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>
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<tbody>
<tr>
<td></td>
<td></td>
<td>TST</td>
<td>TST</td>
<td>12-11-2000</td>
</tr>
<tr>
<td>A</td>
<td>7.3. was 125-543. 1.5. was 40% to 60%.</td>
<td>BTG</td>
<td>TST</td>
<td>01-20-2004</td>
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<tr>
<td>B</td>
<td>7.3. was 125-569.</td>
<td>LRB</td>
<td>JRD</td>
<td>04-07-2005</td>
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</table>
1. OUTPUT
   1.1. Frequency 10.000 MHz
   1.2. Waveform Rectangular
   1.3. Level HCMOS
   1.4. Load 20 pF
   1.5. Duty cycle 45% to 55% @ +2.5 VDC
   1.6. Spurious < -60 dBc

2. FREQUENCY STABILITY
   2.1. Ambient < ±2x10^-8 from 0°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 < ±3.5x10^-7
   2.3. Voltage < ±1x10^-8/±5% change
   2.4. Warm-up < ±1x10^-8 in 3 minutes @ +25°C (referenced to 4 hours)
   2.5. Phase noise
      a. @ 10 Hz < -115 dBc
      b. @ 100 Hz < -135 dBc

3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
   3.1. Range > ±4x10^-7
      < ±10x10^-7 (At time of shipment)
      (Referenced to nominal frequency)
   3.2. Control
      0 VDC to Vref (+4 VDC) or a 20 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 +2.0 VDC ±0.6 VDC (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 VDC ±5%
   4.2. Current < 700 mA @ turn on
   4.3. Steady state < 1.5 Watts @ +25°C

5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output
   5.1. Voltage +4 VDC ±5%
   5.2. Load > 4 kΩ
   5.3. Temperature stability < ±0.010 VDC
       (Over temperature range in 2.1.)

6. ENVIRONMENTAL
   6.1. Humidity MIL-STD-202, Method 103B, Test Condition A (95% R.H. @ +40°C,
       non-condensing, 240 hours)
   6.2. Storage temperature -50°C to +105°C
   6.3. Vibration (non-operating) MIL-STD-202 Method 201A. (0.06" Total p-p, 10 to 55 Hz)
   6.4. Shock (non-operating) MIL-STD-202, Method 213B, Test Condition J.
       (30 g, 11 ms half-sine)
   6.5. Seal MIL-STD-202 Method 112C, Test Condition D.

7. MECHANICAL
   7.1. Applicable series OCXO 143 series
   7.2. Model number OCXO 143-3
   7.3. Outline drawing 125-606

NOTE: This unit is available with Sine wave output as OCXO 143-2.
## OSCILLATORS

**Form NO. 120-081E**

Charlottesville, Virginia USA

**NAME:** OUTLINE DRAWING  
**(OCXO 143 SERIES)**

**P/N:**  
**MOD:**  
**FREQ.:**  
**S/N:**  
**DATE:**  
**FSC:** 31785

**SHT:** 1 OF 1  
**REV:** -

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### PIN CONNECTIONS

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
</tr>
</thead>
</table>
| 1 (See Note 1) | VCO INPUT  
**NOT CONNECTED** |
| 2 (See Note 1) | REFERENCE VOLTAGE  
**NOT CONNECTED** |
| 3 | +VDC |
| 4 | R.F. OUTPUT |
| 5 | 0 VOLTS & CASE |

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

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**DIMENSIONS**

- **DIA. PIN:** 0.026 / 0.35 / 0.59 MAX.  
- **DIA. PIN (5 PLACES):** 0.030 / 0.75 / 14.99 MIN.  
- **GLASS STANDOFF:** (4 PLACES)  
- **DRAWN BY:** DAG  
- **APPR'D. BY:** TST

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**TOLERANCES**

- **ANGLES:** ±1 DEGREE  
- **FRACTIONS:** ±1/32 INCH  
- **DECIMALS:** XX ± .015, XXX ± .010 INCH

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**MATERIAL:** STEEL  
**FINISH:** NICKEL

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**MARK:** LABEL

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**DEFINITIONS**

- **INCH**  
- **MILLIMETER** (REFERENCE ONLY)

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**REFERENCES**

- **S/N:**  
- **DATE:**  
- **FSC:**  
- **FREQ.:**  
- **P/N:**  
- **MOD:**  
- **DWN. BY:** DAG  
- **APPR'D. BY:** TST