

Power Metal Strip® Resistors, Low Value, High Power, Surface-Mount, 4-Terminal



KEY BENEFITS

- 4-terminal design allows for stable resistance tolerances to 1 %
- 3 W power capability
- Very low resistance value (1.0 mΩ; 0.5 mΩ coming Q1 '17)
- Low TCR < 50 ppm over temperature of +20 °C to +60 °C

APPLICATIONS

Automotive:

- Electronic controls (engine controls, climate controls, anti-lock brakes, intelligent parking brake, etc.)
- Brushless DC motor controls (electronic power steering, electric – water pump / oil pump / air conditioning / etc.)
- Electric and hybrid controls (battery management)

Industrial:

- Oil / gas well drilling (down hole test / measurement equipment)
- Air conditioning / heat pumps (inverter control)

Consumer:

- Air conditioning / heat pumps (inverter control)
- White goods (inverter control)

RESOURCE

- Datasheet: WSK1216 - www.vishay.com/doc?30189
- For technical questions contact ww2bresistors@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

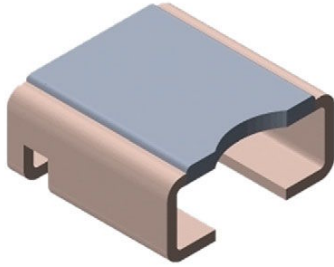


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**POWER METAL STRIP® RESISTORS**

WSK1216

**Power Metal Strip® Resistors,
Low Value, High Power, Surface-Mount, 4-Terminal****DESIGN TOOLS** (click logo to get started)**FEATURES**

- 4-terminal design allows for 1 % tolerance down to 0.001 Ω
- High power-to-footprint print size ratio
- All welded Power Metal Strip® construction is ideal for all types of current sensing, voltage division and pulse applications
- Proprietary processing technique produces extremely low resistance values, down to 0.001 Ω
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Low thermal EMF (< 3 $\mu\text{V}/^\circ\text{C}$)
- Maximum solder temperature up to 350 °C for 30 s

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE \pm %	RESISTANCE VALUE RANGE ⁽¹⁾ Ω	THERMAL RESISTANCE $^\circ\text{K}/\text{W}$	WEIGHT (typical) g/1000 pieces
WSK1216	1216	3.0	1.0	1m	14.5	420

Notes

- Power rating depends on the max. temperature at the solder point, component placement density and the substrate material.
- ⁽¹⁾ Other values may be available, contact factory.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSL RESISTOR CHARACTERISTICS
Component temperature coefficient (including terminal) ⁽¹⁾	ppm/°C	< 50 over temperature of +20 °C to +60 °C
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 example: WSK12161L000FEA (WSK1216, 0.0001 Ω , \pm 1 %)**(visit www.vishay.net Vishay Dale parts numbering manual for all options)

W	S	K	1	2	1	6	1	L	0	0	0	F	E	A		
GLOBAL MODEL WSK1216			RESISTANCE VALUE L = m Ω 1L000 = 0.0010 Ω				TOLERANCE CODE F = \pm 1.0 %		PACKAGING CODE ⁽¹⁾ EA = lead (Pb)-free, tape/reel EK = lead (Pb)-free, bulk				SPECIAL (Dash number) (Up to 2 digits) From 1 to 99 as applicable			

Note

- ⁽¹⁾ Packaging code: EB (lead (Pb)-free) 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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