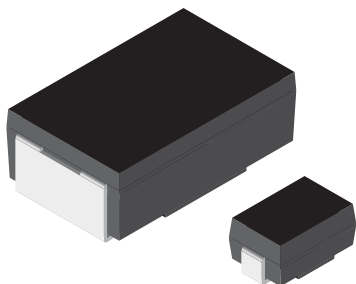


Wirewound Resistors, Precision Power, Surface Mount



FEATURES

- All welded construction
- Molded encapsulation
- Wraparound terminations
- Excellent stability at different environmental conditions
- High power ratings (up to 3 W)
- Superior surge capability
- Available in non-inductive styles with Ayrton-Perry winding (WSN in lieu of WSC, maximum resistance is one-half WSC range)
- AEC-Q200 qualified available ⁽¹⁾
- Compliant to RoHS Directive 2002/95/EC

Note

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

AUTOMOTIVE
GRADE
Available



Available



RoHS*
COMPLIANT

GREEN
[5-2008]**
Available

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	WEIGHT (typical) g/1000 pieces	ENCAPSULATION
WSC01/2	WSC-1/2	2012	0.5	0.1 to 4.99	0.5, 1, 5	90	Epoxy
WSC0001	WSC-1	2515	1	0.1 to 2.77K	0.5, 1, 5	165	Thermoplastic ⁽³⁾
WSC2515	WSC2515	2515	1	0.1 to 2.5K	0.1, 0.25, 0.5, 1, 5 ⁽²⁾	165	Thermoplastic
WSC0002	WSC-2	4527	2	0.1 to 4.92K	0.5, 1, 5	760	Thermoplastic ⁽³⁾
WSC4527	WSC4527	4527	2	0.1 to 4.92K	0.5, 1, 5	760	Thermoplastic
WSC6927	WSC6927	6927	3	0.1 to 8K	0.5, 1, 5	1675	Thermoplastic

Notes

• Part marking: 1/2 W - DALE, value; 1 W - model, value, tolerance, date code; 2 W and 3 W - DALE, model, value, tolerance, date code.

⁽²⁾ 0.1 % and 0.25 % is available on the WSC2515 for 0.499 Ω to 2.5 k Ω range.

⁽³⁾ As of 1/1/2010, the WSC0001 and WSC0002 are molded with thermoplastic in lieu of epoxy. Reference PCN-DR-002-2009 and PCN-DR-003-2009

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSC01/2	WSC0001	WSC2515	WSC0002	WSC4527/WSC6927
Temperature Coefficient	ppm/°C	± 50 = 1.0 Ω to 4.99 Ω; ± 90 = 0.1 Ω to 0.99 Ω	± 20 = 26.51 Ω and above; ± 50 = 1.0 Ω to 26.5 Ω; ± 90 = 0.1 Ω to 0.99 Ω	± 20 = 26.51 Ω and above; ± 50 = 1.0 Ω to 26.5 Ω; ± 90 = 0.31 Ω to 0.99 Ω; ± 150 = 0.1 Ω to 0.3 Ω	± 20 = 10.0 Ω and above; ± 50 = 1.0 Ω to 9.9 Ω; ± 90 = 0.1 Ω to 0.99 Ω	± 20 = 10 Ω and above; ± 50 = 1.0 Ω to 9.9 Ω; ± 90 = 0.31 Ω to 0.99 Ω; ± 150 = 0.1 Ω to 0.3 Ω
Dielectric Withstanding Voltage	V _{AC}	> 500				
Insulation Resistance	Ω	> 10 ⁹				
Operating Temperature Range	°C	- 65 to + 175	- 65 to + 275			
Maximum Working Voltage	V	(P x R) ^{1/2}				

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSC2515R7000FEA

W	S	C	2	5	1	5	R	7	0	0	0	F	E	A		
GLOBAL MODEL		SIZE			VALUE		TOLERANCE			PACKAGING				SPECIAL		
WSC WSN		01/2 0001 2515 0002 4527 6927			R = Decimal K = Thousand R7000 = 0.70 Ω 1K500 = 1.5 kΩ		B = ± 0.1 % ⁽⁴⁾ C = ± 0.25 % ⁽⁴⁾ D = ± 0.5 % F = ± 1.0 % G = ± 2.0 % H = ± 3.0 % J = ± 5.0 % K = ± 10 %			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: WSC-1 0.7 Ω 1 % R86

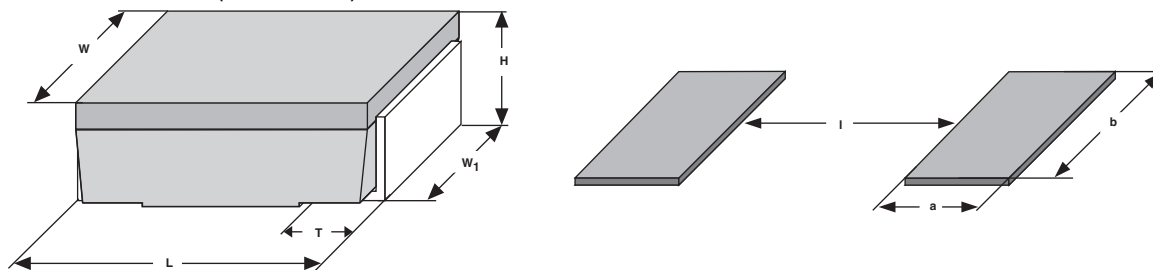
WSC-1	0.7 Ω	1 %	R86
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	PACKAGING

