



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

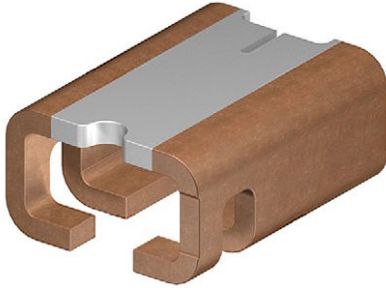
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



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



DESIGN SUPPORT 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
- Construction is unaffected by high sulfur environments
- 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 μV/°C)
- Maximum solder temperature up to 350 °C for 30 s
- AEC-Q200 qualified ⁽¹⁾
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE


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 $P_{70\text{ }^\circ\text{C}}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE ⁽¹⁾ Ω	THERMAL RESISTANCE °K/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

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSK12161L000FEA (WSK1216, 0.0001 Ω, ± 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 (7 digits)
WSK1216

RESISTANCE VALUE (5 digits)
L = mΩ 1L000 = 0.0010 Ω

TOLERANCE CODE (1 digit)
F = ± 1.0 %

PACKAGING CODE ⁽¹⁾ (2 digits)
EA = lead (Pb)-free, tape/reel EK = lead (Pb)-free, bulk

SPECIAL (2 digits)
(dash number) (up to 2 digits) from 1 to 99 as applicable

Note

- ⁽¹⁾ Packaging code: EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. The non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it has a package quantity of 1000 pieces

PATENT(S): www.vishay.com/patents

This Vishay product is protected by one or more United States and International patents.

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	$(P \times R)^{1/2}$

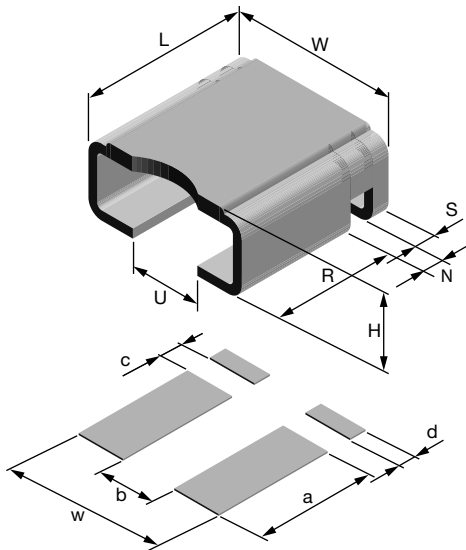
Notes

- (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

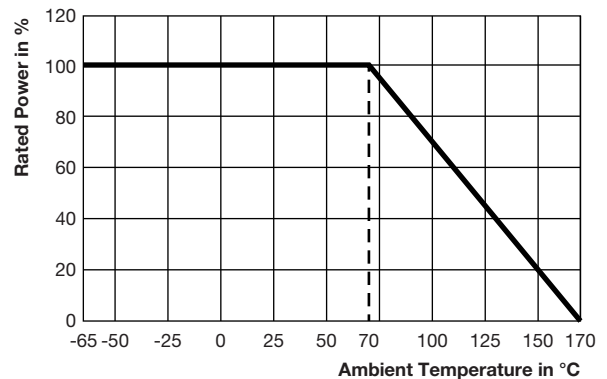
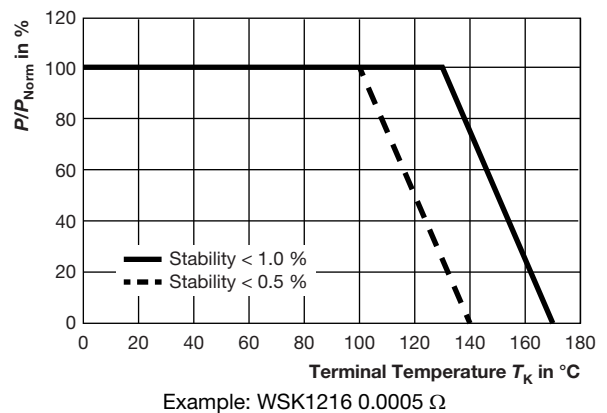
DIMENSIONS in inches (millimeters)

MODEL	DIMENSIONS						
	W	L	H	R (REF.)	S	U	N
WSK1216	0.122 - 0.014 (3.1 - 0.35)	0.150 ± 0.012 (3.81 ± 0.3)	0.075 - 0.014 (1.9 - 0.35)	0.106 (2.70)	0.020 ± 0.004 (0.5 ± 0.1)	0.031 + 0.012 (0.8 + 0.3)	0.024 + 0.006 (0.6 + 0.15)

MODEL	SOLDER PAD DIMENSIONS				
	a	b	c	d	w
WSK1216	0.116 (2.95)	0.024 (0.61)	0.020 (0.50)	0.028 (0.70)	0.142 (3.60)


Notes

- 3D models available: www.vishay.com/doc?30334
- Surface mount solder profile recommendations: www.vishay.com/doc?31052

DERATING - AMBIENT TEMPERATURE

DERATING - TERMINAL TEMPERATURE




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	5x rated power for 5 s	± 0.5 %
Low temperature operation	-65 °C for 24 h	± 0.5 %
High temperature exposure	1000 h at +170 °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	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 %
Resistance to solder heat	3x at 250 °C ± 5 °C for 30 s ± 5 s	± 0.5 %
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 %

PACKAGING (1)				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSK1216	12 mm/embossed plastic	330 mm/13"	3000	EA

Notes

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



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