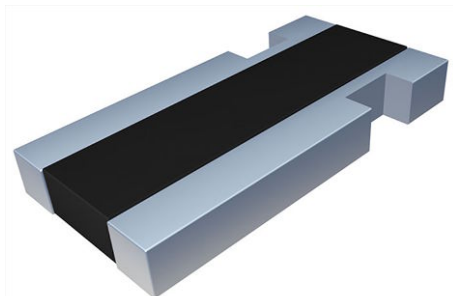


Power Metal Strip® Resistors, High Power, Surface Mount, 4-Terminal



DESIGN SUPPORT TOOLS

3D
Models
Available


Design Tools
Available

[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
- Sulfur resistance by construction that is unaffected by high sulfur environments
- Low thermal EMF ($< 3 \mu\text{V}/^\circ\text{C}$)
- Solid metal nickel-chrome or manganese-copper resistive element with low TCR ($< 20 \text{ ppm}/^\circ\text{C}$)
- AEC-Q200 qualified available ⁽¹⁾
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

Notes

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

STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | SIZE | POWER RATING $P_{70^\circ\text{C}}$ W | TOLERANCE $\pm \%$ | RESISTANCE VALUE RANGE Ω | RESISTANCE VALUES CURRENTLY AVAILABLE ⁽¹⁾ Ω | WEIGHT (typical) 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

- ⁽¹⁾ Other values may be available, contact factory

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: **WSK06121L000FEA** (visit www.vishay.net 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)
WSK0612

RESISTANCE VALUE
(5 digits)
L = m Ω
L5000 = 0.0005 Ω
L7500 = 0.00075 Ω
L8000 = 0.0008 Ω
1L000 = 0.001 Ω
2L000 = 0.002 Ω
3L000 = 0.003 Ω
4L000 = 0.004 Ω
5L000 = 0.005 Ω

TOLERANCE CODE
(1 digit)
F = $\pm 1.0 \%$

PACKAGING CODE ⁽¹⁾
(2 digits)
EA = lead (Pb)-free, tape/reel
EK = lead (Pb)-free, bulk

SPECIAL
(2 digits)
(dash number)
(up to 2 digits)
from **1 to 99** as
applicable

Note

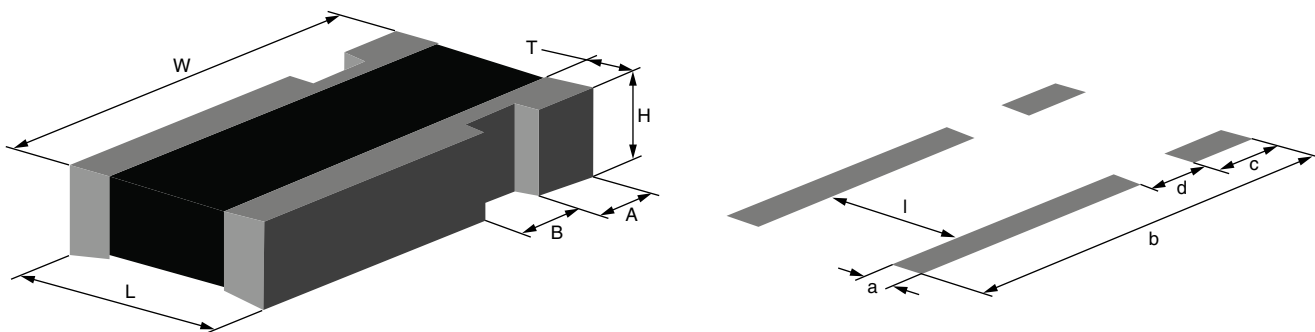
- ⁽¹⁾ EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. The non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it has a package quantity of 1000 pieces

PATENT(S): www.vishay.com/patents

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

TECHNICAL SPECIFICATIONS

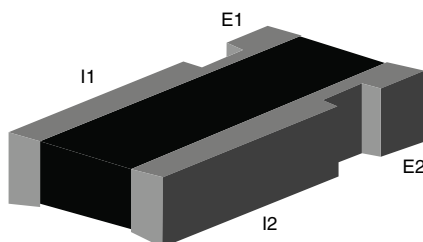
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
|-----------------------------|--------|------------------------------------|
| Temperature coefficient | ppm/°C | 0 to -600 for 0.5 mΩ |
| | | ± 200 for 0.75 mΩ |
| | | 0 to -275 for 1 mΩ |
| | | 0 to -225 for 2 mΩ |
| | | 0 to -150 for 3 mΩ, 4 mΩ, and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

DIMENSIONS

Notes

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

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

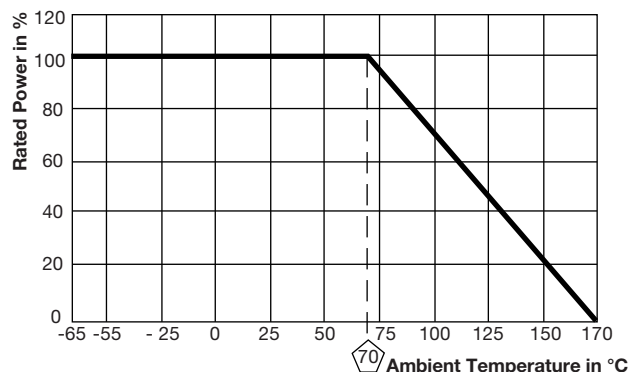
| MODEL | SOLDER PAD DIMENSIONS in inches (millimeters) | | | | |
|---------|---|--------------|---------------|---------------|--------------|
| | a | b | c | d | l |
| WSK0612 | 0.040 (1.01) | 0.135 (3.43) | 0.030 (0.762) | 0.015 (0.381) | 0.030 (0.76) |

4 TERMINAL KELVIN CONNECTIONS

Notes

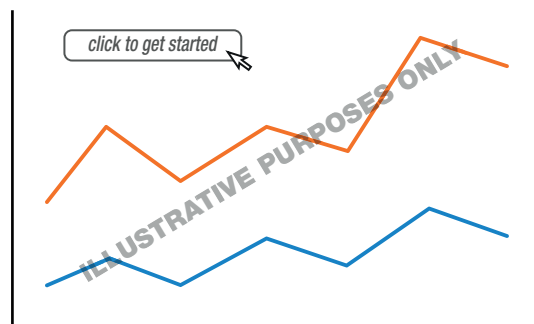
- E1 and E2: voltage sense connection
- I1 and I2: current connection



DERATING



PULSE CAPABILITY



www.vishay.com/resistors/power-metal-strip-calculator

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



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