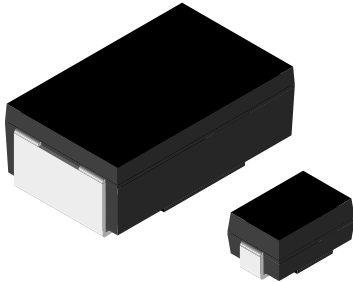


## Wirewound Resistors, Precision Power, Surface Mount



### 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)



**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 - 4.99                | Epoxy         |
| WSC0001      | WSC-1            | 2515      | 1.0                                     | 0.5, 1, 5               | 0.1 - 2.77K               | Epoxy         |
| WSC2515      | WSC2515          | 2515      | 1.0                                     | 0.5, 1, 5 <sup>1)</sup> | 0.1 - 2.77K               | Thermoplastic |
| WSC0002      | WSC-2            | 4527      | 2.0                                     | 0.5, 1, 5               | 0.1 - 4.92K               | Epoxy         |
| WSC4527      | WSC4527          | 4527      | 2.0                                     | 0.5, 1, 5               | 0.1 - 4.92K               | Thermoplastic |
| WSC6927      | WSC6927          | 6927      | 3.0                                     | 0.5, 1, 5               | 0.1 - 8K                  | Thermoplastic |

#### Note

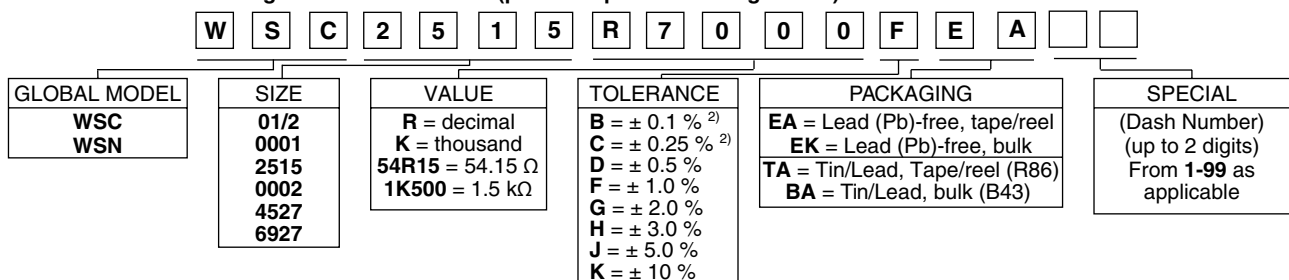
- Part Marking: 1/2 W - DALE, Value; 1 W - Model, Value, Tolerance, Date Code; 2 W & 3 W - DALE, Model, Value, Tolerance, Date Code
- 1) 0.1 % and 0.25 % is available on the WSC2515 for 0.499  $\Omega$  to 2.5 k $\Omega$  range.

### TECHNICAL SPECIFICATIONS

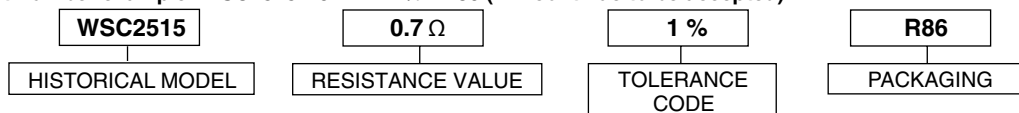
| PARAMETER                       | UNIT                    | WSC01/2                                                                            | WSC0001                                                                                                                   | WSC2515                                                                                                                                                               | WSC0002                                                                                                                 | WSC4527/WSC6927                                                                                                                                                   |
|---------------------------------|-------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature Coefficient         | ppm/ $^{\circ}\text{C}$ | 0.1 $\Omega$ - 0.99 $\Omega$ = $\pm 90$<br>1.0 $\Omega$ - 4.99 $\Omega$ = $\pm 50$ | 0.1 $\Omega$ - 0.99 $\Omega$ = $\pm 90$<br>1.0 $\Omega$ - 26.5 $\Omega$ = $\pm 50$<br>26.51 $\Omega$ and above = $\pm 20$ | 0.1 $\Omega$ - 0.3 $\Omega$ = $\pm 150$<br>0.31 $\Omega$ - 0.99 $\Omega$ = $\pm 90$<br>1.0 $\Omega$ - 26.5 $\Omega$ = $\pm 50$<br>26.51 $\Omega$ and above = $\pm 20$ | 0.1 $\Omega$ - 0.99 $\Omega$ = $\pm 90$<br>1.0 $\Omega$ - 9.9 $\Omega$ = $\pm 50$<br>10.0 $\Omega$ and above = $\pm 20$ | 0.1 $\Omega$ - 0.3 $\Omega$ = $\pm 150$<br>0.31 $\Omega$ - 0.99 $\Omega$ = $\pm 90$<br>1.0 $\Omega$ - 9.9 $\Omega$ = $\pm 50$<br>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/+ 175                                                                         | - 65/+ 175                                                                                                                | - 65/+ 275                                                                                                                                                            | - 65/+ 175                                                                                                              | - 65/+ 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

