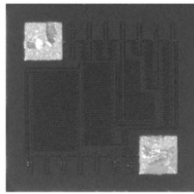


Thin Film, Top-Contact Resistor



Product may not be to scale

The QFM series tantalum nitride on quartz single-value resistor chips offer a small size, wide ohmic value range and excellent frequency response.

The QFMs tantalum nitride resistor material offers excellent resistance to high moisture environments.

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

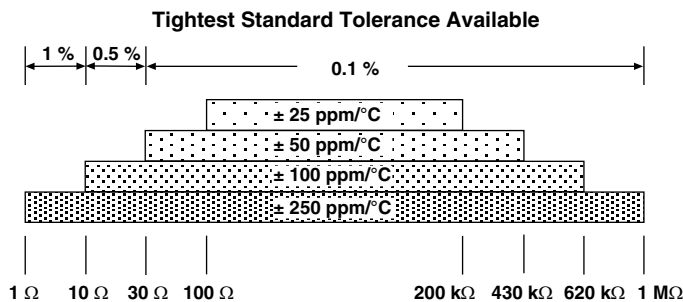
APPLICATIONS

The QFM top-contact resistor chips are designed to handle substantial power loads in many types of hybrid packages. They are ideally suited for this purpose because of their small size.

FEATURES

- Wire bondable
- Small size, 0.020 inches square
- Resistance range: 1.0 Ω to 1 MΩ
- DC power rating: 25 mW
- Quartz substrate: < 0.1 pF shunt capacitance
- Resistor material: Tantalum nitride, self passivating
- Moisture resistant

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

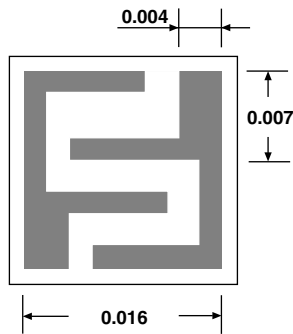
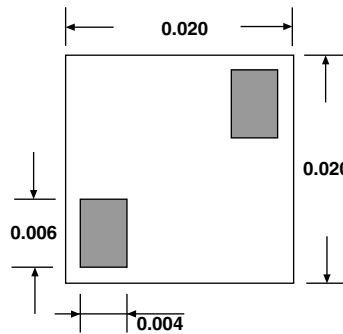
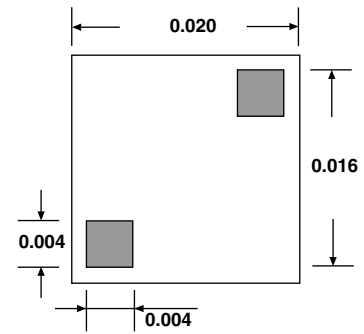


PROCESS CODE	
CLASS H*	CLASS K*
103	107
101	105
102	106
100	104
Aluminum terminations	

*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.
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 % max. ΔR/R
Stability, 1000 h, + 125 °C, 125 mW	± (0.25 % + 0.01 Ω) 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

CONFIGURATIONS in inches

TYPICAL RANGE
 $1 \Omega - 29 \Omega$

TYPICAL RANGE
 $30 \Omega - 819 \Omega$

TYPICAL RANGE
 $820 \Omega - 1 M\Omega$
SCHEMATIC


MECHANICAL SPECIFICATIONS in inches	
PARAMETER	
Chip Size	0.020 x 0.020 ± 0.003 (0.5 x 0.5 ± 0.076 mm)
Chip Thickness	0.010 ± 0.002 (0.254 ± 0.05 mm)
Chip substrate Material	Quartz
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.004 x 0.004 (0.10 x 0.10 mm) minimum
Number of Pads	2
Pad Material	10 kÅ minimum aluminum
Backing	None, lapped quartz

Options: Gold backing for eutectic die attach
 Gold bonding pads, 15 kÅ minimum thickness
 Consult Applications Engineer

ORDERING INFORMATION					
Example: 100 % visual, 10 kΩ, ± 1 %, ± 100 ppm/°C TCR, aluminum pads, class H visual inspection					
W	QFM	102	1000	1	F
INSPECTION/ PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
W = 100 % visually inspected parts in matrix tray per MIL-STD-883 X = Sample, commercial visually inspected parts loaded in matrix trays (4 % AQL)		See Process Code table	Use the first 4 digits of the resistance	D = 0.0001 C = 0.001 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 %



Disclaimer

All product specifications and data are subject to change without notice.

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