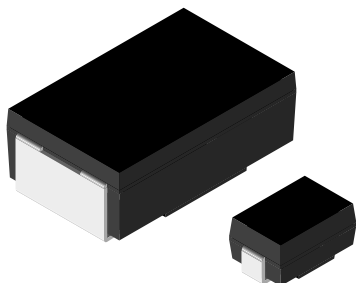


Wirewound Resistors, Precision Power, Surface Mount



DESIGN TOOLS (click logo to get started)



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.
- Follow link to Overview of Automotive Grade Products for more details: www.vishay.com/doc?49924.
- (1) Flame retardance test may not be applicable to some resistor technologies.

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



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 (2)	WSC-1	2515	1	0.1 to 2.77K	0.5, 1, 5	165	Thermoplastic (1)
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 (1)
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.
- (1) 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
- (2) 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.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WSC01/2	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 = 0.31 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}			

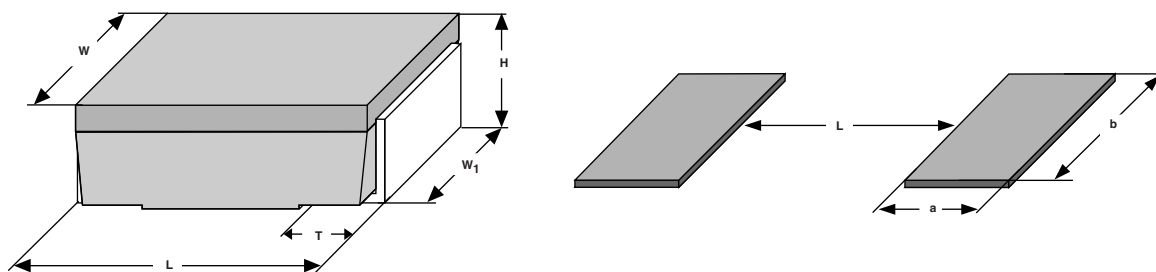
GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSC2515R7000FEA (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		TOLERANCE		PACKAGING		SPECIAL						
WSC WSN		01/2 2515 0002 4527 6927		R = decimal K = thousand R7000 = 0.70 Ω 1K500 = 1.5 k Ω		D = $\pm 0.5 \%$ F = $\pm 1.0 \%$ G = $\pm 2.0 \%$ H = $\pm 3.0 \%$ J = $\pm 5.0 \%$ K = $\pm 10 \%$		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						

Note

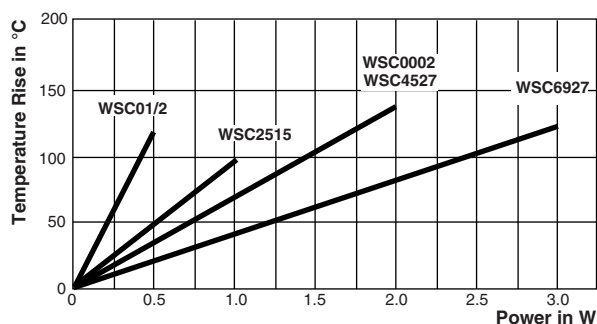
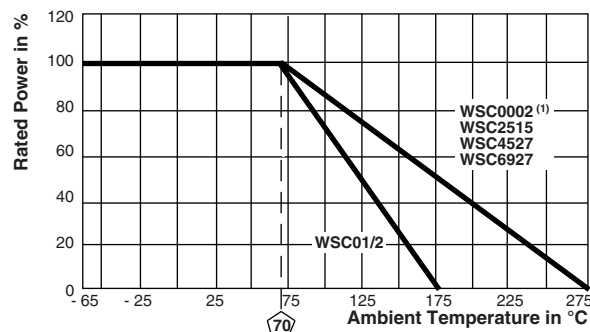
- Packaging code: EB (lead (Pb)-free) and TB (tin / lead) are non-standard packaging codes designating 1000 piece reels. These non-standard packaging codes are identical to our standard EA (lead (Pb)-free) and TA (tin / lead), except that they have a package quantity of 1000 pieces.

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 ± 0.005 (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)

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.

TEMPERATURE RISE

DERATING

Note

- (1) As of 1/1/2010, 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
Short time overload	5 x rated power for 5 s	± 0.2 % + 0.05 Ω
Low temperature storage	-65 °C for 24 h	± 0.2 % + 0.05 Ω
High temperature exposure	1000 h at + 275 °C (+175 °C for WSC01/2)	± 0.5 % + 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.



