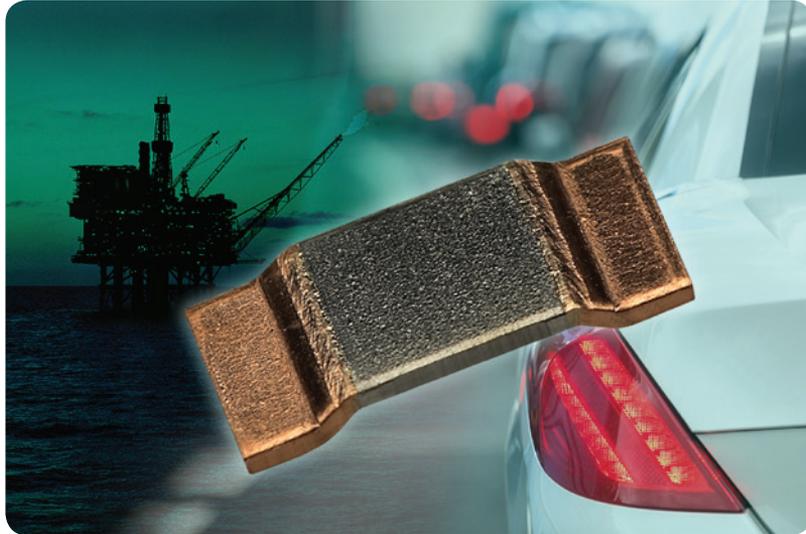




# POWER METAL STRIP® RESISTORS

WSLF2512

## Power Metal Strip® Resistors, Low Value (Down to 0.0003 Ω), Surface-Mount



### KEY BENEFITS

- Low resistance range (down to 0.0003 Ω) minimizes power losses for high current circuits
- High power density (192 W/in<sup>2</sup>) enables design of smaller high-power circuits

### APPLICATIONS

#### Automotive:

- Electronic controls (engine controls, climate controls, anti-lock brakes, etc.)
- Brushless DC motor controls (electric power steering, water pumps, oil pumps, air conditioning, etc.)
- Electric and hybrid controls (battery management)

#### Industrial:

- Oil / gas well drilling (down hole test/measurement equipment), air conditioning / heat pump (inverter control), VRM servers

#### Consumer:

- Air conditioners, inverter control for heat pumps and white goods

### RESOURCES

- Datasheet: WSLF2512 - [www.vishay.com/doc?30193](http://www.vishay.com/doc?30193)
- For technical questions contact [ww2bresistors@vishay.com](mailto:ww2bresistors@vishay.com)
- Material categorization: For definitions please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

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### FEATURES

- Power Metal Strip® all-welded construction is ideal for all types of current sensing, voltage division, and pulse applications
- Proprietary processing technique produces extremely low resistance values, down to 0.0003 Ω
- Solid metal nickel-chrome, manganese-copper, or manganese-copper-tin alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 2 nH)
- Low thermal EMF (< 3 μV/°C)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

**DESIGN TOOLS** (click logo to get started)



STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ (1) W	POWER RATING $P_{100^\circ\text{C}}$ (2) W	TOLERANCE %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE (3) Ω	WEIGHT (typical) g/1000 pieces
WSLF2512	2512	6.0	3.0	1.0, 5.0	0.3m to 3m	0.3m, 0.5m	142
	2512	5.0	3.0	1.0, 5.0	0.3m to 3m	1m, 1.3m, 2m	142
	2512	4.0	2.0	1.0, 5.0	0.3m to 3m	3m	142

### Notes

- Part marking: no part marking on these parts.
- (1) See Ambient Temperature Derating on next page, Fig. 1.
- (2) See Terminal Temperature Derating on next page, Fig. 2.
- (3) Other values may be available, contact factory.

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	WSL RESISTOR CHARACTERISTICS
Component temperature coefficient (including terminal) (1)	ppm/°C	± 200 for 0.3 mΩ and 0.5 mΩ, ± 170 for 1.0 m, ± 70 for 2 mΩ and 3 mΩ
Element TCR (2)	ppm/°C	< 20
Operating temperature range	°C	-65 to +170
Maximum working voltage (3)	V	$(P \times R)^{1/2}$

### Notes

- (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.
- (3) Maximum working voltage - the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive.

GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering: WSLF25121L000FEA (WSLF2512, 0.001 Ω, ± 1 %) (visit <a href="http://www.vishay.net">www.vishay.net</a> Vishay Dale parts numbering manual for all options)																	
W	S	L	F	2	5	1	2	1	L	0	0	0	F	E	A		
GLOBAL MODEL			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING CODE (1)			SPECIAL					
WSLF2512			L = mΩ L5000 = 0.0005 Ω L1000 = 0.0010 Ω			F = ± 1.0 % J = ± 5.0 %			EA = lead (Pb)-free, tape/reel EK = lead (Pb)-free, bulk			Reserved for future specials					

### Note

- (1) 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.