

**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	08-15-2011

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


- 1.1. Frequency 10.000000 MHz
- 1.2. Initial Accuracy <  $\pm 1 \times 10^{-7}$ 
  - a. @ Temperature +25  $\pm 1^\circ\text{C}$
  - b. After time on power 30  $\pm 5$  minutes
  - c. Within time period following date code  $\leq 90$  days
  - d. @ VCO Input voltage +2.0  $\pm 0.001$  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 15pF
- 1.6. Duty cycle 40% to 60% @ +2.5 V
- 1.7. Spurious < -60 dBc

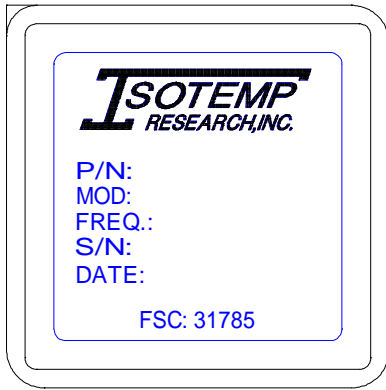
2. FREQUENCY STABILITY

- 2.1. Ambient <  $\pm 5 \times 10^{-9}$ ,  $0^\circ\text{C}$  to  $+70^\circ\text{C}$   
(referenced to  $+25^\circ\text{C}$ )
- 2.2. Aging
  - a. At time of shipment <  $\pm 5 \times 10^{-10}$ /day
  - b. After indefinite storage
    - i. Daily <  $\pm 5 \times 10^{-10}$  after 30 days
    - ii. Yearly <  $\pm 5 \times 10^{-8}$
    - iii. 10 years <  $\pm 3 \times 10^{-7}$
- 2.3. Voltage <  $\pm 5 \times 10^{-9}$  /  $\pm 5\%$  change
- 2.4. Warm-up <  $\pm 1 \times 10^{-8}$  in 5 minutes @  $+25 \pm 1^\circ\text{C}$   
(referenced to 1 hour)
- 2.5. Phase Noise
  - a. @ 10 Hz < -120 dBc
  - b. @ 100 Hz < -140 dBc
  - c. @ 1 kHz < -145 dBc

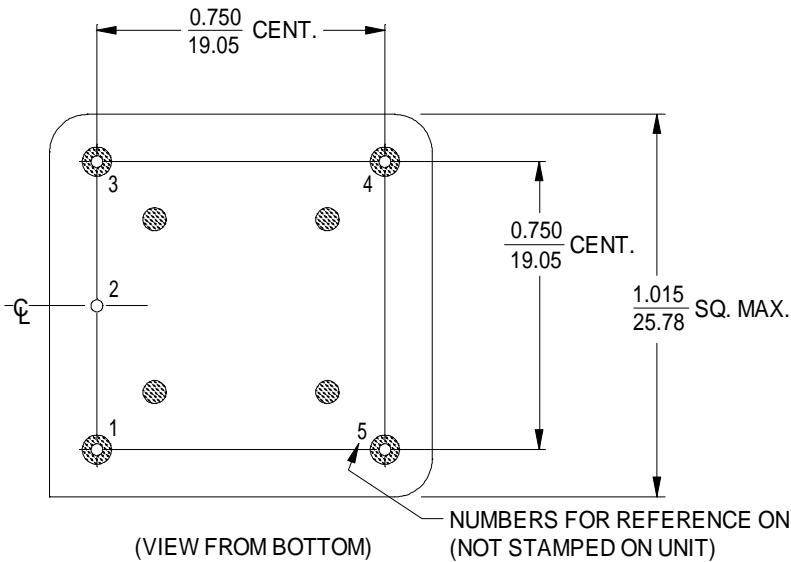
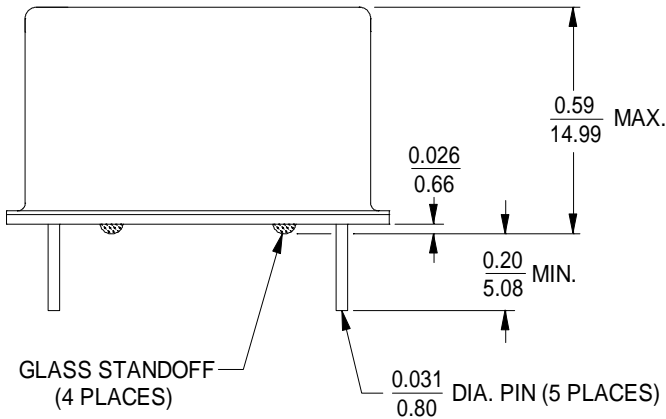
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	OCXO 143-1001	1	2	114-1474	-

- 3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
  - 3.1. Range
    - >  $\pm 4 \times 10^{-7}$
    - <  $\pm 1.2 \times 10^{-6}$
  - Referenced to frequency at nominal Center Voltage
  - 3.2. Control
    - 0 to +4.0 V
  - 3.3. Slope
    - Positive
  - 3.4. Center Voltage
    - +2.0 V
  - NOTE: When not connected, VCO INPUT is internally held at this voltage.
  - 3.5. Input impedance
    - > 50 k $\Omega$
  
- 4. INPUT POWER (PIN = "+VDC")
  - 4.1. Voltage
    - +5 V  $\pm 5\%$
  - 4.2. Current
    - < 500 mA @ turn on
  - 4.3. Steady state
    - < 1.4 Watts @ +25 $^{\circ}$ C
  
- 5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output
  - 5.1. Voltage
    - +4 V  $\pm 5\%$
  - 5.2. Load
    - > 9 k $\Omega$
  - 5.3. Temperature stability
    - <  $\pm 0.01$  V
    - (Over temperature range in 2.1)
  
- 6. ENVIRONMENTAL
  - 6.1. Storage temperature
    - 40 $^{\circ}$ C to +85 $^{\circ}$ C
  - 6.2. Vibration (non-operating)
    - MIL-STD-202F, Method 201A (0.06" Total p-p, 10 to 55 Hz)
  - 6.3. Shock (non-operating)
    - MIL-STD-202F, Method 213B, Test Condition J (30 g, 11 ms half-sine)
  
- 7. RoHS
  - All units supplied under this MODEL NUMBER are RoHS compliant.
  
- 8. MECHANICAL(Outline drawing)
  - 8.1. Applicable series
    - OCXO 143 series
  - 8.2. Model number
    - OCXO 143-1001
  - 8.3. Outline drawing
    - 125-609

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(VIEW FROM TOP)



(VIEW FROM BOTTOM)

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

Form NO. 120-081E

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.



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING  
(OCXO 143 SERIES)

CODE I.D. NO.  
**31785**

SCALE: 2:1  
DWN. BY: LRB

DATE: 09-23-2002  
APPR'D. BY: TST

TOLERANCES  
UNLESS OTHERWISE SPECIFIED:  
ANGLES: ±1 DEGREE  
FRACTIONS: ±1/32 INCH  
DECIMALS: .XX ± .015, .XXX ± .010 INCH

MATERIAL: STEEL  
FINISH: NICKEL  
MARK: LABEL

LET REVISION BY APP DATE

DWG: 125-609  
REV: -  
SHT: 1 OF 1