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<u>WSC0002150R0FTA</u>	<u>WSC0002154R0FTA</u>	<u>WSC000227R40FTA</u>	<u>WSC000225R50FTA</u>	<u>WSC01\2R4000FTB</u>
<u>WSC01\21R210FTB</u>	<u>WSC45272K000FEB</u>	<u>WSC0001R2500FTB</u>	<u>WSC2515243R0FTA</u>	<u>WSC00021K500FTA</u>
<u>WSC00022R200FTA</u>	<u>WSC00022R000FTA</u>	<u>WSC00022R700FTA</u>	<u>WSC00022R800FTA</u>	<u>WSC00022R500FTA</u>
<u>WSC00022R430FTA</u>	<u>WSC00022R490FTA</u>	<u>WSC00022R740FTA</u>	<u>WSC0002200R0FTA</u>	<u>WSC000122R00FTB</u>
<u>WSC000115R00FTB</u>	<u>WSC4527400R0FEB</u>	<u>WSC000120R00FTB</u>	<u>WSC000147R00FBA</u>	<u>WSC000113R70FBA</u>
<u>WSC452720R00DBA</u>	<u>WSC45271R000FEB</u>	<u>WSC000249R90FBA</u>	<u>WSC01\21R000FTB</u>	<u>WSC00024K530FTA</u>
<u>WSC25151R000FEB</u>	<u>WSC45275R000FEB</u>	<u>WSC000225R00FTA</u>	<u>WSC000222R00FTA</u>	<u>WSC000224R00FTA</u>
<u>WSC0001180R0FTB</u>	<u>WSC000220R00FTA</u>	<u>WSC00015R110FTB</u>	<u>WSC01\22R700FTB</u>	<u>WSC01\22R300FTB</u>
<u>WSC01\2R1500FTB</u>	<u>WSC00021K000FTA</u>	<u>WSC00022K000FTA</u>	<u>WSC000213R70FTA</u>	<u>WSC00021K740FTA</u>
<u>WSC00023K740FTA</u>	<u>WSC000241R00JTA</u>	<u>WSC000211R00JTA</u>	<u>WSC00021R210FTA</u>	<u>WSC0002R5000FTA</u>
<u>WSC45271K000FEB</u>	<u>WSC000216R20FTA</u>	<u>WSC0002820R0FTA</u>	<u>WSC00028R200FTA</u>	<u>WSC0002866R0FTA</u>
<u>WSC00011K000FTB</u>	<u>WSC00026R800FTA</u>	<u>WSC00026R900FTA</u>	<u>WSC00026R000FTA</u>	<u>WSC0002604R0FTA</u>
<u>WSC0002649R0FTA</u>	<u>WSC0002665R0FTA</u>	<u>WSC000222R10FTA</u>	<u>WSC000210R40FTA</u>	<u>WSC00021K210FTA</u>
<u>WSC00022K340FTA</u>	<u>WSC2515R1000FEB</u>	<u>WSC251510R00FEB</u>	<u>WSC69271K000FEA</u>	<u>WSC00023R010FTA</u>
<u>WSC000240R20FTA</u>	<u>WSC00011K500FTB</u>	<u>WSC000290R90FTA</u>	<u>WSN00014R700FBA</u>	<u>WSC000239R00FTA</u>
<u>WSC000230R00FTA</u>	<u>WSC000275R00FTA</u>	<u>WSC00024R120FTA</u>	<u>WSC01\2R5000FTB</u>	<u>WSC01\2R1000FTB</u>
<u>WSC01\2R2000FTB</u>	<u>WSC01\2R3000FTB</u>	<u>WSC45272R000FEB</u>	<u>WSC01\23R900FTB</u>	<u>WSC000239R20FTA</u>
<u>WSC00024K750FTA</u>	<u>WSC01\2R3010FTB</u>	<u>WSC01\21R000FEB</u>	<u>WSC452720R00FEB</u>	<u>WSC25151K000FEB</u>
<u>WSC0002820R0JTA</u>	<u>WSC0002R1500FTA</u>	<u>WSC0001R2490FEB</u>	<u>WSC25155R110FEB</u>	<u>WSC251549R90FEB</u>