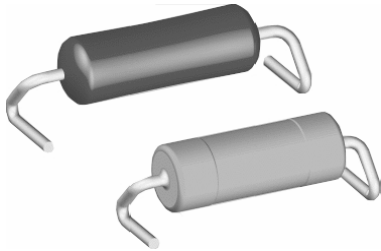


## Wirewound Resistors, Surface Mount, Silicone or Cement Coated, High Power



### FEATURES

- Low cost, high power (up to 3.75 W)
- All welded construction
- Ideal for pulsing application
- Ceramic core
- Available on tape and reel
- AEC-Q200 qualified available <sup>(1)</sup>
- Compliant to RoHS Directive 2002/95/EC

### Note

<sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies.



### STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | SIZE | POWER RATING<br>$P_{25^{\circ}\text{C}}$<br>W | RESISTANCE RANGE <sup>(2)</sup> $\Omega$<br>TCR<br>- 10 ... - 80 ppm/K <sup>(3)</sup><br>(CLASS 1) | RESISTANCE RANGE <sup>(2)</sup> $\Omega$<br>TCR<br>100 ... 180 ppm/K<br>(CLASS 3) | RESISTANCE RANGE $\Omega$<br>TCR<br>$\pm 50$ ppm/ $^{\circ}\text{C}$ | RESISTANCE RANGE $\Omega$<br>TCR<br>$\pm 30$ ppm/ $^{\circ}\text{C}$ | TOLERANCE<br>$\pm$ % | WEIGHT (typical)<br>g | ENCAPS.  |
|--------------|------|---|--|---|--|--|----------------------|-----------------------|----------|
| WSZ6720      | 6720 | 1.8 <sup>(4)</sup>                            | 1 to 510   | n/a   | n/a  | n/a  | 1                    | 0.6                   | Cement   |
|              |      |   | 0.22 to 510  | n/a   | n/a  | n/a  | 2                    |                       |          |
|              |      |   | 0.10 to 510  | 24 to 3.3K  | n/a  | n/a  | 5                    |                       |          |
|              |      |   | 0.10 to 510  | 1.8 to 3.3K   | n/a  | n/a  | 10                   |                       |          |
| WSZ7532      | 7532 | 3.75  | n/a  | n/a   | n/a  | 10 to 15K  | 1, 3                 | 0.7                   | Silicone |
|              |      |   | n/a  | n/a   | 1 to 9.99  | 10 to 15K  | 5, 10                |                       |          |

### Notes

<sup>(2)</sup> Lower TCR or other power range on request. Resistance value to be selected for  $\pm 10$  % tolerance from E12 and for  $\pm 5$  % from E24.

<sup>(3)</sup>  $\leq 1 \Omega \leq 400$  ppm/K.

<sup>(4)</sup> Power rating depends on the maximum temperature at the solder point, solder pad dimensions, the component placement density and the substrate material.

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: **WSZ672011509KBM000**

**W S Z 6 7 2 0 1 1 5 0 9 K B M 0 0 0**

| GLOBAL MODEL   | TCR/MATERIAL  | VALUE  | TOLERANCE CODE  | PACKAGING   | SPECIAL                           |
|----------------|---|--|---|---|-----------------------------------|
| <b>WSZ6720</b> | <b>1</b> =<br>- 10 ... - 80 ppm/K<br>WM 50<br>Class 1<br><b>3</b> =<br>100 ... 180 ppm/K<br>WM 110<br>Class 3 | <b>3 digit value</b><br><b>1 digit multiplier</b><br>MULTIPLIER<br><b>7</b> = $\ast 10^{-3}$<br><b>8</b> = $\ast 10^{-2}$<br><b>9</b> = $\ast 10^{-1}$<br><b>0</b> = $\ast 10^0$<br><b>1</b> = $\ast 10^1$<br><b>2</b> = $\ast 10^2$<br><b>3</b> = $\ast 10^3$ | <b>F</b> = $\pm 1.0$ %<br><b>G</b> = $\pm 2.0$ %<br><b>J</b> = $\pm 5.0$ %<br><b>K</b> = $\pm 10.0$ % | <b>BM</b> = Lead (Pb)-free, tape/reel<br><b>LX</b> = Lead (Pb)-free, bulk | 3 digits<br><b>000</b> = Standard |

Historical Part Numbering example: **WSZ6720 WM 50 15  $\Omega$  10 % BM**

| <b>WSZ6720</b>   | <b>WM 50</b> | <b>15 <math>\Omega</math></b> | <b>10 %</b>    | <b>BM</b> |
|------------------|--------------|-------------------------------|----------------|-----------|
| HISTORICAL MODEL | TCR/MATERIAL | VALUE                         | TOLERANCE CODE | PACKAGING |

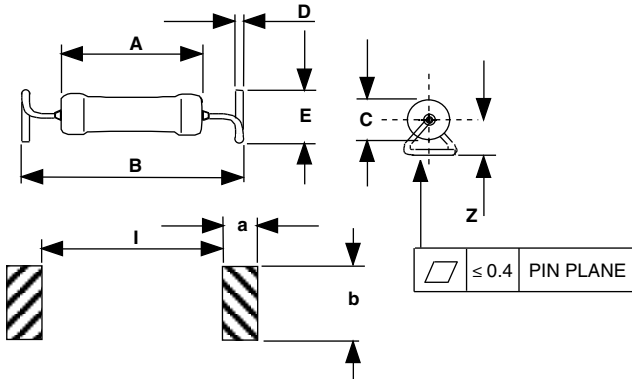
Global Part Numbering example: **WSZ75321K000JTA**

