

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 <math>< \pm 1 \times 10^{-6}</math>
 - a. @ Temperature +25 \pm 1°C
 - b. After time on power 30 \pm 5 minutes
 - c. Within time period \leq 90 days following date code
 - d. @ VCO Input voltage +2.5 \pm 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 <math>< -60</math> dBc

2. FREQUENCY STABILITY

2.1. Ambient


Stability Temperature	<math>< \pm 3 \times 10^{-8}</math>	<math>< \pm 5 \times 10^{-8}</math>	<math>< \pm 1 \times 10^{-7}</math>	<math>< \pm 2 \times 10^{-7}</math>
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 <math>< \pm 5 \times 10^{-9}</math>/day
- b. After indefinite storage
 - i. Daily <math>< \pm 5 \times 10^{-9}</math> after 30 days
 - ii. Yearly <math>< \pm 5 \times 10^{-7}</math>
 - iii. 10 years <math>< \pm 3 \times 10^{-6}</math>
- 2.3. Voltage <math>< \pm 5 \times 10^{-8}</math>/ \pm 5% change
- 2.4. Short term <math>< 1 \times 10^{-10}</math>/1 second root Allan variance
- 2.5. Warm-up <math>< \pm 1 \times 10^{-7}</math> in 2 minutes @ +25 \pm 1°C (referenced to 1 hour)

2.6. Phase Noise

- a. @ 10 Hz <math>< -100</math> dBc
- b. @ 100 Hz <math>< -130</math> dBc
- c. @ 1 kHz <math>< -145</math> dBc
- d. @ 10 kHz <math>< -150</math> dBc

	OUR PERFORMANCE YOUR REPUTATION	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
		OCXO 147-1000 ~ 147-1007	1	2	114-1385	-

- 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 < $\pm 10\%$
 - 3.6. Input impedance > 50 k Ω


- 4. INPUT POWER (PIN = "+VDC")
 - 4.1. Voltage +5.0 V $\pm 5\%$
 - 4.2. Current < 400 mA @ turn on
 - 4.3. Steady state < 0.6 Watts @ +25°C

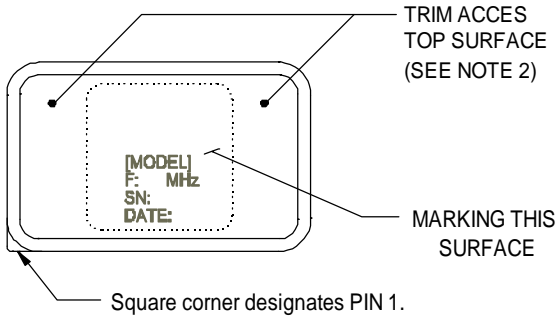
- 5. ENVIRONMENTAL
 - 5.1. Storage temperature -40°C to +85°C
 - 5.2. Vibration (non-operating) MIL-STD-202, Method 201 (0.06" Total p-p, 10 to 55 Hz)
 - 5.3. Shock (non-operating) MIL-STD-202, Method 213, Test Condition J (30 g, 11 ms half-sine)

- 6. RoHS

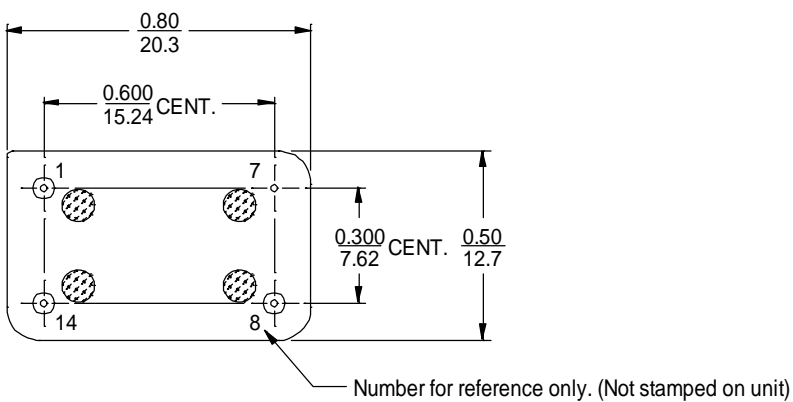
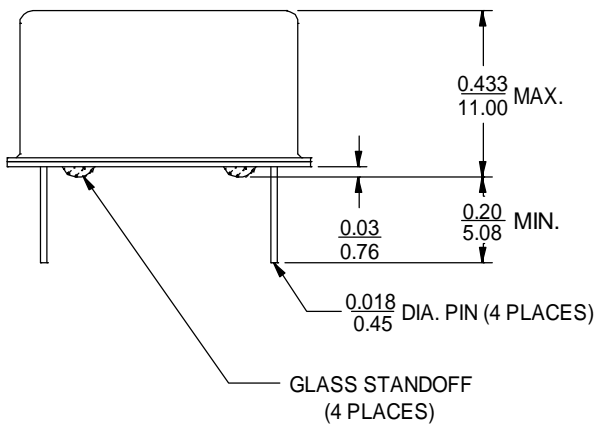
All units supplied under this MODEL NUMBER are RoHS compliant.

- 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

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(VIEW FROM TOP)



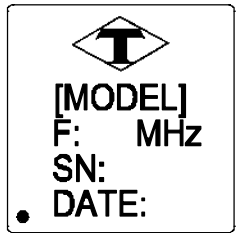
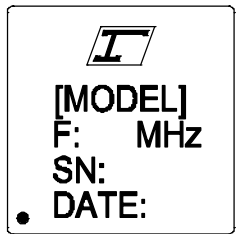
(VIEW FROM BOTTOM)

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



INCH
mm (REFERENCE ONLY)

Form NO. 120-081E

		OSCILLATORS			Charlottesville, Virginia USA		
NAME: OUTLINE DRAWING (TCXO 128 SERIES/OCXO 147 SERIES)		CODE I.D. NO. 31785		SCALE: 2:1 DWN. BY: BTG		DATE: 10-19-2006 APPR'D. BY: BTG	
A	UPDATED MARKING.	BTG	JRD	03-05-2008	TOLERANCES UNLESS OTHERWISE SPECIFIED: ANGLES: ±1 DEGREE FRACTIONS: ±1/32 INCH DECIMALS: .XX ± .015, .XXX ± .010 INCH		DWG: 125-630 REV: B SHT: 1 OF 1
B	UPDATED MARKING.	BTG	TST	03-09-2010			
					MATERIAL: STEEL		
					FINISH: NICKEL		
LET	REVISION	BY	APP	DATE	MARK: LABEL		