Note

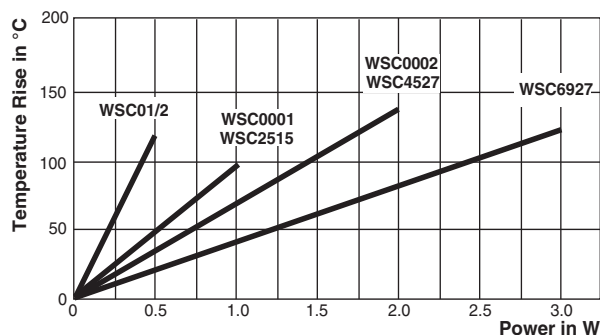
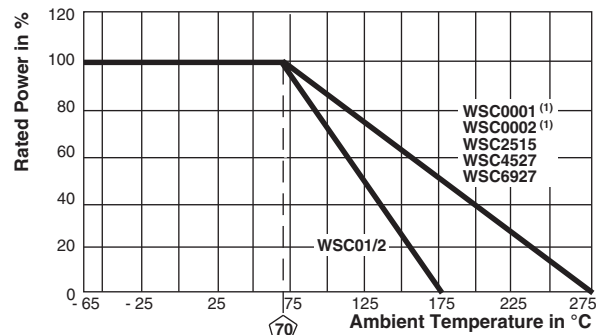
⁽⁴⁾ WSC2515 only

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

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

DIMENSIONS in inches (millimeters)

GLOBAL MODEL	DIMENSIONS					SOLDER PAD DIMENSIONS		
	L	H	T	W	W ₁	A	B	L
WSC01/2	0.200 ± 0.020 (5.08 ± 0.508)	0.096 ± 0.015 (2.44 ± 0.381)	0.040 ± 0.010 (1.02 ± 0.254)	0.125 ± 0.005 (3.18 ± 0.127)	0.050 ± 0.010 (1.27 ± 0.254)	0.085 (2.16)	0.070 (1.78)	0.080 (2.03)
WSC0001	0.250 ± 0.020 (6.35 ± 0.508)	0.110 ± 0.015 (2.79 ± 0.381)	0.045 ± 0.010 (1.14 ± 0.254)	0.150 ± 0.005 (3.81 ± 0.127)	0.098 ± 0.005 (2.49 ± 0.127)	0.090 (2.29)	0.115 (2.92)	0.115 (2.92)
WSC2515	0.250 ± 0.020 (6.35 ± 0.508)	0.110 ± 0.015 (2.79 ± 0.381)	0.045 ± 0.010 (1.14 ± 0.254)	0.150 ± 0.005 (3.81 ± 0.127)	0.098 ± 0.005 (2.49 ± 0.127)	0.090 (2.29)	0.115 (2.92)	0.120 (3.05)
WSC0002	0.455 ± 0.020 (11.56 ± 0.508)	0.167 ± 0.010 (4.24 ± 0.254)	0.100 ± 0.010 (2.54 ± 0.254)	0.275 ± 0.005 (6.98 ± 0.127)	0.215 ± 0.005 (5.46 ± 0.127)	0.155 (3.94)	0.230 (5.84)	0.205 (5.21)
WSC4527	0.455 ± 0.020 (11.56 ± 0.508)	0.167 ± 0.010 (4.24 ± 0.254)	0.100 ± 0.010 (2.54 ± 0.254)	0.275 ± 0.005 (6.98 ± 0.127)	0.215 ± 0.005 (5.46 ± 0.127)	0.155 (3.94)	0.230 (5.84)	0.205 (5.21)
WSC6927	0.690 ± 0.032 (17.53 ± 0.813)	0.280 ± 0.015 (7.11 ± 0.381)	0.100 ± 0.010 (2.54 ± 0.254)	0.275 ± 0.005 (6.98 ± 0.127)	0.215 ± 0.015 (5.46 ± 0.381)	0.155 (3.94)	0.235 (5.97)	0.470 (11.94)

TEMPERATURE RISE**DERATING****Note**

(1) As of 1/1/2010, WSC0001 and WSC0002 will be molded with thermoplastic and have the higher 275 °C temperature derating.

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	- 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme	± (0.5 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 s	± (0.2 % + 0.05 Ω) ΔR
Low Temperature Storage	- 65 °C for 24 h	± (0.2 % + 0.05 Ω) ΔR
High Temperature Exposure	1000 h at + 275 °C (+ 175 °C for WSC01/2)	± (0.5 % + 0.05 Ω) ΔR
Bias Humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	± (0.2 % + 0.05 Ω) ΔR
Mechanical Shock	100 g's for 11 ms, 5 pulses	± (0.1 % + 0.05 Ω) ΔR
Vibration	Frequency varied 10 Hz to 500 Hz in 1 min, 3 directions, 9 h	± (0.1 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	+ 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.05 Ω) ΔR

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSC01/2	12 mm/embossed plastic	330 mm/13"	2000	EA/TA
WSC0001/WSC2515	16 mm/embossed plastic	330 mm/13"	2000	EA/TA
WSC0002/WSC4527	24 mm/embossed plastic	330 mm/13"	1200	EA/TA
WSC6927	32 mm/embossed plastic	330 mm/13"	725	EA/TA

Note

- Embossed Carrier Tape per EIA-481.



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.