**W S Z 7 5 3 2 1 K 0 0 0 J T A**

| GLOBAL MODEL   | VALUE  | TOLERANCE CODE  | PACKAGING  | SPECIAL  |
|----------------|--|---|--|--|
| <b>WSZ7532</b> | <b>R</b> = Decimal<br><b>K</b> = Thousand<br><b>54R15</b> = 54.15 $\Omega$<br><b>1K325</b> = 1325 $\Omega$ | <b>F</b> = $\pm 1.0$ %<br><b>G</b> = $\pm 2.0$ %<br><b>H</b> = $\pm 3.0$ %<br><b>J</b> = $\pm 5.0$ %<br><b>K</b> = $\pm 10$ % | <b>EA</b> = Lead (Pb)-free, tape/reel<br><b>EK</b> = Lead (Pb)-free, bulk<br><br><b>TA</b> = Tin/lead, tape/reel<br><b>BA</b> = Tin/lead, bulk | (Dash number)<br>(Up to 3 digits)<br>From <b>1 to 999</b><br>as applicable |

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

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

**DIMENSIONS**


| MODEL   | DIMENSIONS in millimeters [inches] |                     |                   |                   |                          |                             |
|---------|------------------------------------|---------------------|-------------------|-------------------|--------------------------|-----------------------------|
|         | A <sub>max.</sub>                  | B                   | C <sub>max.</sub> | D <sub>nom.</sub> | E                        | Z                           |
| WSZ6720 | 13.2<br>[0.512]                    | 17 ± 0.5<br>[0.670] | 4.8<br>[0.189]    | 0.8<br>[0.031]    | 5 ± 0.5<br>[0.20 ± 0.02] | 3.6 ± 0.5<br>[0.142 ± 0.02] |
| WSZ7532 | 14.27<br>[0.562]                   | 19.86<br>[0.782]    | 4.78<br>[0.188]   | 0.813<br>[0.032]  | 8.18<br>[0.322]          | 6.5<br>[0.256]              |

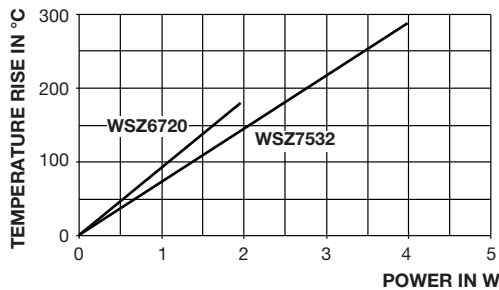
| MODEL   | SOLDER PAD DIMENSIONS in millimeters [inches] |              |               |
|---------|---|--------------|---------------|
|         | a   | b            | l             |
| WSZ6720 | 10 [0.394]                                    | 10 [0.394]   | 14.5 [0.57]   |
| WSZ7532 | 4.0 [0.157]                                   | 9.50 [0.374] | 15.05 [0.593] |

**TECHNICAL SPECIFICATIONS**

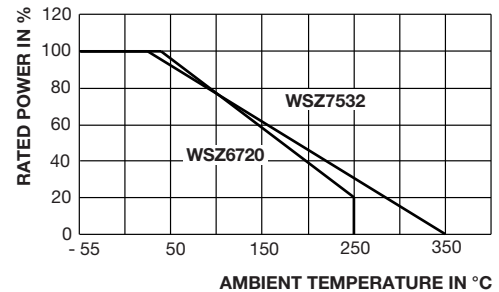
| PARAMETER                   | UNIT   | WSZ6720                                      | WSZ7532       |
|-----------------------------|--------|--|---------------|
| Temperature Coefficient     | ppm/°C | See Standard Electrical Specifications table |               |
| Operating Temperature Range | °C     | - 55 to + 250                                | - 65 to + 350 |
| Maximum Working Voltage     | V      | $(P \times R)^{1/2}$                         |               |
| Terminal Strength           | lb     | 10 minimum                                   |               |

**PERFORMANCE**

| TEST                         | CONDITIONS OF TEST  | TEST LIMITS |                       |
|------------------------------|---|-------------|-----------------------|
|                              |   | WSZ6720     | WSZ7532               |
| Temperature Cycling          | - 55 °C to + 125 °C, 5 cycles, 15 min at each extreme               | ± 3 % ΔR    | ± (2 % + 0.05 Ω) ΔR   |
| High Temperature Exposure    | 1000 h at + 250 °C  | ± 3 % ΔR    | ± (2 % + 0.05 Ω) ΔR   |
| Short Time Overload          | 5 x rated power for 5 s   | ± 1 % ΔR    | ± (2 % + 0.05 Ω) ΔR   |
| Shock, Specified Pulse       | 100 g's for 6 ms, 10 shocks   | ± 1 % ΔR    | ± (2 % + 0.05 Ω) ΔR   |
| Vibration, High Frequency    | Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each | ± 1 % ΔR    | ± (2 % + 0.05 Ω) ΔR   |
| Load Life                    | 2000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF"             | ± 3 % ΔR    | ± (3 % + 0.05 Ω) ΔR   |
| Resistance to Soldering Heat | + 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence              | ± 1 % ΔR    | ± (0.5 % + 0.05 Ω) ΔR |

**TEMPERATURE RISE**


Measurement based on recommended solder pads

**DERATING**

**PACKAGING**

| MODEL                  | REEL                   |            |             |       |
|------------------------|------------------------|------------|-------------|-------|
|                        | TAPE WIDTH             | DIAMETER   | PIECES/REEL | CODE  |
| WSZ6720                | 24 mm                  | 330 mm     | 1250        | BM    |
| WSZ7532 <sup>(1)</sup> | 32 mm/embossed plastic | 330 mm/13" | 350         | EA/TA |

**Note**
<sup>(1)</sup> Embossed carrier tape per EIA-481.



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