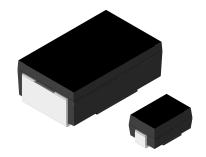
Vishay Dale



# 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 Aryton-Perry winding (WSN in lieu of WSC, maximum resistance is one-half WSC range)
- Compliant to RoHS directive 2002/95/EC







STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	HISTORICAL MODEL	SIZE INCH	POWER RATING P <sub>70 °C</sub>	TOLERANCE ± %	RESISTANCE RANGE $\Omega$	ENCAPSULATION	
WSC01/2	WSC-1/2	2012	0.5	0.5, 1, 5	0.1 to 4.99	Ероху	
WSC0001	WSC-1	2515	1.0	0.5, 1, 5	0.1 to 2.77K	Thermoplastic (2)	
WSC2515	WSC2515	2515	1.0	0.5, 1, 5 <sup>(1)</sup>	0.1 to 2.5K	Thermoplastic	
WSC0002	WSC-2	4527	2.0	0.5, 1, 5	0.1 to 4.92K	Thermoplastic (2)	
WSC4527	WSC4527	4527	2.0	0.5, 1, 5	0.1 to 4.92K	Thermoplastic	
WSC6927	WSC6927	6927	3.0	0.5, 1, 5	0.1 to 8K	Thermoplastic	

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) 0.1 % and 0.25 % is available on the WSC2515 for 0.499 Ω to 2.5 kΩ range
 (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	WSC0001	WSC2515	WSC0002	WSC4527/WSC6927		
Temperature Coefficient	ppm/°C	0.1 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 4.99 $\Omega = \pm 50$	0.1 $\Omega$ to 0.99 $\Omega$ = ± 90 1.0 $\Omega$ to 26.5 $\Omega$ = ± 50 26.51 $\Omega$ and above = ± 20	0.1 $\Omega$ to 0.3 $\Omega$ = ± 150 0.31 $\Omega$ to 0.99 $\Omega$ = ± 90 1.0 $\Omega$ to 26.5 $\Omega$ = ± 50 26.51 $\Omega$ and above = ± 20	0.1 $\Omega$ to 0.99 $\Omega$ = ± 90 1.0 $\Omega$ to 9.9 $\Omega$ = ± 50 10.0 $\Omega$ and above = ± 20	0.1 $\Omega$ to 0.3 $\Omega$ = ± 150 0.31 $\Omega$ to 0.99 $\Omega$ = ± 90 1.0 $\Omega$ to 9.9 $\Omega$ = ± 50 10 $\Omega$ and above = ± 20		
Dielectric Withstanding Voltage	V <sub>AC</sub>	> 500	> 500	> 500	> 500	> 500		
Insulation Resistance	Ω	> 10 <sup>9</sup>	> 10 <sup>9</sup>	> 10 <sup>9</sup>	> 10 <sup>9</sup>	> 10 <sup>9</sup>		
Operating Temperature Range	°C	- 65 to + 175	- 65 to + 275	- 65 to + 275	- 65 to + 275	- 65 to + 275		
Maximum Working Voltage	V	(P x R) <sup>1/2</sup>	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$	(P x R) <sup>1/2</sup>	(P x R) <sup>1/2</sup>		
Weight/1000 pieces (typical)	g	90	165	165	760	760/1675		

GLOBAL PART NUMBER INFORMATION								
Global Part Numbering example: WSC2515R7000FEA (preferred part numbering format)								
WS	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	$\mathbf{R} = \text{Decimal}$ $\mathbf{K} = \text{Thousand}$ $\mathbf{R7000} = 0.70 \Omega$ $\mathbf{1K500} = 1.5 \text{ k}\Omega$	$B = \pm 0.1 \% (3)$ $C = \pm 0.25 \% (3)$ $D = \pm 0.5 \%$ $F = \pm 1.0 \%$ $G = \pm 2.0 \%$ $H = \pm 3.0 \%$ $J = \pm 5.0 \%$ $K = \pm 10 \%$	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 <b>1 to 99</b> as applicable			
Historical Part Number example: WSC-1 0.7 $\Omega$ 1 % R86 (will continue to be accepted, but will be supplied as WSC0001R7000FTA								
WSC-1		0.7 Ω		1 %	R86			
HISTORICAL MODEL		RESISTANCE VALUE	TOL	ERANCE PA	ACKAGING			

(3) WSC2515 only

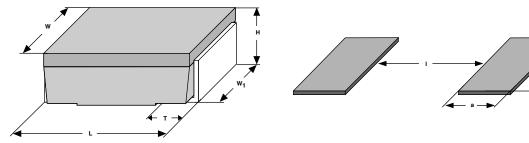
<sup>\*</sup> Pb containing terminations are not RoHS compliant, exemptions may apply



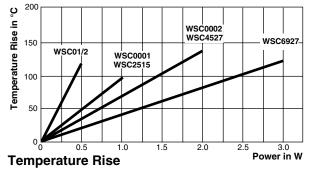
## Wirewound Resistors, Precision Power, Surface Mount

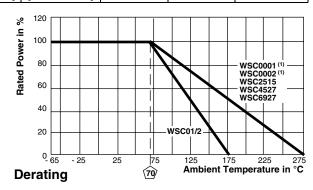
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### **DIMENSIONS** in inches (millimeters)



MODEL	DIMENSIONS					SOLDER PAD DIMENSIONS		
	L	Н	Т	W	$W_1$	а	b	I
WSC01/2	$0.200 \pm 0.020$ [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	$0.250 \pm 0.020$ [6.35 ± 0.508]	$0.110 \pm 0.015$ [2.79 ± 0.381]	$0.045 \pm 0.010$ [1.14 ± 0.254]	$0.150 \pm 0.005$ [3.81 ± 0.127]	$0.098 \pm 0.005$ [2.49 ± 0.127]	0.090 [2.29]	0.115 [2.92]	0.120 [3.05]
WSC2515	$0.250 \pm 0.020$ [6.35 ± 0.508]	$0.110 \pm 0.015$ [2.79 $\pm 0.381$ ]	$0.045 \pm 0.010$ [1.14 ± 0.254]	$0.150 \pm 0.005$ [3.81 ± 0.127]	$0.098 \pm 0.005$ [2.49 ± 0.127]	0.090 [2.29]	0.115 [2.92]	0.120 [3.05]
WSC0002	$0.445 \pm 0.032$ [11.30 ± 0.813]	$0.162 \pm 0.015$ [4.11 $\pm 0.381$ ]	$0.100 \pm 0.010$ [2.54 ± 0.254]	$0.275 \pm 0.005$ $[6.98 \pm 0.127]$	$0.215 \pm 0.005$ [5.46 ± 0.127]	0.155 [3.94]	0.230 [5.84]	0.205 [5.21]
WSC4527	$0.455 \pm 0.020$ [11.56 ± 0.508]	$0.167 \pm 0.010$ [4.24 ± 0.254]	$0.100 \pm 0.010$ [2.54 ± 0.254]	$0.275 \pm 0.005$ [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	$0.690 \pm 0.032$ [17.53 ± 0.813]	0.280 ± 0.015 [7.11 ± 0.381]	$0.100 \pm 0.010$ [2.54 ± 0.254]	$0.275 \pm 0.005$ [6.98 ± 0.127]	0.215 ± 0.015 [5.46 ± 0.381]	0.155 [3.94]	0.235 [5.97]	0.470 [11.94]





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		RE	EL				
MODEL	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			

• Embossed Carrier Tape per EIA-481-1, 2, 3



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