AUTOMOTIVE

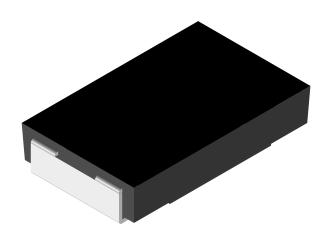
Available

COMPLIANT

GREEN (5-2008)



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



FEATURES

- Molded high temperature encapsulation
- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power instruments, power amplifiers
- Proprietary processing technique produces extremely low resistance values (down to 0.001.0
- All welded construction
- · Solid metal nickel-chrome or manganesecopper alloy resistive element with low TCR (< 20 ppm/°C)
- Solderable terminations
- Very low inductance 0.5 nH to 5 nH
- Excellent frequency response to 50 MHz
 Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified (1)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Notes

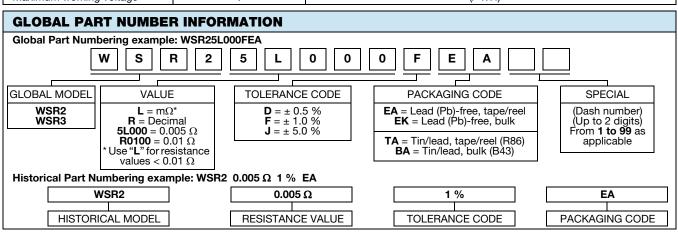
- Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply
- (1) Flame retardance test may not be applicable to some resistor technologies.

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	SIZE	POWER RATING P _{70 °C}	RESISTANCE VALUE RANGE Ω		WEIGHT (typical)
WIODEL		W	Tol. ± 0.5 %	Tol. ± 1.0 %	g/1000 pieces
WSR2	4527	2.0	0.005 to 1.0	0.001 to 1.0	440
WSR3	4527	3.0 ⁽²⁾	0.005 to 0.2	0.001 to 0.2	440

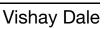
Notes

Part marking: DALE, model, value, tolerance, date code.
The WSR3 requires a minimum of 1050 sq. mil. circuit traces connecting to the recommended solder pad.

TECHNICAL SPECIFICATIONS				
PARAMETER UNIT WSR2 AND WSR3 RESISTOR CHARACTERISTIC				
Temperature coefficient	ppm/°C	\pm 75 for 0.010 Ω to 1.0 Ω ; \pm 110 for 0.005 Ω to 0.0099 Ω ; \pm 300 for 0.004 Ω to 0.0049 Ω ; \pm 450 for 0.003 Ω to 0.0039 Ω ; \pm 600 for 0.002 Ω to 0.0029 Ω ; \pm 750 for 0.001 Ω to 0.0019 Ω		
Element TCR	ppm/°C	< 20		
Dielectric withstanding voltage	V _{AC}	> 500		
Insulation resistance	Ω	> 10 ⁹		
Operating temperature range	°C	- 65 to + 275		
Maximum working voltage	V	$(P \times R)^{1/2}$		

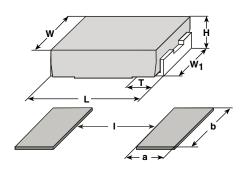


Revision: 17-Jan-13 Document Number: 30101





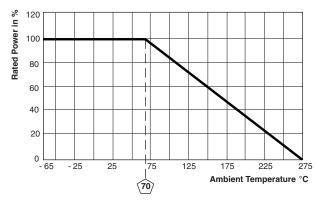
DIMENSIONS



MODEL	DIMENSIONS in inches (millimeters)				
WODEL	L	Н	Т	W	W ₁
	0.455 ± 0.032 (11.56 ± 0.813)				

MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)			
MODEL	a	b	I	
WSR2	0.155	0.230	0.205	
WSR3	(3.94)	(5.84)	(5.21)	

DERATING



PERFORMANCE					
TEST	CONDITIONS OF TEST	TEST LIMITS			
	CONDITIONS OF TEST	WSR2	WSR3		
Thermal shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Short time overload	WSR2: 5 x rated power for 5 s WSR3: 4 x rated power for 5 s	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$	\pm (2.0 % + 0.0005 Ω) ΔR		
Low temperature storage	- 65 °C for 24 h	\pm (0.5 % + 0.0005 Ω) ΔR	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
High temperature exposure	1000 h at + 275 °C	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$		
Bias humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	\pm (0.5 % + 0.0005 Ω) ΔR	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Mechanical shock	100 g's for 6 ms, 5 pulses	\pm (0.5 % + 0.0005 Ω) ΔR	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Load life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	\pm (1.0 % + 0.0005 Ω) ΔR	\pm (2.0 % + 0.0005 Ω) ΔR		
Resistance to solder heat	+ 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$		

PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSR2 and WSR3	24 mm/embossed plastic	330 mm/13"	1500	EA

Note

• Embossed Carrier Tape per EIA-481.



Legal Disclaimer Notice

Vishay

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Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

Revision: 02-Oct-12 Document Number: 91000



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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001:
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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