PTI
Piezo Technology, Inc.

Model XO3022-042
Temperature Compensated Crystal Oscillator

Electrical Specifications

Nominal Frequency (F_O): 100.0MHz

Frequency Stability
Initial Frequency @ 25°C with V_{TUNE} @ +2.5V_{DC}, F_O ±1.0ppm
Over Temperature, ±1.0ppm
Aging per year, ±1.0ppm, maximum
Aging over 10-years, ±5.0ppm, maximum
Aging over 30-years, ±8.0ppm, maximum

Frequency Adjustment
Method, External Voltage, 0.5V_{DC} to +4.5V_{DC}
Adjustment Tuning Range, ±8ppm, minimum
Tuning Linearity, ±10%
Modulation Bandwidth, >1KHz
Input Impedance, >10KΩ
Slope, Negative

Output (Sinewave)
Level, 0dBm, ±2dB
Load, 50Ω, ±10%

SSB Phase Noise (maximum)
-75dBc/Hz @ 10Hz offset
-105dBc/Hz @ 100Hz offset
-135dBc/Hz @ 1kHz offset
-145dBc/Hz @ 10kHz offset

Power Supply
Voltage, +5.0V_{DC} ±5%
Current Consumption, 3.0*mA*, maximum

Assembly Method, hand solder (non-reflowable)

Environmental

Thermal

Operating Temperature Range, -40°C to +85°C
Non-Operating Temperature Range, -64°C to +125°C
Cooling Method, Conductive cooling to mounting surface (base plate)
Non-reflowable Hermetic Device (hand solder)

Environmental (cont.)

Humidity
Up to 100% relative. This requirement can be met with the unit soldered to a host printed wiring board.

Altitude: Sea level to 70,000 feet

Vibration (survival)

Unit shall meet specified performance, after exposure to random vibration levels of 0.4g^2/Hz for 20Hz to 2000Hz for 4 hours per axis, with power applied and the output under load conditions.

Shock (survival)

Unit shall meet specified performance after exposure to 40g's, 15-millisecond pulse (pulse shape optional). Shock pulse shall be applied at least 3 times in each direction along each of the 3 orthogonal axes (6 times per axis), with power applied and the output under load conditions.

Integrity (survival)

The unit shall meet specified performance within 15-minutes after exposure to a minimum of 1,000 temperature cycles between -40°C to +90°C, minimum base plate temperature, without any failures and/or degraded performance. The temperature cycling profile shall be as indicated in Figure 1.0. When tests are run, power will be applied and the output will be under load conditions, performance shall be monitored every 200 cycles for signs of physical damage.

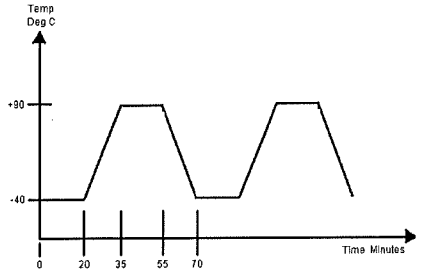

Figure 1.0 Integrity Test Temperature Profile

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Environmental (cont.)

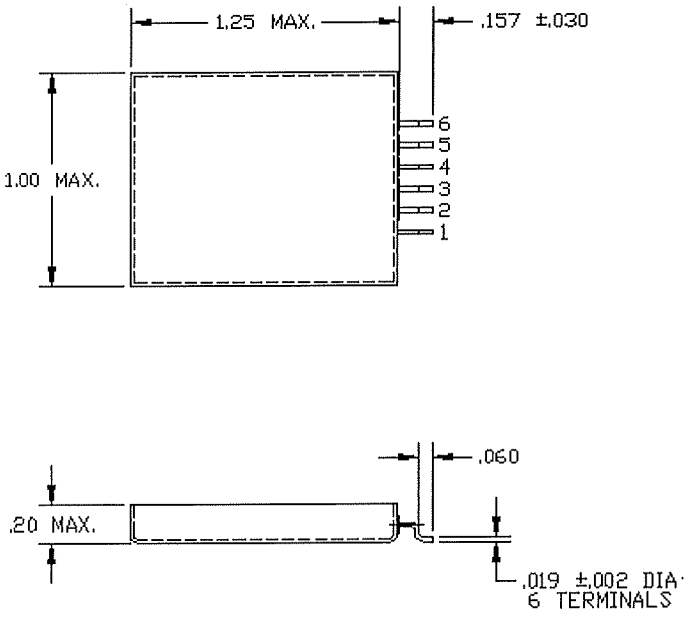
Acceleration Sensitivity: 2ppb/g

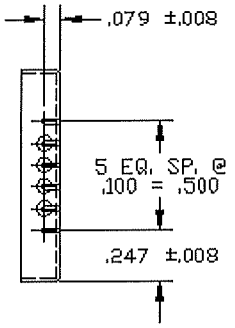
Manufacturing Environment
Unit shall meet specified performance after exposure to the following cleaning and coating agents.

- Submersible in water (aqueous cleaning)
- Submersible in IPA (alcohol cleaning)

Environmental (cont.)

- Submersible in Xylene and Toulene (conformal coating prep cleaning)
- Not sensitive to Polyurethane conformal coating P/N 1138654G1 and Conap S-8 thinner (which is used with it).
- If the unit's integrity and performance is impacted by exposure to the above agents, it shall be sealed to prevent ingress of such agents.





PIN CONNECTIONS:
1. GROUND
2. V+
3. RF OUTPUT
4. N/C
5. FREQ. ADJ.
6. GROUND

TERMINAL NUMBERS SHOWN FOR REF ONLY.

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