

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



FEATURES

- 4-terminal design
- Ideal for all types of current sensing, voltage division and pulse applications
- Proprietary processing technique produces extremely low resistance values
- Durable with all-welded construction
- All welded construction
- Solid metal nickel-chrome or manganese-copper resistive element with low TCR (< 20 ppm/°C)
- Low thermal EMF (< 3 μV/°C)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | | |
|------------------------------------|------|---|---------------------------------|-------------------|------------------|------------------|-----------------------------------|
| GLOBAL MODEL | SIZE | POWER RATING $P_{70^{\circ}\text{C}}$ W | RESISTANCE VALUE RANGE Ω | | | | WEIGHT (typical) g/1000 pieces |
| | | | Tol. ± 0.1 % | Tol. ± 0.25 % | Tol. ± 0.5 % | Tol. ± 1.0 % | |
| WSK1206 | 1206 | 0.25 | 0.04 to 0.05 | 0.02 to 0.05 | 0.01 to 0.05 | 0.01 to 0.05 | 16 |

Notes

- Part marking: due to resistor size limitation, parts will be marked with only the resistance value.
- Resistance values are available per WSL decade table (www.vishay.com/doc?30117).

| TECHNICAL SPECIFICATIONS | | |
|---|--------|--------------------------|
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
| Component temperature coefficient (including terminal) ⁽¹⁾ | ppm/°C | ± 35 |
| Element TCR ⁽²⁾ | ppm/°C | < 20 |
| Operating temperature range | °C | -65 to +170 |
| Maximum working voltage ⁽³⁾ | V | $(P \times R)^{1/2}$ |

Notes

- ⁽¹⁾ Component TCR - total TCR that includes the TCR effects of the resistor element and the copper terminal.
- ⁽²⁾ Element TCR - only applies to the alloy used for the resistor element; refer to item 1 in the construction illustration on the following page.
- ⁽³⁾ Maximum working voltage - the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive.

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | |
|--|---|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|--|--|
| Global Part Numbering example: WSK1206R0150FEA | | | | | | | | | | | | | | | | |
| W | S | K | 1 | 2 | 0 | 6 | R | 0 | 1 | 5 | 0 | F | E | A | | |
| GLOBAL MODEL | | RESISTANCE VALUE | | | TOLERANCE CODE | | | PACKAGING CODE ⁽¹⁾ | | | SPECIAL | | | | | |
| WSK1206 | | R = decimal R0100 = 0.01 Ω | | | B = ± 0.1 % C = ± 0.25 % D = ± 0.5 % F = ± 1.0 % | | | EA = lead (Pb)-free, tape / reel EK = lead (Pb)-free, bulk | | | (Dash number) (up to 2 digits) From 1 to 99 as applicable | | | | | |

Note

⁽¹⁾ Packaging code: EB (lead (Pb)-free) and TB (tin / lead) are non-standard packaging codes designating 1000 piece reels. These non-standard packaging codes are identical to our standard EA (lead (Pb)-free) and TA (tin / lead), except that they have a package quantity of 1000 pieces.

DIMENSIONS


| MODEL | DIMENSIONS in inches (millimeters) | | | | | |
|---------|------------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | L | W | H | T | A | B |
| WSK1206 | 0.126 ± 0.010 (3.20 ± 0.254) | 0.063 ± 0.010 (1.60 ± 0.254) | 0.025 ± 0.010 (0.635 ± 0.254) | 0.020 ± 0.010 (0.508 ± 0.254) | 0.023 ± 0.010 (0.584 ± 0.254) | 0.018 ± 0.010 (0.457 ± 0.254) |

| MODEL | SOLDER PAD DIMENSIONS in inches (millimeters) | | | | |
|---------|---|------------------|------------------|-----------------|------------------|
| | a | b | c | d | l |
| WSK1206 | 0.040 (1.01) | 0.070 (1.778) | 0.030 (0.762) | 0.01 (0.254) | 0.070 (1.778) |



DERATING



| PERFORMANCE | | |
|---------------------------|--|--------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS |
| Thermal shock | -55 °C to +150 °C, 1000 cycles, 15 min at each extreme | ± (0.5 %) ΔR |
| Short time overload | 5x rated power for 5 s | ± (0.5 %) ΔR |
| Low temperature operation | -65 °C for 45 min | ± (0.5 %) ΔR |
| High temperature exposure | 1000 h at +170 °C | ± (1.0 %) ΔR |
| Bias humidity | +85 °C, 85 % RH, 10 % bias, 1000 h | ± (0.5 %) ΔR |
| Mechanical shock | 100 g's for 6 ms, 5 pulses | ± (0.5 %) ΔR |
| Vibration | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | ± (0.5 %) ΔR |
| Load life | 1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF" | ± (1.0 %) ΔR |
| Resistance to solder heat | +260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence | ± (0.5 %) ΔR |
| Moisture resistance | MIL-STD-202, method 106, 0 % power, 7b not required | ± (0.5 %) ΔR |

| PACKAGING | | | | |
|-----------|-----------------------|-----------|-------------|------|
| MODEL | REEL | | | |
| | TAPE WIDTH | DIAMETER | PIECES/REEL | CODE |
| WSK1206 | 8 mm/embossed plastic | 178 mm/7" | 4000 | EA |

Notes

- Embossed carrier tape per EIA-481.
- Wirewound, Metal Film, and Power Metal Strip® Packaging (www.vishay.com/doc?20051).



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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.