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# Power Metal Strip<sup>®</sup> Resistors, High Power, Surface Mount, 4-Terminal



#### **DESIGN SUPPORT TOOLS**

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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 manganesecopper resistive element with low TCR ppm/°C)
- (< 20

RoHS COMPLIANT

HALOGEN

FREE

**GREEN** 

(5-2008)

- Low thermal EMF (< 3 μV/°C)</li>
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL	SIZE	POWER RATING P <sub>70 °C</sub> W	RESISTANCE VALUE RANGE $\Omega$				WEIGHT (typical)
MODEL	SIZE		Tol. ± 0.1 %	Tol. ± 0.25 %	Tol. ± 0.5 %	Tol. ± 1.0 %	g/1000 pieces
WSK120618	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 (<u>www.vishay.com/doc?30117</u>)

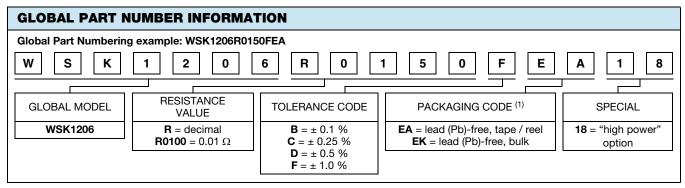
TECHNICAL SPECIFICATIONS					
PARAMETER	UNIT	RESISTOR CHARACTERISTICS			
Component temperature coefficient (including terminal) (1)	ppm/°C	± 35			
Element TCR (2)	ppm/°C	< 20			
Operating temperature range	°C	-65 to +170			
Maximum working voltage (3)	V	(P x R) <sup>1/2</sup>			

#### 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

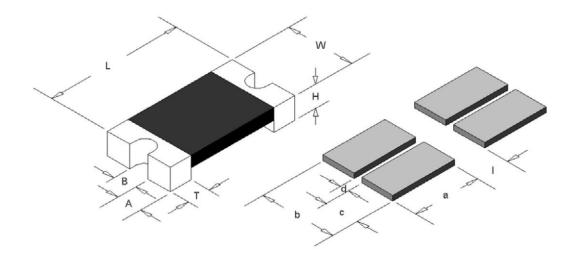
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#### Note

#### **DIMENSIONS**



MODEL	DIMENSIONS in inches (millimeters)						
WIODEL	L	w	н	Т	Α	В	
WSK120618	0.126 ± 0.010 (3.20 ±0.254)	0.063 ± 0.010 (1.60 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	$0.020 \pm 0.010$ (0.508 ± 0.254)	0.023 ± 0.010 (0.584 ± 0.254)	0.018 ± 0.010 (0.457 ± 0.254)	

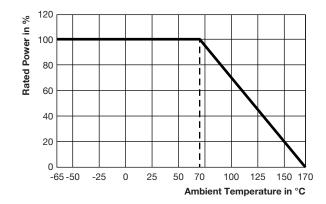
MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)						
MODEL	а	p	С	d	1		
WSK120618	0.040 (1.01)	0.070 (1.778)	0.030 (0.762)	0.01 (0.254)	0.070 (1.778)		

<sup>(1)</sup> 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.

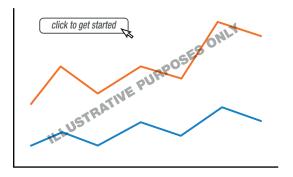
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#### **DERATING**



### **PULSE CAPABILITY**



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

PERFORMANCE					
TEST	T CONDITIONS OF TEST				
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	
WSK120618	8 mm/embossed plastic	178 mm/7"	4000	EA	

#### Notes

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



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