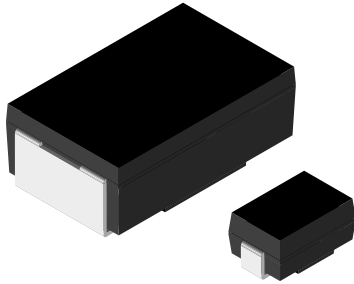


## Wirewound Resistors, Precision Power, Surface Mount



### 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)
- Compliant to RoHS directive 2002/95/EC



**RoHS\***  
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS						
GLOBAL MODEL	HISTORICAL MODEL	SIZE INCH	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE RANGE $\Omega$	ENCAPSULATION
WSC01/2	WSC-1/2	2012	0.5	0.5, 1, 5	0.1 to 4.99	Epoxy
WSC0001	WSC-1	2515	1.0	0.5, 1, 5	0.1 to 2.77K	Epoxy <sup>(2)</sup>
WSC2515	WSC2515	2515	1.0	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	Epoxy <sup>(2)</sup>
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

**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
- <sup>(1)</sup> 0.1 % and 0.25 % is available on the WSC2515 for 0.499  $\Omega$  to 2.5 k $\Omega$  range
- <sup>(2)</sup> As of 1/1/2010, this will become a thermoplastic. Reference PCN-DR-002-2009 and PCN-DR-003-2009.

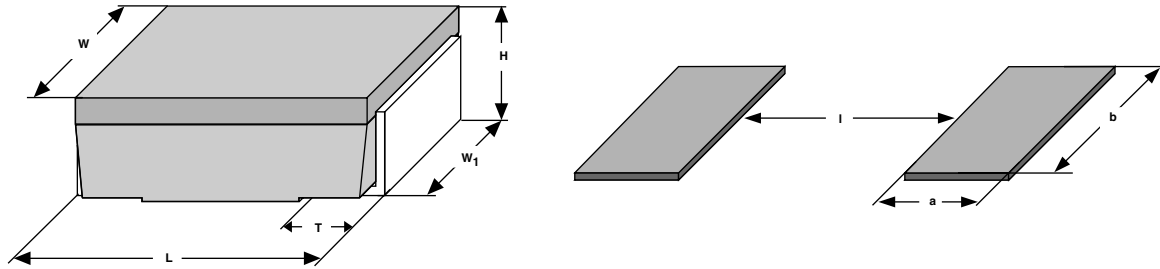
TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	WSC01/2	WSC0001	WSC2515	WSC0002	WSC4527/WSC6927
Temperature Coefficient	ppm/ $^\circ\text{C}$	0.1 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 4.99 $\Omega = \pm 50$	0.1 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 26.5 $\Omega = \pm 50$ 26.51 $\Omega$ and above = $\pm 20$	0.1 $\Omega$ to 0.3 $\Omega = \pm 150$ 0.31 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 26.5 $\Omega = \pm 50$ 26.51 $\Omega$ and above = $\pm 20$	0.1 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 9.9 $\Omega = \pm 50$ 10.0 $\Omega$ and above = $\pm 20$	0.1 $\Omega$ to 0.3 $\Omega = \pm 150$ 0.31 $\Omega$ to 0.99 $\Omega = \pm 90$ 1.0 $\Omega$ to 9.9 $\Omega = \pm 50$ 10 $\Omega$ and above = $\pm 20$
Dielectric Withstanding Voltage	$V_{AC}$	> 500	> 500	> 500	> 500	> 500
Insulation Resistance	$\Omega$	> $10^9$	> $10^9$	> $10^9$	> $10^9$	> $10^9$
Operating Temperature Range	$^\circ\text{C}$	- 65 to + 175	- 65 to + 175	- 65 to + 275	- 65 to + 175	- 65 to + 275
Maximum Working Voltage	V	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$
Weight/1000 pieces (typical)	g	90	165	165	760	760/1675

GLOBAL PART NUMBER INFORMATION						
Global Part Numbering example: WSC2515R7000FEA (preferred part numbering format)						
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 $\Omega$ 1K500 = 1.5 k $\Omega$	B = $\pm 0.1\%$ <sup>(3)</sup> C = $\pm 0.25\%$ <sup>(3)</sup> 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	
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 $\Omega$	1%	R86			
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	PACKAGING			

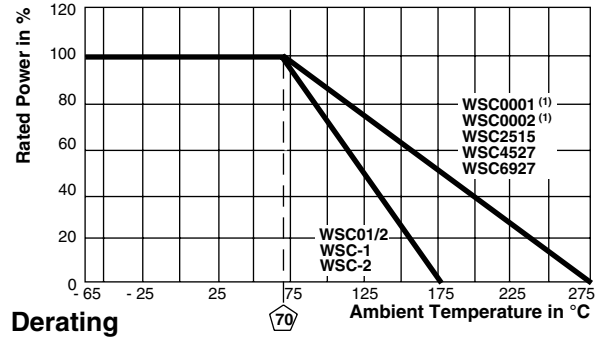
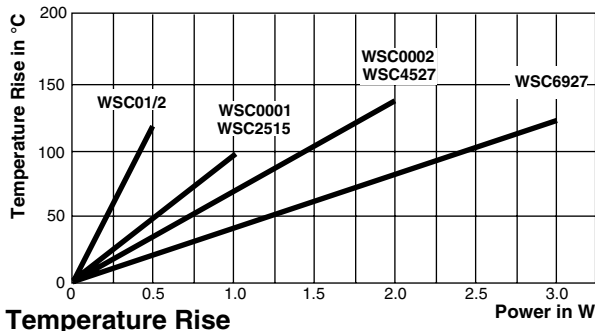
**Note**

<sup>(3)</sup> WSC2515 only

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

**DIMENSIONS** in inches (millimeters)


MODEL	DIMENSIONS					SOLDER PAD DIMENSIONS		
	L	H	T	W	W <sub>1</sub>	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]	0.120 [3.05]
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	0.445 ± 0.032 [11.30 ± 0.813]	0.162 ± 0.015 [4.11 ± 0.381]	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]


**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-481-1, 2, 3



## Disclaimer

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