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>DSN. BY</th>
<th>APV. BY</th>
<th>DATE</th>
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<td>-</td>
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<td>BTG</td>
<td>TST</td>
<td>03-04-2006</td>
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<tr>
<td>A</td>
<td>Put on new form, added RoHS</td>
<td>JTL</td>
<td>TST</td>
<td>08-12-2011</td>
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</table>

1. OUTPUT (PIN = "R.F. OUTPUT")
   1.1. Frequency 10.000000 MHz
   1.2. Waveform Rectangular
   1.3. Level HCMOS
      a. "1" level > Vcc - 0.5 V
      b. "0" level < +0.3 V
   1.4. Load 5 HCMOS loads
   1.5. Duty cycle 40% to 60% @ 50% level
   1.6. Rise/fall time < 10 ns (10% to 90%)
   1.7. Spurious < -60 dBc

2. FREQUENCY STABILITY
   2.1. Ambient < ±1x10^-8, -20°C to +70°C
         (referenced to +25°C)
   2.2. Aging
      a. At time of shipment < ±1x10^-9/day
      b. After indefinite storage
         i. Daily < ±1x10^-9 after 30 days
         ii. Yearly < ±1x10^-7
         iii. 10 years < ±4x10^-7
   2.3. Voltage < ±3.5x10^-9/±5% change
   2.4. Short term < 2x10^-11/second
         root Allan variance
   2.5. Warm-up < ±1x10^-7 in 15 minutes
         (referenced to 1 hour)
   2.6. Phase Noise
      a. @ 100 Hz < -140 dBc
      b. @ 10 kHz < -150 dBc
3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
   3.1. Range > ±5x10⁻⁷
       < ±1x10⁻⁶ (At time of shipment)
       (Referenced to nominal frequency)
   3.2. Control 0 to +5 V
   3.3. Slope Positive
   3.4. Center Voltage +2.5 ±0.3 V
       (Control voltage at which nominal frequency occurs at time of shipment)
   3.5. Linearity < ±10%
   3.6. Input impedance > 50 kΩ

4. INPUT POWER (PIN = "+VDC")
   4.1. Voltage +5 V ±5%
   4.2. Current < 800 mA @ turn on
   4.3. Steady state < 1.25 Watts @ +25°C

5. RoHS
   All units supplied under this MODEL NUMBER are RoHS compliant.

6. MECHANICAL(Outline drawing)
   6.1. Applicable series OCXO 131 series
   6.2. Model number OCXO 131-1003
   6.3. Outline drawing 125-587
### PIN CONNECTIONS

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCO INPUT or Reference Voltage</td>
<td>(See Note 1)</td>
</tr>
<tr>
<td>2</td>
<td>OVEN MONITOR or NOT CONNECTED</td>
<td>(See Note 1)</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>
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</tbody>
</table>

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

### TOLERANCES

- UNLESS OTHERWISE SPECIFIED:
  - ANGLES: ±1 DEGREE
  - FRACTIONS: ±1/32 INCH
  - DECIMALS: XX ± .015, XXX ± .010 INCH
- MATERIAL: STEEL
- FINISH: NICKEL
- MARK: LABEL

### MARKING

- MOD: [Modification]
- FREQ.: [Frequency]
- S/N: [Serial Number]
- DATE: [Date]

### DRAWING Information

- NAME: OUTLINE DRAWING
- (TCXO 141 & OCXO 131 SERIES)
- CODE I.D. NO.: 31785
- SCALE: 1:1
- DATE: 12-04-2000
- DWN. BY: LRB
- APPRD. BY: DAG

### OSCILLATORS

- Made in Charlottesville, Virginia USA
- Form NO. 120-081E
- SH: 1 OF 1
- REV. C