New Global Part Numbering: WSC2515R7000FEA (preferred part numbering format)



Historical Part Number example: WSC2515 0.7  $\Omega$  1 % R86 (will continue to be accepted)

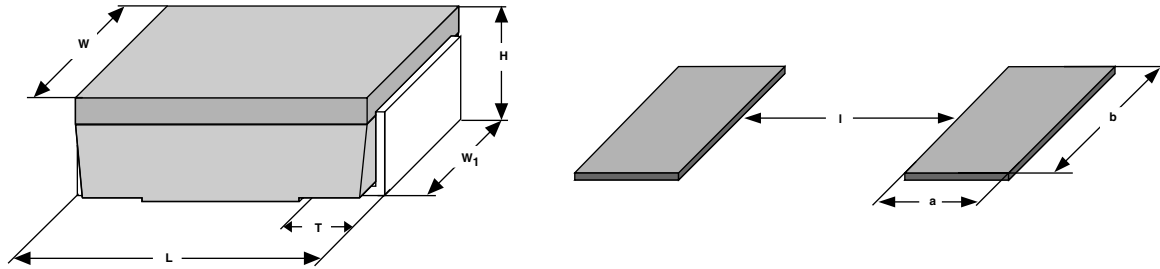


#### Note

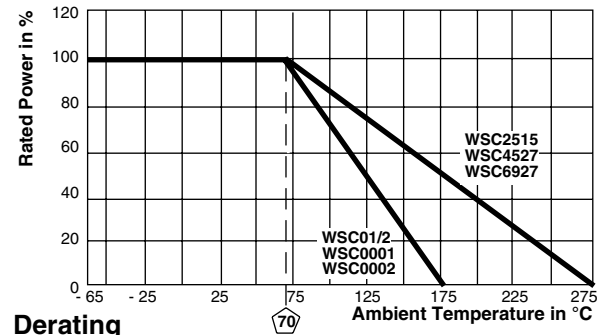
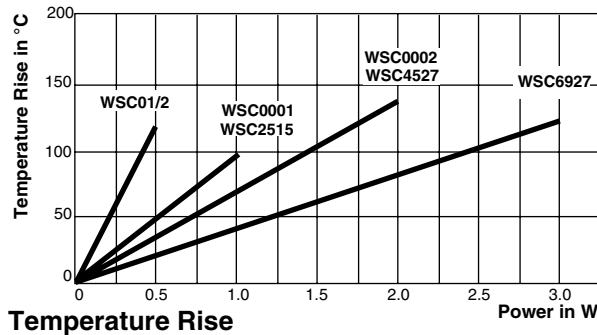
2) WSC2515 only

