

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
-		JTL	TST	08-24-2011

1. OUTPUT(PIN = "R.F. OUTPUT")

1.1. Frequency	13.000000 MHz
1.2. Initial Accuracy	< $\pm 2 \times 10^{-7}$
a. @ Temperature	+25 $\pm 1^\circ\text{C}$
b. After time on power	30 ± 5 minutes
c. Within time period following date code	≤ 90 days
d. @ VCO Input voltage	+2 ± 0.001 V
1.3. Waveform	Rectangular
1.4. Level	HCMOS
a. "1" level	> $V_{cc} - 0.6$ V
b. "0" level	< +0.4 V
1.5. Load	15 pF
1.6. Duty cycle	45% to 55% @ +2.5 V
1.7. Spurious	< -60 dBc

2. FREQUENCY STABILITY

2.1. Ambient	< $\pm 1 \times 10^{-8}$, 0°C to $+70^\circ\text{C}$ (referenced to $+25^\circ\text{C}$)
2.2. Aging	
a. At time of shipment	< $\pm 1 \times 10^{-9}$ /day
b. After indefinite storage	
i. Daily	< $\pm 1 \times 10^{-9}$ after 30 days
ii. Yearly	< $\pm 1 \times 10^{-7}$
iii. 10 years	< $\pm 4 \times 10^{-7}$
2.3. Voltage	< $\pm 1.5 \times 10^{-8}$ / $\pm 5\%$ change
2.4. Short term	< 5×10^{-11} / second root Allan variance
2.5. Load	< $\pm 5 \times 10^{-9}$ / $\pm 5\%$ change
2.6. Warm-up	< $\pm 2 \times 10^{-8}$ in 5 minutes @ $+25^\circ\text{C}$ (referenced to 1 hour)
2.7. Phase Noise	
a. @ 1 Hz	< -80 dBc
b. @ 10 Hz	< -120 dBc
c. @ 100 Hz	< -140 dBc
d. @ 1 kHz	< -145 dBc
e. @ 10 kHz	< -150 dBc

	OUR PERFORMANCE	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	YOUR REPUTATION	OCXO 143-1002	1	2	114-1480	-

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

- 3.1. Range > $\pm 8 \times 10^{-7}$
< $\pm 2 \times 10^{-6}$

Referenced to frequency at nominal Center Voltage

- 3.2. Control 0 to +4 V
- 3.3. Slope Positive
- 3.4. Center Voltage +2 V

NOTE: When not connected, VCO INPUT is internally held at this voltage.

- 3.5. Linearity < $\pm 10\%$
- 3.6. Input impedance > 100 k Ω

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

- 4.1. Voltage +5 V $\pm 5\%$
- 4.2. Current < 850 mA @ turn on
- 4.3. Steady state < 1.5 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)

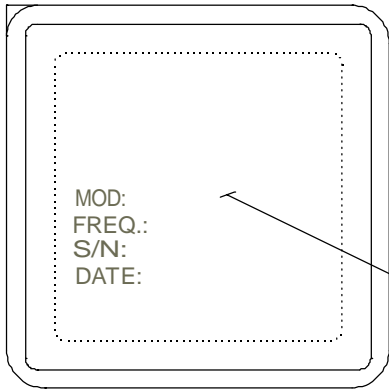
6. RoHS

All units supplied under this MODEL NUMBER are RoHS compliant.

