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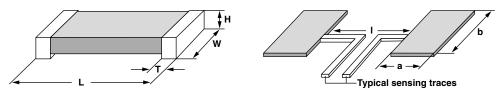
Vishay Dale

TECHNICAL SPECIFICATIONS							
PARAMETER	UNIT	RESISTOR CHARACTERISTICS					
PARAMETER		WSLP0603 (1)	WSLP0805	WSLP1206	WSLP2010	WSLP2512	
		\pm 75 for 50 m Ω to 100 m Ω	\pm 75 for 7 m Ω to 500 m Ω				
Component temperature coefficient (including terminal) (2) TCR measured from -55 °C to +155 °C		\pm 110 for 10 m Ω to 49 m Ω	\pm 110 for 5 m Ω to 6.9 m Ω				
	ppm/°C	ppm/°C -			\pm 150 for 3 m Ω to 4.9 m Ω		
		-	\pm 275 for 1 m Ω to 2.9 m Ω				
		-	\pm 400 for 0.5 m Ω to 0.99 m Ω			Ω	
Element TCR (3)	ppm/°C	< 20					
Operating temperature range	°C	-65 to +170					
Maximum working voltage (4)	V	$(P \times R)^{1/2}$					

Notes

- (1) Consult factory for detailed TCR performance across temperature range associated with PCN-DR-00003-2020 for WSLP0603. TCR performance is improved for +25 °C to +155 °C
- (2) Component TCR total TCR that includes the TCR effects of the resistor element and the copper terminal
- (3) Element TCR only applies to the alloy used for the resistor element; refer to item 1 in the construction illustration on the following page
- (4) Maximum working voltage the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive

DIMENSIONS



Notes

- 3D models available. WSLP models: www.vishay.com/doc?30313
- Surface-mount solder profile recommendations: <u>www.vishay.com/doc?31052</u>

MODEL	RESISTANCE RANGE	DIMENSIONS in inches (millimeters)			SOLDER PAD DIMENSIONS in inches (millimeters)			
	(Ω)	L	W	Н	Т	а	b	I
WSLP0603 (1)	0.01 to 0.1	0.060 ± 0.010 (1.52 ± 0.254)	0.030 ± 0.010 (0.76 ± 0.254)	0.016 ± 0.005 (0.406 ± 0.127)	0.015 ± 0.010 (0.381 ± 0.254)	0.040 (1.02)	0.040 (1.02)	0.020 (0.50)
WSLP0805	0.005 to 0.1	0.080 ± 0.010 (2.03 ± 0.254)	0.050 ± 0.010 (1.27 ± 0.254)	0.013 ± 0.010 (0.330 ± 0.254)	0.015 ± 0.010 (0.381 ± 0.254)	0.040 (1.02)	0.050 (1.27)	0.020 (0.50)
WSLP1206	0.0005 to 0.00099	0.126 ± 0.010 (3.20 ± 0.254)			$ \begin{array}{c c} 0.041 \pm 0.010 & 0.089 \\ 0.041 \pm 0.010 & (2.26) \\ \hline 0.086 & (2.18) \\ \end{array} $		0.076 (1.93)	0.023 (0.58)
	0.001 to 0.0019		0.063 ± 0.010	0.025 ± 0.010			0.076 (1.93)	0.029 (0.74)
	0.002 to 0.0059		(1.60 ± 0.254)		0.070 (1.78)	0.076 (1.93)	0.061 (1.55)	
	0.006 to 0.050					0.065 (1.65)	0.076 (1.93)	0.071 (1.80)
WSLP2010 -	0.001 to 0.0069	0.200 ± 0.010 (5.08 ± 0.254)	0.100 ± 0.010 (2.54 ± 0.254)	0.025 ± 0.010	0.058 ± 0.010 (1.47 ± 0.254)	0.093 (2.36)	0.120 (3.05)	0.055 (1.40)
	0.007 to 0.03			(0.635 ± 0.254)	0.020 ± 0.010 (0.508 ± 0.254)	0.055 (1.40)		0.130 (3.30)
WSLP2512	0.0005 to 0.00099	0.250 ± 0.010	0.125 ± 0.010	0.025 ± 0.010	0.107 ± 0.010 (2.72 ± 0.254)	0.120 (3.05)	0.145	0.050 (1.27)
	0.001 to 0.0049				0.087 ± 0.010 (2.21 ± 0.254)			
	0.005 to 0.0069 (6.35 ± 0.254)	(3.18 ± 0.254)	(0.635 ± 0.254)	0.047 ± 0.010 (1.19 ± 0.254)	0.083 (2.11)	(3.68)	0.125 (3.18)	
	0.007 to 0.01				0.030 ± 0.010 (0.762 ± 0.254)	0.065 (1.65)		0.160 (4.06)

Note

⁽¹⁾ PCN-DR-00003-2020 changed terminal height for WSLP0603 from 0.013" ± 0.005" for clad construction to 0.016" ± 0.005" for welded construction

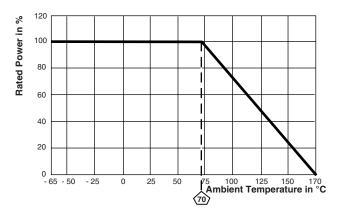




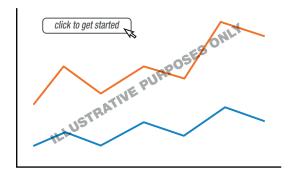
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DERATING

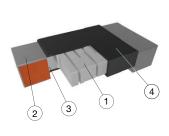


PULSE CAPABILITY



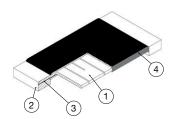
www.vishay.com/resistors/power-metal-strip-calculator

WELDED CONSTRUCTION 2512, 2010, 1206, 0603



- Resistive element:
 solid metal nickel-chrome
 or manganese-copper
 alloy resistive element with
 low TCR (< 20 ppm/°C)
- 2 Terminal: solid copper, 100 % Sn (200 μ" min.) with 100 % Ni (40 μ" min.) under layer finish
- (3) Terminal / element weld
- (4) Silicone coating with ink print

CLAD CONSTRUCTION 0805



- 1) Resistive element: Ni-Cr
- 2 Terminal: solid copper, 100 % Sn (200 μ" min.) with 100 % Ni (40 μ" min.) under layer finish
- (3) Terminal to element cladding
- 4 High temperature encapsulant: "siliconized polyester" coating material

PERFORMANCE					
TEST	CONDITIONS OF TEST	TEST LIMITS			
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % + 0.0005 Ω			
Short time overload	Refer to link for short time overload performance and pulse capability; www.vishay.com/resistors/power-metal-strip-calculator/	± 0.5 % + 0.0005 Ω			
Low temperature operation	-65 °C for 24 h	± 0.5 % + 0.0005 Ω			
High temperature exposure	1000 h at +170 °C	± 1.0 % + 0.0005 Ω			
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % + 0.0005 Ω			
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 % + 0.0005 Ω			
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % + 0.0005 Ω			
Load life	1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % + 0.0005 Ω			
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 % + 0.0005 Ω			
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 % + 0.0005 Ω			

PACKAGING (1)							
MODEL		REEL					
	TAPE WIDTH	DIAMETER	PIECES / REEL	CODE			
WSLP0603	8 mm / punched paper	178 mm / 7"	5000	EA			
WSLP0805	8 mm / punched paper	178 mm / 7"	5000	EA			
WSLP1206	8 mm / embossed plastic	178 mm / 7"	4000	EA			
WSLP2010	12 mm / embossed plastic	178 mm / 7"	4000	EA			
WSLP2512	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



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