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

### DIMENSIONS



| MODEL   | DIMENSIONS in inches [millimeters] |                                 |                                 |                                 |                                 | SOLDER PAD DIMENSIONS in inches [millimeters] |              |               |
|---------|------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------------------|--------------|---------------|
|         | L                                  | H                               | T                               | W                               | W <sub>1</sub>                  | a                                             | b            | l             |
| WSC01/2 | 0.200 ± 0.020<br>[5.08 ± 0.508]    | 0.096 ± 0.015<br>[2.44 ± 0.381] | 0.040 ± 0.010<br>[1.02 ± 0.254] | 0.125 ± 0.005<br>[3.18 ± 0.127] | 0.050 ± 0.010<br>[1.27 ± 0.254] | 0.085 [2.16]                                  | 0.070 [1.78] | 0.080 [2.03]  |
| WSC0001 | 0.250 ± 0.020<br>[6.35 ± 0.508]    | 0.110 ± 0.015<br>[2.79 ± 0.381] | 0.045 ± 0.010<br>[1.14 ± 0.254] | 0.150 ± 0.005<br>[3.81 ± 0.127] | 0.098 ± 0.005<br>[2.49 ± 0.127] | 0.090 [2.29]                                  | 0.115 [2.92] | 0.120 [3.05]  |
| WSC2515 | 0.250 ± 0.020<br>[6.35 ± 0.508]    | 0.110 ± 0.015<br>[2.79 ± 0.381] | 0.045 ± 0.010<br>[1.14 ± 0.254] | 0.150 ± 0.005<br>[3.81 ± 0.127] | 0.098 ± 0.005<br>[2.49 ± 0.127] | 0.090 [2.29]                                  | 0.115 [2.92] | 0.120 [3.05]  |
| WSC0002 | 0.445 ± 0.032<br>[11.30 ± 0.813]   | 0.162 ± 0.015<br>[4.11 ± 0.381] | 0.100 ± 0.010<br>[2.54 ± 0.254] | 0.275 ± 0.005<br>[6.98 ± 0.127] | 0.215 ± 0.005<br>[5.46 ± 0.127] | 0.155 [3.94]                                  | 0.230 [5.84] | 0.205 [5.21]  |
| WSC4527 | 0.455 ± 0.020<br>[11.56 ± 0.508]   | 0.167 ± 0.010<br>[4.24 ± 0.254] | 0.100 ± 0.010<br>[2.54 ± 0.254] | 0.275 ± 0.005<br>[6.98 ± 0.127] | 0.215 ± 0.005<br>[5.46 ± 0.127] | 0.155 [3.94]                                  | 0.230 [5.84] | 0.205 [5.21]  |
| WSC6927 | 0.690 ± 0.032<br>[17.53 ± 0.813]   | 0.280 ± 0.015<br>[7.11 ± 0.381] | 0.100 ± 0.010<br>[2.54 ± 0.254] | 0.275 ± 0.005<br>[6.98 ± 0.127] | 0.215 ± 0.015<br>[5.46 ± 0.381] | 0.155 [3.94]                                  | 0.235 [5.97] | 0.470 [11.94] |



### PERFORMANCE

| TEST                      | CONDITIONS OF TEST                                                  | TEST LIMITS           |
|---------------------------|---------------------------------------------------------------------|-----------------------|
| Thermal Shock             | - 55 °C to + 150 °C, 1000 cycles, 15 minutes at each extreme        | ± (0.5 % + 0.05 Ω) ΔR |
| Short Time Overload       | 5 x rated power for 5 seconds                                       | ± (0.2 % + 0.05 Ω) ΔR |
| Low Temperature Storage   | - 65 °C for 24 hours                                                | ± (0.2 % + 0.05 Ω) ΔR |
| High Temperature Exposure | 1000 hours at + 275 °C (+ 175 °C for WSC01/2, WSC0001 and WSC0002)  | ± (0.5 % + 0.05 Ω) ΔR |
| Bias Humidity             | + 85 °C, 85 % RH, 10 % Bias, 1000 hours                             | ± (0.2 % + 0.05 Ω) ΔR |
| Mechanical Shock          | 100 g's for 11 milliseconds, 5 pulses                               | ± (0.1 % + 0.05 Ω) ΔR |
| Vibration                 | Frequency varied 10 to 500 Hz in one minute, 3 directions, 9 hours  | ± (0.1 % + 0.05 Ω) ΔR |
| Load Life                 | 1000 hours at rated power, + 70 °C, 1.5 hours "ON", 0.5 hours "OFF" | ± (1.0 % + 0.05 Ω) ΔR |
| Resistance to Solder Heat | + 260 °C Solder, 10 - 12 second dwell, 25 mm/second 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



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