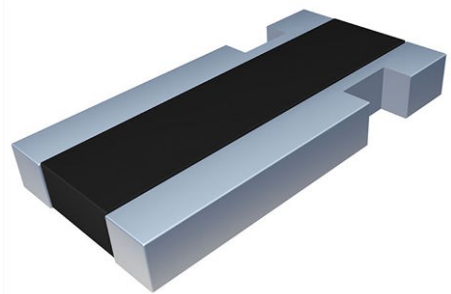


## Power Metal Strip® Resistors, High Power, Surface Mount, 4-Terminal



**DESIGN SUPPORT TOOLS** click logo to get started



### FEATURES

- 4-Terminal design
- All welded construction of the Power Metal Strip® resistors are ideal for all types of current sensing, voltage division, and pulse applications
- Proprietary processing technique produces extremely low resistance values
- Low thermal EMF ( $< 3 \mu\text{V}/^\circ\text{C}$ )
- Construction is unaffected by high sulfur environments
- Solid metal nickel-chrome or manganese-copper resistive element with low TCR ( $< 20 \text{ ppm}/^\circ\text{C}$ )
- AEC-Q200 qualified available <sup>(1)</sup>
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### Notes

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

| STANDARD ELECTRICAL SPECIFICATIONS |      |   |                       |                                    |  |                                   |
|------------------------------------|------|---|-----------------------|------------------------------------|--|-----------------------------------|
| GLOBAL MODEL                       | SIZE | POWER RATING<br>$P_{70^\circ\text{C}}$<br>W | TOLERANCE<br>$\pm \%$ | RESISTANCE VALUE RANGE<br>$\Omega$ | RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(1)</sup><br>$\Omega$ | WEIGHT (typical)<br>g/1000 pieces |
| WSK0612                            | 0612 | 1.0   | 1.0                   | 0.50m to 5.0m                      | 0.5m, 0.75m, 0.8m, 1m, 2m, 3m, 4m, 5m                            | 8.2                               |

### Note

- <sup>(1)</sup> Other values may be available, contact factory

| GLOBAL PART NUMBER INFORMATION   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |  |  |
|--|---|---|---|---|---|---|--|---|---|---|---|---|---|---|--|--|
| Global Part Numbering example: WSK06121L000FEA (visit <a href="http://www.vishay.net">www.vishay.net</a> Vishay Dale parts numbering manual for all options) |   |   |   |   |   |   |  |   |   |   |   |   |   |   |  |  |
| W  | S | K | 0   | 6 | 1 | 2 | 1  | L | 0   | 0 | 0 | F   | E | A |  |  |
| GLOBAL MODEL (7 digits)<br><b>WSK0612</b>  |   |   | RESISTANCE VALUE (5 digits)<br>L = m $\Omega$<br>L5000 = 0.0005 $\Omega$<br>L7500 = 0.00075 $\Omega$<br>L8000 = 0.0008 $\Omega$<br>1L000 = 0.001 $\Omega$<br>2L000 = 0.002 $\Omega$<br>3L000 = 0.003 $\Omega$<br>4L000 = 0.004 $\Omega$<br>5L000 = 0.005 $\Omega$ |   |   |   | TOLERANCE CODE (1 digit)<br>F = $\pm 1.0 \%$ |   | PACKAGING CODE <sup>(1)</sup> (2 digits)<br>EA = lead (Pb)-free, tape/reel<br>EK = lead (Pb)-free, bulk |   |   | SPECIAL (2 digits)<br>(dash number) (up to 2 digits) from 1 to 99 as applicable |   |   |  |  |

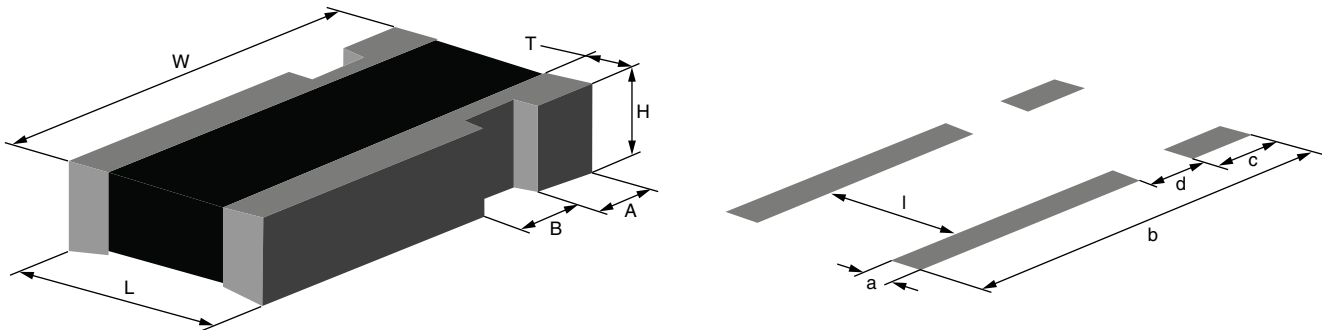
### Notes

- <sup>(1)</sup> EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. The non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it has a package quantity of 1000 pieces

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

This Vishay product is protected by one or more United States and International patents.

