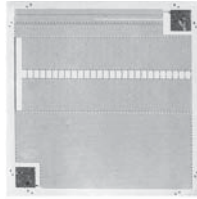


## Thin Film, Top-Contact Megohm Resistor



Product may not be to scale

The QFX series, tantalum nitride on quartz resistor chips combine high resistance with low shunt capacitance. These offer one of the best combinations of small size, frequency response and high value available.

The QFXs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The QFXs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032 class H or K.

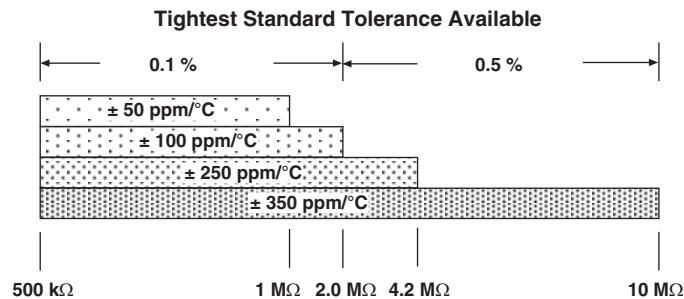
### FEATURES

- Wire bondable
- Chip size: 0.050 inches square
- Case: 0505
- Resistance range: 500 k $\Omega$  to 10 M $\Omega$
- Quartz substrate: < 0.1 pF shunt capacitance
- Resistor material: Tantalum nitride, self-passivating

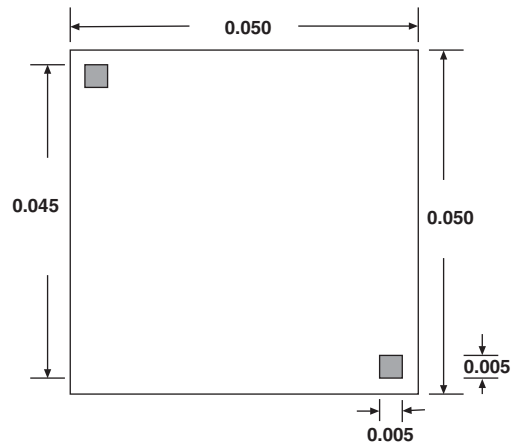
### APPLICATIONS

The QFX series resistor chips are designed for circuits requiring high values with lower shunt capacitance for higher frequency of operation.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES		
PARAMETER	VALUE	UNIT
Total Resistance Range	500K to 10M	$\Omega$
Standard Tolerances	$\pm 0.1, \pm 0.5$	%
TCR	$\pm 50, \pm 100, \pm 250, \pm 350$	ppm/ $^{\circ}$ C



STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308	- 12 typ.	dB
Moisture Resistance, MIL-STD-202 Method 106	$\pm 0.5$ max. $\Delta R/R$	%
Stability, 1000 h, + 125 $^{\circ}$ C, 10 mW	$\pm 0.5$ max. $\Delta R/R$	%
Operating Temperature Range	- 55 to + 125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	$\pm 0.25$ max. $\Delta R/R$	%
High Temperature Exposure, + 150 $^{\circ}$ C, 100 h	$\pm 0.5$ max. $\Delta R/R$	%
Dielectric Voltage Breakdown	400	V
Insulation Resistance	$10^{12}$ min.	$\Omega$
Operating Voltage	400 max.	V
DC Power Rating at + 70 $^{\circ}$ C (Derated to zero at + 175 $^{\circ}$ C)	0.020	W
5 x Rated Power Short-Time Overload, + 25 $^{\circ}$ C, 5 s	$\pm 0.25$ max. $\Delta R/R$	%

**DIMENSIONS** in inches

**SCHEMATIC**


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.050" x 0.050" ± 0.003" (1.25 mm x 1.25 mm ± 0.75 mm)
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Substrate Material	Quartz
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad size	0.005" x 0.005" (0.127 mm x 0.127 mm)
Number of Pads	2
Pad Material	10 kÅ minimum aluminum (Au optional)
Backing	None, lapped quartz

GLOBAL PART NUMBER INFORMATION															
Global Part Number: <b>QFX25003KR4GGKWS</b>															
Global Part Number Description: <b>QFX 2.5M 10 % 0/- 250 ppm/°C 40 Au Au K WS</b>															
<b>Q</b>	<b>F</b>	<b>X</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>K</b>	<b>R</b>	<b>4</b>	<b>G</b>	<b>G</b>	<b>K</b>	<b>W</b>	<b>S</b>
MODEL	RESISTANCE	RESISTANCE MULTIPLIER CODE	TOL. CODE (%)	TCR (ppm/°C)	SIZE	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE						
<b>QFX</b> High value TaN on Quartz	First 4 digits are significant figures of resistance	<b>2</b> = 100 <b>3</b> = 1000 <b>4</b> = 10 000	<b>B</b> = 0.1 <b>C</b> = 0.25 <b>D</b> = 0.5 <b>F</b> = 1.0 <b>G</b> = 2.0 <b>J</b> = 5.0 <b>K</b> = 10.0	<b>E</b> = ± 25 <b>C</b> = ± 50 <b>K</b> = ± 100 <b>M</b> = ± 250 <b>W</b> = ± 350 <b>R</b> = 0/- 250 <b>P</b> = 0/- 350 <b>I</b> = 0/- 200	<b>3</b> = 30 x 30 <b>4</b> = 40 x 40 <b>5</b> = 55 x 55	<b>G</b> = Au <b>A</b> = Al	<b>G</b> = Au <b>N</b> = None	<b>H</b> = Class H <b>K</b> = Class K	<b>WS</b> = Waffle pack 100 min., 1 mult						



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