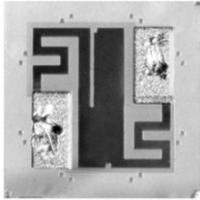


NiCr Thin Film, Top-Contact Resistor



Product may not be to scale

FEATURES

- Wire bondable
- Chip size: 0.020 inches square
- Resistance range: 10 Ω to 510 kΩ
- Resistor material: Nichrome
- Quartz substrate: < 0.1 pF shunt capacitance
- Power: 25 mW

The QFN series nichrome on quartz resistor chips offer a combination of nichrome stability, excellent frequency response and small size.

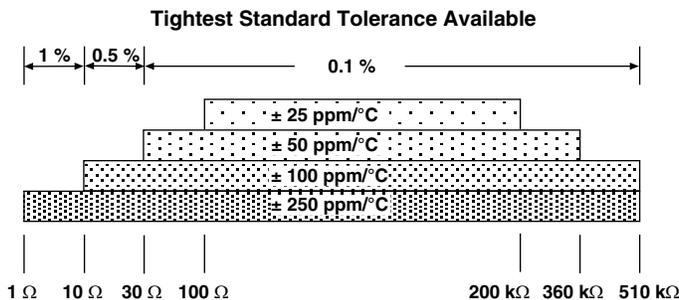
The QFNs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The QFNs are 100 % electrically tested and visually inspected to MIL-STD-883.

APPLICATIONS

Vishay EFI QFN top-contact resistor chips are widely used in hybrid packages where space is limited. Designed with capacity to handle substantial power loads, they also have the benefit of nichrome stability.

Recommended for hermetic environments where die is not exposed to moisture.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

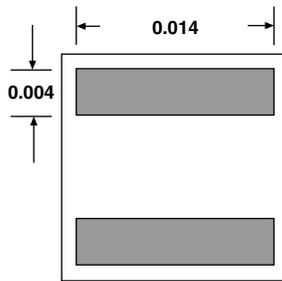
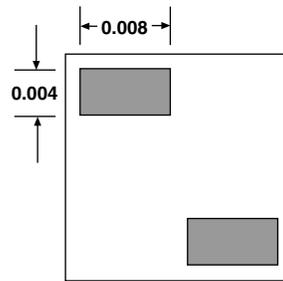
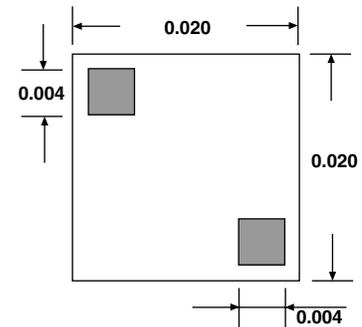


| PROCESS CODE | |
|-------------------|----------|
| CLASS H* | CLASS K* |
| 203 | 207 |
| 201 | 205 |
| 202 | 206 |
| 200 | 204 |
| Gold terminations | |

*MIL-PRF-38534 inspection criteria

STANDARD ELECTRICAL SPECIFICATIONS

| PARAMETER | |
|---|------------------------------|
| Noise, MIL-STD-202, Method 308 100 Ω - 250 kΩ < 100 Ω or > 251 kΩ | - 35 dB typ. - 20 dB typ. |
| Stability, 1000 h, + 125 °C, 50 mW | ± 0.1 % max. ΔR/R |
| Operating Temperature Range | - 55 °C to + 125 °C |
| Thermal Shock, MIL-STD-202, Method 107, Test Condition F | ± 0.25 % max. ΔR/R |
| High Temperature Exposure, + 150 °C, 100 h | ± 0.5 % max. ΔR/R |
| Dielectric Voltage Breakdown | 200 V |
| Insulation Resistance | 10 ¹² min. |
| Operating Voltage | 100 V max. |
| DC Power Rating at + 70 °C (Derated to Zero at + 175 °C) | 25 mW |
| 5 x Rated Power Short-Time Overload, + 25 °C, 5 s | ± 0.25 % max. ΔR/R |

DIMENSIONS in inches

TYPICAL RANGE
 10 Ω - 55 Ω

TYPICAL RANGE
 56 Ω - 7.4 kΩ

TYPICAL RANGE
 7.5 kΩ - 510 kΩ

SCHEMATIC

MECHANICAL SPECIFICATIONS in inches

| PARAMETER | |
|-------------------------|---|
| Chip Size | 0.020 x 0.020 ± 0.003 (0.51 x 0.51 ± 0.05 mm) |
| Chip Thickness | 0.010 ± 0.002 (0.254 ± 0.05 mm) |
| Chip substrate Material | Quartz |
| Resistor Material | Nichrome (passivation optional) |
| Bonding Pad Size | 0.004 x 0.004 (0.10 x 0.10 mm) |
| Number of Pads | 2 |
| Pad Material | 15 kÅ minimum gold |
| Backing | None, lapped quartz |

Options: Aluminum bonding pads, 10 kÅ minimum thickness
 Consult Applications Engineer

ORDERING INFORMATION

Example: 100 % visual, 10 kΩ, ± 1 %, ± 50 ppm/°C TCR, gold pads, class H visual inspection

| W INSPECTION/ PACKAGING | QFN PRODUCT FAMILY | 202 PROCESS CODE | 1000 RESISTANCE VALUE | 1 MULTIPLIER CODE | F TOLERANCE CODE |
|--|--------------------------|------------------------|---|--|---|
| W = 100 % visually inspected parts in matrix tray per MIL-STD-883 | | See Process Code table | Use the first 4 digits significant digits of the resistance | B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100 3 = 1000 4 = 10 000 | B = 0.1 % C = 0.2 % D = 0.5 % F = 1.0 % G = 2.0 % H = 2.5 % J = 5.0 % K = 10 % |
| Available alternatives: Aluminum pads or gold back Passivation (thermal set plastic) | | | | | |



Disclaimer

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