Technical Bulletin No. 7

Specifications for Fil-Tech QI8010 Gold Quartz Crystals

Fil-Tech's quartz crystals are designed to exactly replace original equipment manufacturers' crystals to insure trouble-free operation. In spite of this, Fil-Tech will often tighten the OEM's specification to enhance crystal performance. The following specifications are used in evaluating a crystal:

A) Physical Characteristics	Fil-Tech QI8010
1) Sensor material	Single crystal Alpha Quartz
2) Angle of Cut[1]	35°15' (AT)
3) Contour	3 +/-0.5 diopter Plano-Convex
4) Surface Roughness	10 micron
5) Diameter	0.550" (13.97 mm)
6) Electrode	Gold/Chromium
B) Electrical Characteristics[2]	
1) Resonant Frequency (MHz)	5.975-5.993
2) Resistance at Resonance	<15 Ohms
3) Contact Resistance	<15 Ohms

1. The true angle of cut varies as a function of the contour. The true angle for this configuration crystal is actually 35 degrees 16 minutes.
2. Fil-Tech values are actual quality assurance specifications. Fil-Tech 100% inspects all crystals using 10 electrical parameters and cosmetic criteria. A detailed histogram of Fil-Tech lot measurements is also available upon request.

Note: Fil-Tech believes that high-level inspections are required to maintain the high quality crystal production demanded by our end users. In addition to the electrical and physical parameters listed above, Fil-Tech also measures motional capacitance and inductance, spurious resonance separation, and static capacitance to help track subtle changes in incoming quartz quality and in the production process.

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