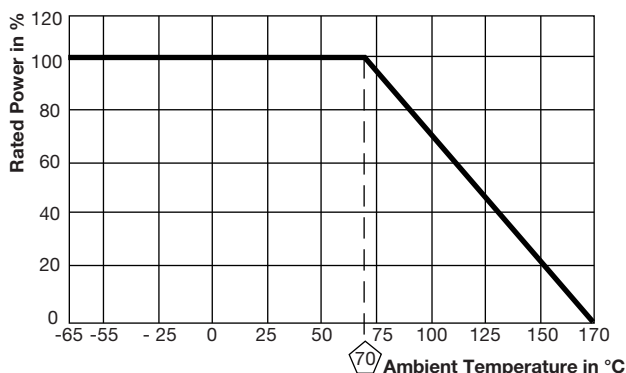
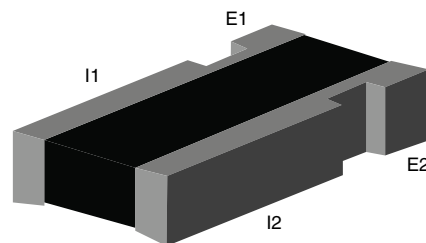
| TECHNICAL SPECIFICATIONS    |        |                                    |
|-----------------------------|--------|------------------------------------|
| PARAMETER                   | UNIT   | RESISTOR CHARACTERISTICS           |
| Temperature coefficient     | ppm/°C | 0 to -600 for 0.5 mΩ               |
|                             |        | ± 200 for 0.75 mΩ                  |
|                             |        | 0 to -275 for 1 mΩ                 |
|                             |        | 0 to -225 for 2 mΩ                 |
|                             |        | 0 to -150 for 3 mΩ, 4 mΩ, and 5 mΩ |
| Operating temperature range | °C     | -65 to +170                        |
| Maximum working voltage     | V      | $(P \times R)^{1/2}$               |

**DIMENSIONS**

**Note**

- 3D models available: [www.vishay.com/doc?30378](http://www.vishay.com/doc?30378)
- Surface mount solder profile recommendations: [www.vishay.com/doc?31052](http://www.vishay.com/doc?31052)

| MODEL   | DIMENSIONS in inches (millimeters) |                                 |                                  |                                  |                                 |                                 |
|---------|------------------------------------|---------------------------------|----------------------------------|----------------------------------|---------------------------------|---------------------------------|
|         | L                                  | W                               | H                                | T                                | A                               | B                               |
| WSK0612 | 0.060 ± 0.010<br>(1.50 ± 0.254)    | 0.120 ± 0.010<br>(3.05 ± 0.254) | 0.015 ± 0.010<br>(0.381 ± 0.254) | 0.015 ± 0.010<br>(0.381 ± 0.254) | 0.020 ± 0.005<br>(0.51 ± 0.127) | 0.020 ± 0.005<br>(0.51 ± 0.127) |

| MODEL   | SOLDER PAD DIMENSIONS in inches (millimeters) |              |               |               |              |
|---------|---|--------------|---------------|---------------|--------------|
|         | a   | b            | c             | d             | l            |
| WSK0612 | 0.040 (1.01)                                  | 0.135 (3.43) | 0.030 (0.762) | 0.015 (0.381) | 0.030 (0.76) |

**DERATING**

**4 TERMINAL KELVIN CONNECTIONS**

**Notes**

- E1 and E2: voltage sense connection
- I1 and I2: current connection



| PERFORMANCE               |  |             |
|---------------------------|--|-------------|
| TEST                      | CONDITIONS OF TEST   | TEST LIMITS |
| Thermal shock             | -55 °C to +150 °C, 1000 cycles, 15 min at each extreme         | ± 1.0 %     |
| Short time overload       | 5x rated power for 5 s   | ± 0.5 %     |
| Low temperature operation | -65 °C for 24 h  | ± 0.5 %     |
| High temperature exposure | 1000 h at +170 °C  | ± 2.0 %     |
| Bias humidity             | +85 °C, 85 % RH, 10 % bias, 1000 h                             | ± 0.5 %     |
| Mechanical shock          | 100 g's for 6 ms, 5 pulses                                     | ± 0.5 %     |
| Vibration                 | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | ± 0.5 %     |
| Load life                 | 1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"                      | ± 2.0 %     |
| Resistance to solder heat | +260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence          | ± 0.5 %     |
| Moisture resistance       | MIL-STD-202, method 106, 0 % power, 7a and 7b not required     | ± 1.0 %     |

| PACKAGING (1) |                       |           |             |      |
|---------------|-----------------------|-----------|-------------|------|
| MODEL         | REEL                  |           |             |      |
|               | TAPE WIDTH            | DIAMETER  | PIECES/REEL | CODE |
| WSK0612       | 8 mm/embossed plastic | 178 mm/7" | 4000        | EA   |

Notes

- Embossed Carrier Tape per EIA-481
- (1) Additional packaging details at [www.vishay.com/doc?20051](http://www.vishay.com/doc?20051)



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