 °C), Low Value (Down to 0.01 Ω), Surface-Mount



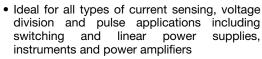
LINKS TO ADDITIONAL RESOURCES







FEATURES





 Proprietary processing technique produces extremely low resistance values



 All welded construction of the Power Metal Strip® resistors are ideal for all types of current sensing, voltage division and pulse applications

ROHS COMPLIANT HALOGEN FREE GREEN

 Sulfur resistance by construction that is unaffected by high sulfur environments

- Specially selected and stabilized materials allow for high temperature derating (to +275 °C)
- Solid metal nickel-chrome alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 nH)
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified (1)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

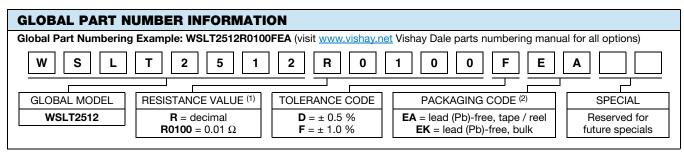
Notes

- 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
- "SMD Current Sense: AEC-Q200 vs. Vishay Qualification" technical note: www.vishav.com/doc?30416
- (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	WEIGHT (typical) g/1000 pieces	
WSLT2512	2512	1.0 (1)	0.5, 1.0	0.01 to 0.50	63.6	

Notes

- Part marking: DALE, value, tolerance code
- "Thermal Management for Surface-Mount Devices" white paper: www.vishay.com/doc?30380
- ⁽¹⁾ For values above 0.1 Ω derate linearly to 80 % rated power at 0.5 Ω



Notes

- Per PCN-DR-00009-2022-REV-0, WSL marking will be removed effective March 1st, 2023
- 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

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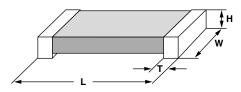


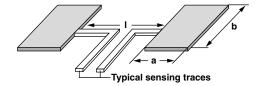
TECHNICAL SPECIFICATIONS				
PARAMETER	UNIT	WSL RESISTOR CHARACTERISTICS		
Component temperature coefficient (including terminal) (1) measured from -55 °C to +150 °C	ppm/°C	± 75		
Element TCR (2)	ppm/°C	< 20		
Operating temperature range	°C	-65 to +275		
Maximum working voltage (3)	V	$(P \times R)^{1/2}$		

Notes

- "Temperature Coefficient of Resistance for Current Sensing" white paper: www.vishay.com/doc?30405
- (1) Component TCR total TCR that includes the TCR effects of the resistor element and the copper terminal
- (2) Element TCR only applies to the alloy used for the resistor element; refer to item 1 in the construction illustration on the following page
- (3) Maximum working voltage the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive

DIMENSIONS in inches (millimeters)



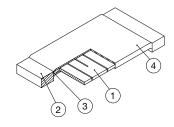


Notes

- 3D models available: www.vishay.com/doc?30338
- Surface-mount solder profile recommendations: www.vishay.com/doc?31052

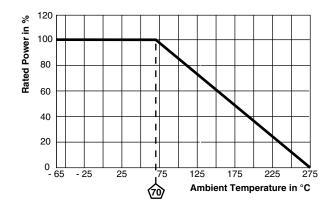
MODEL	DIMENSIONS				SOLDER PAD DIMENSIONS		
MODEL	L	W	Н	Т	а	b	I
WSLT2512	0.250 ± 0.010 (6.35 ± 0.254)	0.125 ± 0.010 (3.18 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.030 ± 0.010 (0.762 ± 0.254)	0.065 (1.65)	0.145 (3.68)	0.160 (4.06)

WELDED CONSTRUCTION 2512

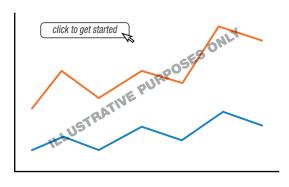


- Resistive element:
 solid metal nickel-chrome
 or manganese-copper
 alloy resistive element with
 low TCR (< 20 ppm/°C)
- 2) Plated terminal: Solid copper, 100 % Sn (100 μ" min.) with 100 % Ni (20 μ" min.) under layer finish
- 3) Terminal / element weld
- 4) Silicone coating with ink print

DERATING



PULSE CAPABILITY



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

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PERFORMANCE					
TEST	CONDITIONS OF TEST	TEST LIMITS			
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 0.5 %			
Short time overload	5 x rated power for 5 s	± 0.5 %			
Low temperature operation	-65 °C for 24 h	± 0.5 %			
High temperature exposure	1000 h at +275 °C	± 1.0 %			
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 %			
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 %			
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 %			
Load life at 70 °C	1000 h, 1.5 h "ON", 0.5 h "OFF"	± 1.0 %			
Load life at 150 °C	1000 h, 1.5 h "ON", 0.5 h "OFF"	± 1.0 %			
Resistance to solder heat	260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 %			
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 1.0 %			

PACKAGING					
MODEL	REEL				
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE	
WSLT2512	12 mm / embossed plastic	178 mm / 7"	2000	EA	

Notes

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

Legal Disclaimer Notice



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