CRYSTAL OSCILLATOR SPECIFICATION

This specification defines the operating characteristics of an ovenized crystal oscillator. Long term stability is assured through use of premium components.

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION OF REVISION</th>
<th>BY</th>
<th>APV</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td></td>
<td>ADB</td>
<td>JRD</td>
<td>10-14-1998</td>
</tr>
<tr>
<td>A</td>
<td>Put on new form, Added 2.5., 2.7. was TBD, In 3.1. 4x10^-7 was 3x10^-7, 4.2. was 250 mA, 4.3. was 1 Watt, 7.3. was 125-501</td>
<td>TST</td>
<td>TST</td>
<td>02-28-2002</td>
</tr>
</tbody>
</table>
1. OUTPUT
1.1. Frequency 10.000 MHz
1.2. Waveform Sine wave
1.3. Level +8 ±2 dBm
1.4. Load 50 Ω
1.5. Harmonics < -30 dBc
1.6. Spurious < -60 dBc

2. FREQUENCY STABILITY
2.1. Ambient < ±2x10^{-8} from -30°C to +70°C (referenced to +25°C)
2.2. Aging
   a. At time of shipment < 5x10^{-10}/day
   b. After indefinite storage
      i. Daily < ±5x10^{-10} after 30 days
      ii. Yearly < 1x10^{-7}
      iii. 10 years < 3x10^{-7}
2.3. Voltage < ±5x10^{-9}/±5% change
2.4. Load < ±5x10^{-9}/±5% change
2.5. Short term < 5x10^{-11}/second root Allan variance
2.6. Warm-up < ±2x10^{-8} in 5 minutes @ +25°C (referenced to 4 hours)
2.7. Phase noise
   a. @ 10 Hz < -120 dBc
   b. @ 100 Hz < -135 dBc
   c. @ 1 kHz < -150 dBc
   d. @ 10 kHz < -150 dBc
   e. @ 100 kHz < -150 dBc

3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
3.1. Range > ±4x10^{-7}
   < ±9x10^{-7} (At time of shipment)
   (Referenced to nominal frequency)
3.2. Control 0 VDC to Vref (+8 VDC) or
   a 10 kΩ potentiometer connected between the "REFERENCE VOLTAGE" pin
   and "0 VOLTS & CASE" pin with wiper connected to "VCO INPUT" pin.
3.3. Slope Positive
3.4. Center +4 VDC ±0.8 VDC
   (control voltage at which nominal frequency occurs at time of shipment)
3.5. Input impedance > 100 kΩ
4. INPUT POWER (PIN = "+VDC")
   4.1. Voltage +12 VDC ±5%
   4.2. Current < 300 mA @ turn on
   4.3. Steady state < 1.5 Watts @ +25°C

5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output
   5.1. Voltage +8 VDC ±5%
   5.2. Load > 8 kΩ
   5.3. Temperature stability < ±0.015 VDC
       (Over temperature range in 2.1.)

6. ENVIRONMENTAL
   6.1. Humidity MIL-STD-202F, Method 103B, Test Condition A (95% R.H. @ +40°C, non-condensing, 96 hours)
   6.2. Storage temperature -50°C to +85°C
   6.3. Vibration (non-operating) MIL-STD-202F Method 201A. (0.06" Total p-p, 10 to 55 Hz)
   6.4. Shock (non-operating) MIL-STD-202F, Method 213B, Test Condition J.
       (30 g, 11 ms half-sine)
   6.5. Seal MIL-STD-202F, Method 112C, Test Condition D.

7. MECHANICAL
   7.1. Applicable series OCXO 131 series
   7.2. Model number OCXO 131-2
   7.3. Outline drawing 125-587

NOTE: This specification differs from the OCXO 131-2 listed in the ISOTEMP catalogue in the following areas. 1. The turn on current is 50 mA higher. 2. The steady state power is 0.5 Watts higher. 3. The width is 0.01 inches wider. 4. The length is 0.06 inches longer.
### PIN CONNECTIONS

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
<th>TOLERANCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCO INPUT</td>
<td>UNLESS OTHERWISE SPECIFIED:</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td>ANGLES: ±1 DEGREE</td>
</tr>
<tr>
<td></td>
<td>NOT CONNECTED</td>
<td>FRACTIONS: ±1/32 INCH</td>
</tr>
<tr>
<td></td>
<td>(See Note 1)</td>
<td>DECIMALS: .XX ±.015, .XXX ±.010 INCHES</td>
</tr>
<tr>
<td>2</td>
<td>REFERENCE VOLTAGE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOT CONNECTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(See Note 1)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>+VDC</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>R. F. OUTPUT</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0 VOLTS &amp; CASE</td>
<td></td>
</tr>
</tbody>
</table>

Note 1. If the specification does not specify parameters for either PIN1 or PIN2 then that respective PIN is NOT internally CONNECTED.