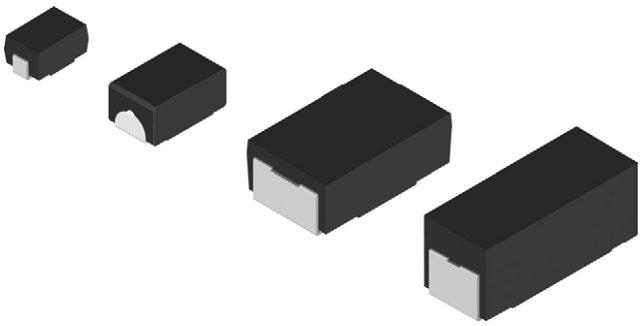
Wirewound Resistors, Precision Power, Surface Mount



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 (1)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb-free Available

e3

RoHS* Available

HALOGEN FREE Available

GREEN (5-2008) Available

LINKS TO ADDITIONAL RESOURCES

3D Models | Design Tools | Calculators

Notes

- 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

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	SIZE	POWER RATING $P_{70\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	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 (1)	WSC-1	2515	1	0.1 to 2.77K	0.5, 1, 5	165	Thermoplastic (2)
WSC2515	WSC2515	2515	1	0.1 to 2.5K	0.5, 1, 5	165	Thermoplastic
WSC0002	WSC-2	4527	2	0.1 to 4.92K	0.5, 1, 5	760	Thermoplastic (2)
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
- Qualified to AEC-Q200 rev. D

(1) As of February 19, 2016, the WSC0001 was obsoleted by PCN-DR-013-2015; the WSC2515 is a drop-in replacement. You may contact your sales representative or submit an inquiry via ww2bresistors@vishay.com for supporting information

(2) 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	WSC2515	WSC0002	WSC4527, WSC6927
Temperature coefficient measured from -55 °C to +150 °C	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 = 0.31 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	$(P \times R)^{1/2}$			

For technical questions, contact: ww2bresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: WSC2515R7000FEA (visit www.vishay.net Vishay Dale parts numbering manual for all options)

W	S	C	2	5	1	5	R	7	0	0	0	F	E	A		

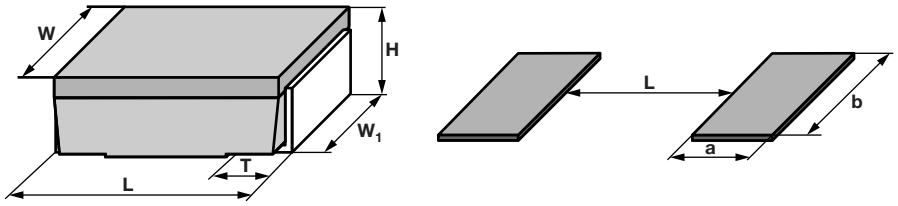
GLOBAL MODEL	SIZE	VALUE [1]	TOLERANCE	PACKAGING	SPECIAL
WSC **WSN**	**01/2** **2515** **0002** **4527** **6927**	**R** = decimal **K** = thousand **R7000** = 0.70 Ω **1K500** = 1.5 kΩ	**D** = ± 0.5 % **F** = ± 1.0 % **G** = ± 2.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10 %	**EA** = lead (Pb)-free, 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

Notes

[1] WSC / WSN marking (www.vishay.com/doc?30327)

- Packaging code: EB (lead (Pb)-free) and TB (tin / lead) are non-standard packaging codes designating 1000 piece reels. These non-standard packaging codes are identical to our standard EA (lead (Pb)-free) and TA (tin / lead), except that they have a package quantity of 1000 pieces

DIMENSIONS in inches (millimeters)

