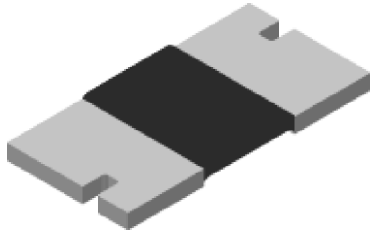


Power Metal Strip® Resistors, Low Value (down to 0.0005 Ω), Surface Mount, 4-Terminal


FEATURES

- 4-Terminal design allows for 1 % tolerance down to 0.0005 Ω and 0.5 % tolerance down to 0.001 Ω
- Ideal for all types of precision current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers
- Proprietary processing technique produces extremely low resistance values (down to 0.0005 Ω)
- All welded construction
- Solderable terminations
- Solid metal nickel-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
- AEC-Q200 qualified available ⁽¹⁾
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

 RoHS*
Available

 HALOGEN
FREE
Available

GREEN
(5-2008)
Available

Note

- ⁽¹⁾ Flame retardance test may not be applicable to some resistor technologies.

Note

- * This datasheet provides information about parts that are RoHS-compliant and/or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information/tables in this datasheet for details.

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	RESISTANCE VALUE RANGE Ω			WEIGHT (typical) g/1000 pieces
			Tol. ± 0.1 %	Tol. ± 0.5 %	Tol. ± 1.0 %	
WSK2512	2512	1.0	0.01 to 0.2	0.001 to 0.2	0.0005 to 0.2	63.6

Note

- Part marking: Value, tolerance; due to resistor size limitations some resistance values will be marked with only the resistance value.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 350 for 0.5 mΩ to 0.99 mΩ, ± 250 for 0.001 Ω to 0.0029 Ω, ± 75 for 0.003 Ω to 0.0049 Ω, ± 35 for 0.005 Ω to 0.2 Ω
Operating temperature range	°C	- 65 to + 170
Maximum working voltage	V	$(P \times R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

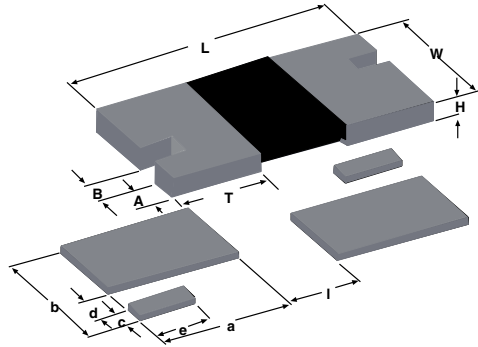
Global Part Numbering example: WSK25125L000FTA (preferred part numbering format)



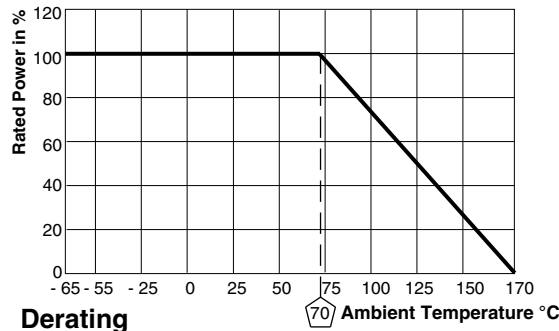
GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
WSK2512	L = mΩ* R = Decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω * Use "L" for resistance values < 0.01 Ω	B = ± 0.1 % D = ± 0.5 % F = ± 1.0 %	EA = Lead (Pb)-free, tape/reel EK = Lead (Pb)-free, bulk TA = Tin/lead, tape/reel (R86) BA = Tin/lead, bulk (B43)	(Dash number) (up to 2 digits) From 1 to 99 as applicable

Historical Part Numbering example: WSK2512 0.005 Ω 1 % R86 (will continue to be accepted)

WSK2512	0.005 Ω	1 %	R86
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE

DIMENSIONS in inches (millimeters)


MODEL	DIMENSIONS						
	RESISTANCE RANGE Ω	L	W	H	T	A	B
WSK2512	0.0005 to 0.00099	0.250 ± 0.010 (6.35 \pm 0.254)	0.125 ± 0.010 (3.18 \pm 0.254)	0.025 ± 0.010 (0.635 \pm 0.254)	0.105 ± 0.010 [2.66 \pm 0.254]	0.030 ± 0.010 (0.762 \pm 0.254)	0.020 ± 0.010 (0.508 \pm 0.254)
	0.001 to 0.0049				0.087 ± 0.010 (2.21 \pm 0.254)		
	0.005 to 0.2				0.047 ± 0.010 (1.19 \pm 0.254)		
MODEL	SOLDER PAD DIMENSIONS						
	RESISTANCE RANGE Ω	a	b	c	d	e	l
WSK2512	0.0005 to 0.0049	0.130 (3.30)	0.130 (3.30)	0.030 (0.76)	0.020 (0.51)	0.055 (1.40)	0.065 (1.65)
	0.005 to 0.2	0.090 (2.29)					0.145 (3.68)



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Short time overload	5 x rated power for 5 s	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Low temperature operation	- 65 °C for 24 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
High temperature exposure	1000 h at + 170 °C	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$
Bias humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Load life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$
Resistance to solder heat	+ 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$

PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSK2512	12 mm/embossed plastic	178 mm/7"	2000	EA

Note

- Embossed Carrier Tape per EIA-481.



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