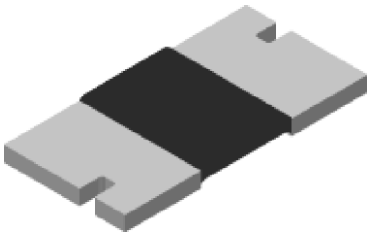
Power Metal Strip® Resistors, Low Value (down to 0.0005 Ω), Surface Mount, 4-Terminal



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
Pb-free 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 $P_{70\,°C}$ W	RESISTANCE VALUE RANGE Ω		WEIGHT (typical) g/1000 pieces
			Tol. ± 0.5 %	Tol. ± 1.0 %	
WSK2512	2512	1.0	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)

W	S	K	2	5	1	2	5	L	0	0	0	F	T	A		

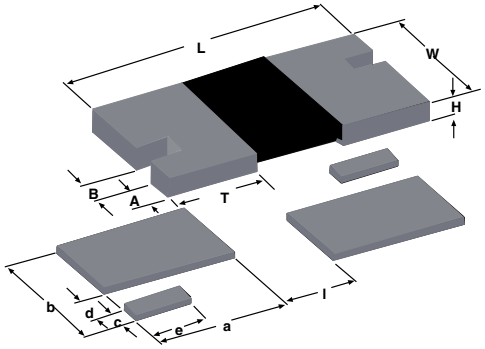
GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
WSK2512	**L** = mΩ* **R** = Decimal **5L000** = 0.005 Ω **R0100** = 0.01 Ω * Use "**L**" for resistance values < 0.01 Ω	**D** = ± 0.5 % **F** = ± 1.0 %	**EA** = Lead (Pb)-free, tape/reel **EK** = Lead (Pb)-free, bulk **TA** = Tin/lead, 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

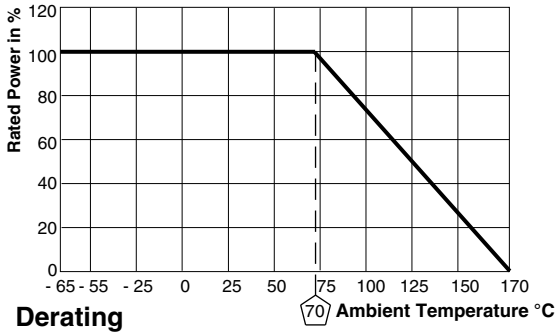
For technical questions, contact: ww2bresistors@vishay.com

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 ± 0.254)	0.125 ± 0.010 (3.18 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.105 ± 0.010 [2.66 ± 0.254]	0.030 ± 0.010 (0.762 ± 0.254)	0.020 ± 0.010 (0.508 ± 0.254)
	0.001 to 0.0049				0.087 ± 0.010 (2.21 ± 0.254)		
	0.005 to 0.2				0.047 ± 0.010 (1.19 ± 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)



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PERFORMANCE

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

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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