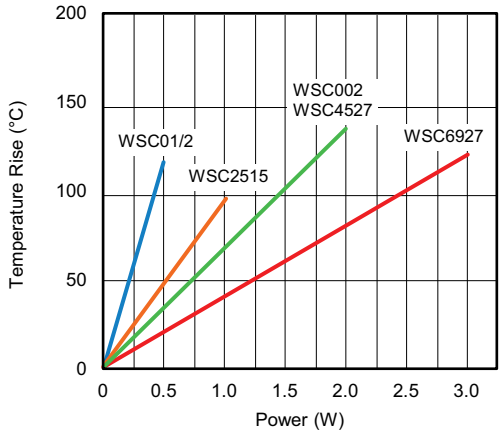


GLOBAL MODEL	DIMENSIONS					SOLDER PAD DIMENSIONS		
	L	H	T	W	W_1	a	b	L
WSC01/2	0.200 ± 0.020 (5.08 ± 0.508)	0.096 ± 0.015 (2.44 ± 0.381)	0.040 ± 0.010 (1.02 ± 0.254)	0.125 ± 0.005 (3.18 ± 0.127)	0.050 ± 0.010 (1.27 ± 0.254)	0.085 (2.16)	0.070 (1.78)	0.080 (2.03)
WSC2515	0.250 ± 0.020 (6.35 ± 0.508)	0.110 ± 0.015 (2.79 ± 0.381)	0.045 ± 0.010 (1.14 ± 0.254)	0.150 ± 0.005 (3.81 ± 0.127)	0.098 ± 0.010 (2.49 ± 0.254)	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)

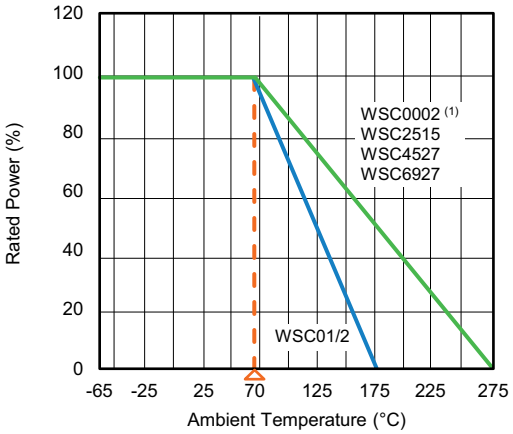
Notes

- 3D models available: www.vishay.com/doc?30328
- Surface mount solder profile recommendations: www.vishay.com/doc?31052
- Refer to WSC, WSN conversion guide for detailed construction drawings: www.vishay.com/doc?49616
- For WSC2515 0.5 % tolerance parts, W_1 terminal dimension will be 0.090" ± 0.015"

TEMPERATURE RISE



DERATING



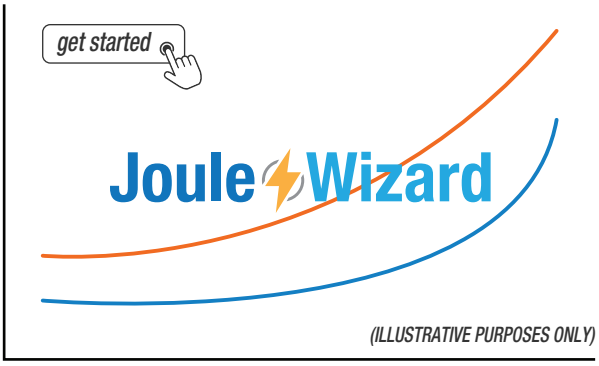
Note

[1] As of 1/1/2010, WSC0002 will be molded with thermoplastic and have the higher 275 °C temperature derating

For technical questions, contact: ww2bresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

PULSE CAPABILITY



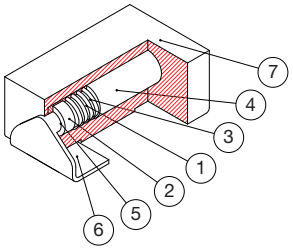
www.vishay.com/en/resistors/joulewizard/

Note

- Pulse capability increases based on the amount of wire for the resistance value and construction. The WSC0002 has greater pulse capability than WSC4527 due to differences in internal construction. The non-inductive WSN has greater pulse capability for the same size WSC because the second layer of wire increases the wire mass available to withstand pulse energy without exceeding temperature limits. Follow pulse graphic link for more information regarding capability

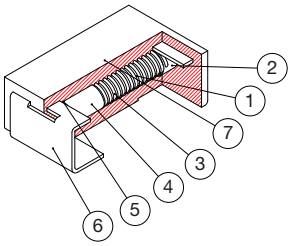
WELDED CONSTRUCTION

WSC2515, WSN2515



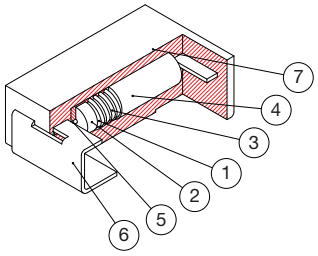
1. Ceramic core
2. Resistor end cap
3. Resistance wire
4. Subassembly coating
5. Connection - cap to terminal
6. Plated terminal
7. LCP mold with laser print

