CRYSTAL OSCILLATOR SPECIFICATION

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

REV.	DESCRIPTION OF REVISION	DWN. BY	APV. BY	DATE
-		JX	TST	03-24-2010

1. OUTPUT(PIN = "R.F. OUTPUT")
   - 1.1. Frequency: 10.000000 MHz
   - 1.2. Initial Accuracy: < $\pm 1 \times 10^{-6}$
     - a. @ Temperature: +25 ±1°C
     - b. After time on power: 30 ±5 minutes
     - c. Within time period following date code: ≤ 90 days
     - d. @ VCO Input voltage: +2.5 ±0.001 V
   - 1.3. Waveform: Rectangular
   - 1.4. Level: HCMOS
     - a. "1" level: > +3.5 V
     - b. "0" level: < +0.5 V
   - 1.5. Load: 15 pF
   - 1.6. Duty cycle: 45% to 55%@ +2.0 V
   - 1.7. Spurious: < -60 dBc

2. FREQUENCY STABILITY
   - 2.1. Ambient

Temperature \ Stability	< $\pm 3 \times 10^{-8}$	< $\pm 5 \times 10^{-8}$	< $\pm 1 \times 10^{-7}$	< $\pm 2 \times 10^{-7}$
0°C ~ +50°C	OCXO147-1000	OCXO147-1001		
0°C ~ +70°C	OCXO147-1002	OCXO147-1003	OCXO147-1004	
-30°C ~ +70°C		OCXO147-1005	OCXO147-1006	OCXO147-1007
	Model Number			

   - 2.2. Aging
     - a. At time of shipment: < $\pm 5 \times 10^{-9}$/day
     - b. After indefinite storage
       - i. Daily: < $\pm 5 \times 10^{-9}$ after 30 days
       - ii. Yearly: < $\pm 5 \times 10^{-7}$
       - iii. 10 years: < $\pm 3 \times 10^{-6}$
   - 2.3. Voltage: < $\pm 5 \times 10^{-8}$/±5% change
   - 2.4. Short term: < 1×10^{-10}/1 second root Allan variance
   - 2.5. Warm-up: < $\pm 1 \times 10^{-7}$ in 2 minutes @ +25 ±1°C (referenced to 1 hour)
   - 2.6. Phase Noise
     - a. @ 10 Hz: < -100 dBc
     - b. @ 100 Hz: < -130 dBc
     - c. @ 1 kHz: < -145 dBc
     - d. @ 10 kHz: < -150 dBc

3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

3.1. Range	> $\pm 5 \times 10^{-6}$
	Referenced to frequency at nominal Center Voltage
3.2. Control	0 to +5 V
3.3. Slope	Positive
3.4. Center Voltage	+2.5 V
3.5. Linearity	< ±10%
3.6. Input impedance	> 50 kΩ

4. INPUT POWER (PIN = "+VDC")

4.1. Voltage	+5.0 V ±5%
4.2. Current	< 400 mA @ turn on
4.3. Steady state	< 0.6 Watts @ +25°C

5. ENVIRONMENTAL

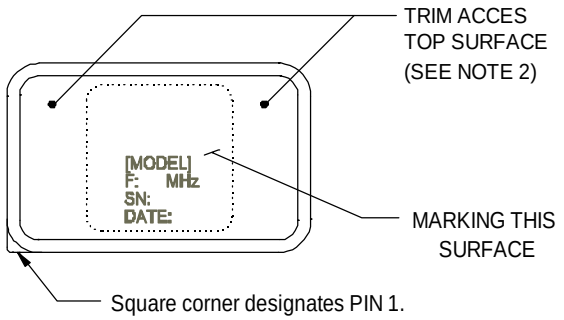
5.1. Storage temperature	-40°C to +85°C
5.2. Vibration (non-operating)	MIL-STD-202, Method 201 (0.06" Total p-p, 10 to 55 Hz)
5.3. Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J (30 g, 11 ms half-sine)

6. RoHS

All units supplied under this MODEL NUMBER are RoHS compliant.

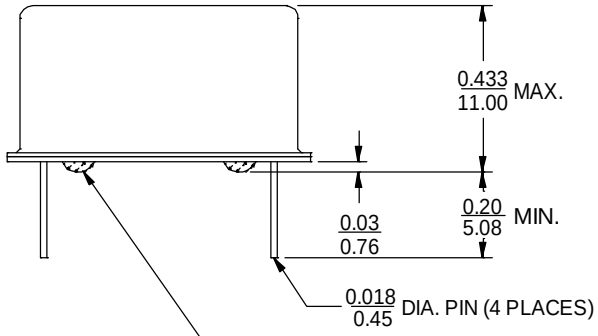
7. MECHANICAL(Outline drawing)

7.1. Applicable series	OCXO 147 series
7.2. Model number	See Paragraph 2.1.
7.3. Outline drawing	125-630



(VIEW FROM TOP)

PIN CONNECTIONS	
PIN	FUNCTION
1 (See Note 1)	VCO INPUT or NOT CONNECTED
7	0 VOLTS & CASE
8	R.F. OUTPUT
14	+VDC

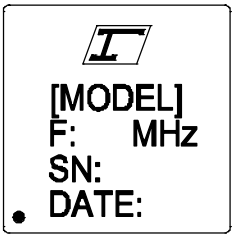


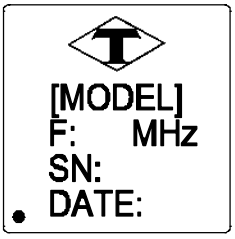
Notes:

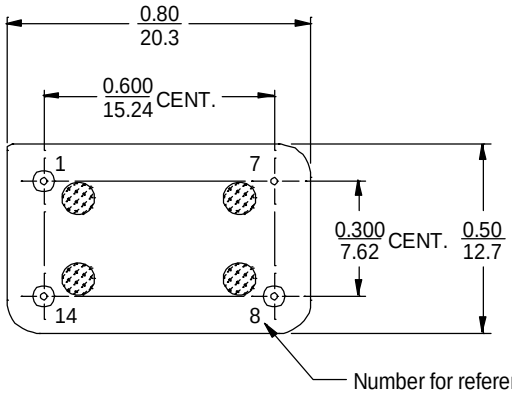
1. If the specification does not specify parameters for PIN 1 then PIN 1 is not internally CONNECTED.

2. If the specification does not specify parameters for "MECHANICAL FREQUENCY ADJUSTMENT" then there is no Trim Access.

MARKING







(VIEW FROM BOTTOM)

INCH / mm (REFERENCE ONLY)

Form NO. 120-081E

ISOTEMP RESEARCH INC. — OSCILLATORS — Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(TCXO 128 SERIES/OCXO 147 SERIES)

CODE I.D. NO.	SCALE: 2:1	DATE: 10-19-2006
31785	DWN. BY: BTG	APPR'D. BY: BTG

DWG: 125-630
REV: B
SHT: 1 OF 1

LET	REVISION	BY	APP	DATE
A	UPDATED MARKING.	BTG	JRD	03-05-2008
B	UPDATED MARKING.	BTG	TST	03-09-2010

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