

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



DESIGN SUPPORT TOOLS

3D
Models
Available


Design Tools
Available

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FEATURES

- 4-terminal design
- Ideal for all types of current sensing, voltage division and pulse applications
- Proprietary processing technique produces extremely low resistance values
- Sulfur resistance by construction that is unaffected by high sulfur environments
- Durable with all-welded construction
- All welded construction
- Solid metal nickel-chrome or manganese-copper resistive element with low TCR ppm/°C
- Low thermal EMF (< 3 µV/°C)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE
Available
GREEN
(5-2008)
Available

(< 20

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\text{ °C}}$ W	RESISTANCE VALUE RANGE Ω				WEIGHT (typical) g/1000 pieces
			Tol. ± 0.1 %	Tol. ± 0.25 %	Tol. ± 0.5 %	Tol. ± 1.0 %	
WSK1206...18	1206	0.5	0.04 to 0.05	0.02 to 0.05	0.01 to 0.05	0.01 to 0.05	16

Notes

- Part marking: due to resistor size limitation, parts will be marked with only the resistance value
- Resistance values are available per WSL decade table (www.vishay.com/doc?30117)

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Component temperature coefficient (including terminal) ⁽¹⁾	ppm/°C	± 35
Element TCR ⁽²⁾	ppm/°C	< 20
Operating temperature range	°C	-65 to +170
Maximum working voltage ⁽³⁾	V	$(P \times R)^{1/2}$

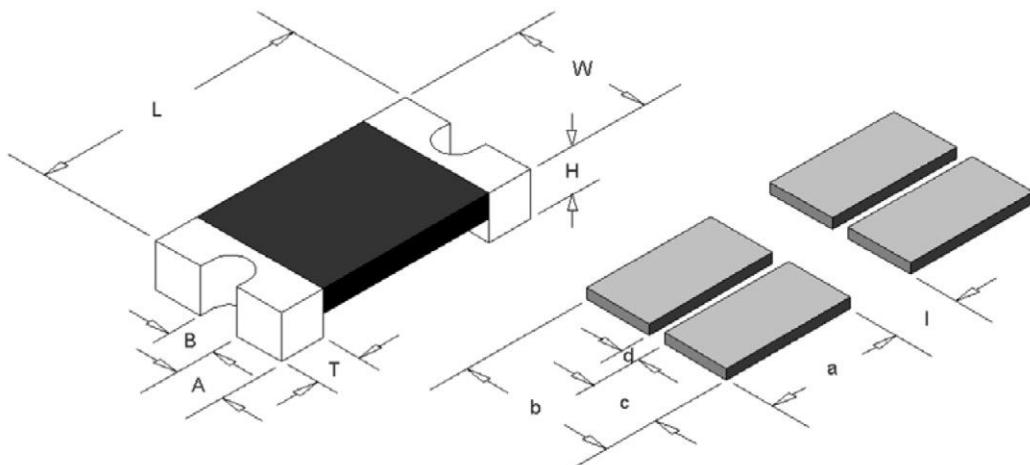
Notes

- (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; 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

GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering example: WSK1206R0150FEA																	
W	S	K	1	2	0	6	R	0	1	5	0	F	E	A	1	8	
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE ⁽¹⁾				SPECIAL	
WSK1206				R = decimal R0100 = 0.01 Ω				B = \pm 0.1 % C = \pm 0.25 % D = \pm 0.5 % F = \pm 1.0 %				EA = lead (Pb)-free, tape / reel EK = lead (Pb)-free, bulk				18 = "high power" option	

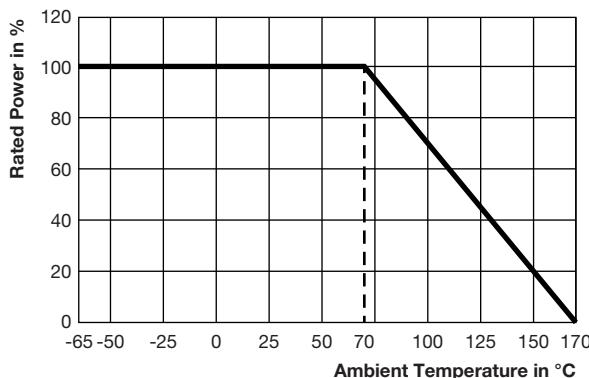
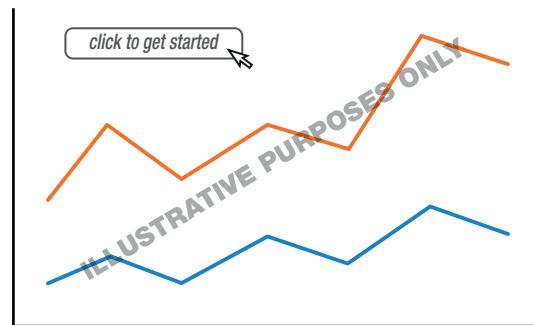
Note

⁽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.

DIMENSIONS


MODEL	DIMENSIONS in inches (millimeters)					
	L	W	H	T	A	B
WSK1206...18	0.126 \pm 0.010 (3.20 \pm 0.254)	0.063 \pm 0.010 (1.60 \pm 0.254)	0.025 \pm 0.010 (0.635 \pm 0.254)	0.020 \pm 0.010 (0.508 \pm 0.254)	0.023 \pm 0.010 (0.584 \pm 0.254)	0.018 \pm 0.010 (0.457 \pm 0.254)

MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)				
	a	b	c	d	I
WSK1206...18	0.040 (1.01)	0.070 (1.778)	0.030 (0.762)	0.01 (0.254)	0.070 (1.778)

DERATING

PULSE CAPABILITY

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

TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± (0.5 %) ΔR
Short time overload	5x rated power for 5 s	± (0.5 %) ΔR
Low temperature operation	-65 °C for 45 min	± (0.5 %) ΔR
High temperature exposure	1000 h at +170 °C	± (1.0 %) ΔR
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (0.5 %) ΔR
Mechanical shock	100 g's for 6 ms, 5 pulses	± (0.5 %) ΔR
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 %) ΔR
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 %) ΔR
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 %) ΔR
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± (0.5 %) ΔR

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSK1206...18	8 mm/embossed plastic	178 mm/7"	4000	EA

Notes

- Embossed carrier tape per EIA-481
- Wirewound, Metal Film, and Power Metal Strip® Packaging (www.vishay.com/doc?20051)

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