WSC0002, WSN0002



1. Ceramic core
2. Resistor end cap
3. Resistance wire
4. Subassembly coating
5. Connection - cap to leadframe terminal
6. Plated leadframe terminal
7. LCP mold with laser print

WSC4527, WSN4527, WSC6927, WSN6927

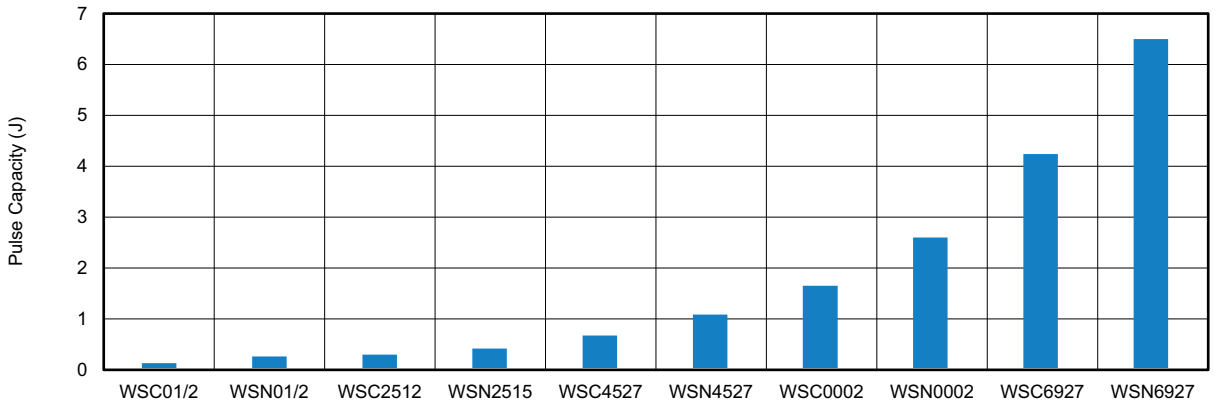


1. Ceramic core
2. Resistor end cap
3. Resistance wire
4. Subassembly coating
5. Connection - cap to axial lead, axial lead to leadframe terminal
6. Plated terminal
7. LCP mold with laser print

For technical questions, contact: ww2bresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

COMPARISON OF PULSE CAPACITY (by series, 2 Ω at 70 °C)



Energy capacity increases with size with more wire mass to achieve the equivalent resistance value.
WSN has a second layer of wire that provides higher energy capacity than WSC due to increased wire mass.
Lower resistance values have higher pulse capability due to larger diameter wire.

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
Short time overload	5 x rated power for 5 s www.vishay.com/en/resistors/SMD-wirewound-pulse-capability-calculator/	± 0.2 % + 0.05 Ω
Low temperature storage	-65 °C for 24 h	± 0.2 % + 0.05 Ω
High temperature exposure	2000 h at +275 °C (WSC01/2 and WSN01/2 at 175 °C)	± 2.0 % + 0.05 Ω
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.2 % + 0.05 Ω
Mechanical shock	100 *g*'s for 6 ms, 5 pulses	± 0.1 % + 0.05 Ω
Vibration	Frequency varied 10 Hz to 500 Hz in 1 min, 3 directions, 9 h	± 0.1 % + 0.05 Ω
Load life	1000 h at rated power, +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % + 0.05 Ω
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 0.5 % + 0.05 Ω

PACKAGING

MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSC01/2	12 mm / embossed plastic	330 mm / 13"	2000	EA / TA
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

Notes
- Embossed carrier tape per EIA-481
- Additional packaging details at www.vishay.com/doc?20051

LINKS TO RELATED DOCUMENTS

SELECTOR GUIDE	
Overview of Automotive Grade Products	www.vishay.com/doc?49924
CONVERSION GUIDE	
WSC/WSN Wirewound Surface-Mount Resistors	www.vishay.com/doc?49616
TECHNICAL NOTES	
SMD Current Sense: AEC-Q200 vs. Vishay Qualification	www.vishay.com/doc?30416
MIL-PRF vs. AEC-Q200: Do You Know What You Are Getting?	www.vishay.com/doc?11000
WHITE PAPER	
Thermal Management for Surface-Mount Devices	www.vishay.com/doc?30380
Temperature Coefficient of Resistance for Current Sensing	www.vishay.com/doc?30405

For technical questions, contact: ww2bresistors@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. 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.

© 2026 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000