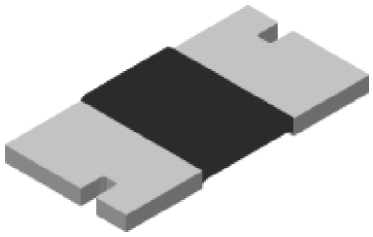
Power Metal Strip® Resistors, Low Value (down to 0.001 Ω), Surface Mount, 4-Terminal



FEATURES

- 4-Terminal design allows for 1 % tolerance down to 0.001 Ω and 0.5 % tolerance down to 0.003 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 0.001 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
- Compliant to RoHS directive 2002/95/EC

Pb-free Available

e3

RoHS* COMPLIANT

GREEN (5-2008)** Available

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{70\,°C}$ W	RESISTANCE RANGE Ω	
		± 0.5 %	± 1.0 %
WSK2512	1.0	0.003 to 0.025	0.001 to 0.025

Note

- Part Marking: DALE, Value, Tolerance; due to resistor size limitations some resistance values will be marked with only the resistance value

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSK2512
Temperature Coefficient	ppm/°C	0.001 Ω to 0.0029 Ω = ± 250 0.003 Ω to 0.0049 Ω = ± 75 0.005 Ω to 0.025 Ω = ± 35
Operating Temperature Range	°C	- 65 to + 170
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Weight/1000 pieces	g	63.6

GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBERING: 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: WSK2512 0.005 Ω 1 % R86 (WILL CONTINUE TO BE ACCEPTED)

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

* Pb containing terminations are not RoHS compliant, exemptions may apply

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

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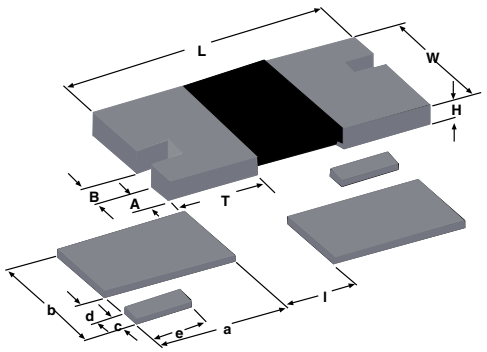
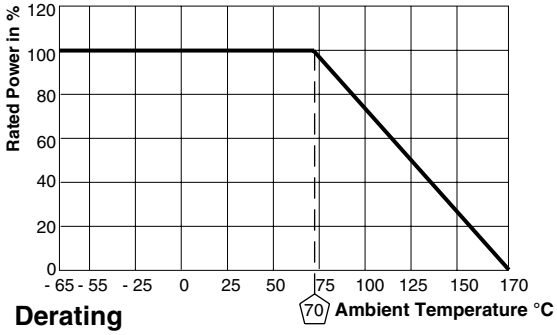
DIMENSIONS



MODEL	DIMENSIONS in inches [millimeters]						
	RESISTANCE RANGE Ω	L	W	H	T	A	B
WSK2512	0.001 to 0.0049	0.250 ± 0.010 [6.35 ± 0.254]	0.125 ± 0.010 [3.18 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.087 ± 0.010 [2.21 ± 0.254]	0.030 ± 0.010 [0.762 ± 0.254]	0.020 ± 0.010 [0.508 ± 0.254]
	0.005 to 0.025	0.250 ± 0.010 [6.35 ± 0.254]	0.125 ± 0.010 [3.18 ± 0.254]	0.025 ± 0.010 [0.635 ± 0.254]	0.047 ± 0.010 [1.19 ± 0.254]	0.030 ± 0.010 [0.762 ± 0.254]	0.020 ± 0.010 [0.508 ± 0.254]

MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]					
	a	b	c	d	e	l
WSK2512	0.125 [3.18]	0.130 [3.30]	0.030 [0.76]	0.020 [0.51]	0.055 [1.40]	0.065 [1.65]



Derating

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) Δ*R*
Short Time Overload	5 x power for 5 s	± (0.5 % + 0.0005 Ω) Δ*R*
Low Temperature Storage	- 65 °C for 24 h	± (0.5 % + 0.0005 Ω) Δ*R*
High Temperature Exposure	1000 h at + 170 °C	± (1.0 % + 0.0005 Ω) Δ*R*
Bias Humidity	+ 85 °C, 85 % RH, 10 % Bias, 1000 h	± (0.5 % + 0.0005 Ω) Δ*R*
Mechanical Shock	100 g's for 6 ms, 5 pulses	± (0.5 % + 0.0005 Ω) Δ*R*
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.0005 Ω) Δ*R*
Load Life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.0005 Ω) Δ*R*
Resistance to Solder Heat	+ 260 °C Solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.0005 Ω) Δ*R*
Moisture Resistance	MIL-STD-202 Method 106, 0 % power, 7a and 7b not required	± (0.5 % + 0.0005 Ω) Δ*R*

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	RIECES/REEL	CODE
WSK2512	12 mm/Embossed Plastic	178 mm/7"	2000	R86

Note
- Embossed carrier tape per EIA-481-1A

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