7. MECHANICAL(Outline drawing)

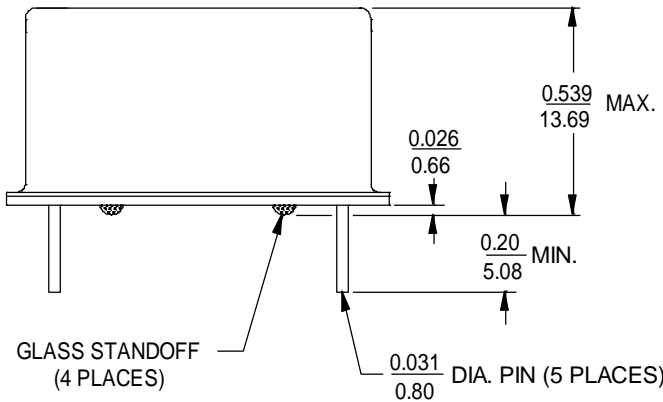
- 7.1. Applicable series OCXO 143 series
- 7.2. Model number OCXO 143-1002
- 7.3. Outline drawing 125-608

	OUR PERFORMANCE YOUR REPUTATION	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
		OCXO 143-1002	2	2	114-1480	-



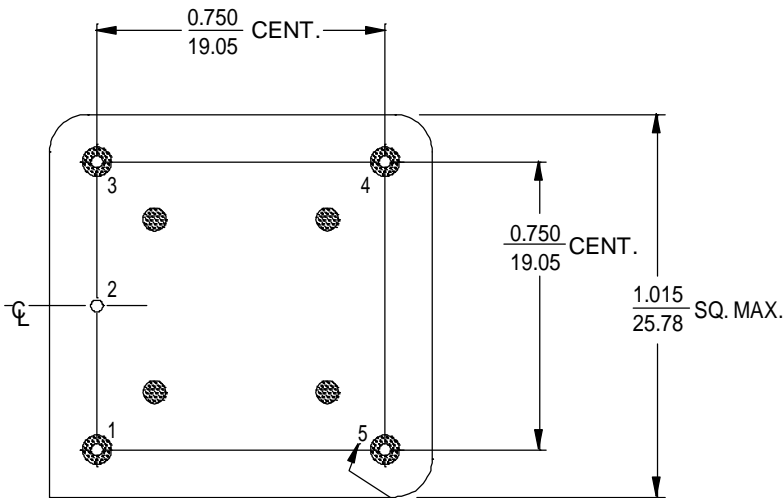
(VIEW FROM TOP)

MARKING THIS SURFACE



GLASS STANDOFF (4 PLACES)

0.031 DIA. PIN (5 PLACES)



(VIEW FROM BOTTOM)

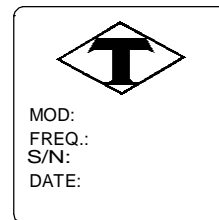
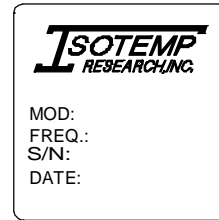
NUMBERS FOR REFERENCE ONLY (NOT STAMPED ON UNIT)

PIN CONNECTIONS

PIN	FUNCTION
1	R. F. OUTPUT
2	0 VOLTS & CASE
3 (See Note 1)	VCO INPUT or NOT CONNECTED
4 (See Note 1)	REFERENCE VOLTAGE or NOT CONNECTED
5	+VDC

Note 1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is NOT internally CONNECTED.

MARKING



$\frac{\text{INCH}}{\text{mm}}$ (REFERENCE ONLY)

Form NO. 120-081E



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(OCXO 143 SERIES)

CODE I.D. NO.

31785

SCALE: 2:1

DWN. BY: LRB

DATE: 09-09-2002

APPR'D. BY: TST

A	0.539/ 13.69 MAX. WAS 0.55/ 13.97 MAX.	DAG	BTG	10-27-2003	TOLERANCES UNLESS OTHERWISE SPECIFIED: ANGLES: ±1 DEGREE FRACTIONS: ±1/32 INCH DECIMALS: .XX ± .015, .XXX ± .010 INCH MATERIAL: STEEL FINISH: NICKEL MARK: LABEL
B	UPDATED MARKING.	BTG	TST	02-13-2009	
LET	REVISION	BY	APP	DATE	

DWG: 125-608
REV: B
SHT: 1 OF 1