



Charlottesville, VA USA
www.isotemp.com

OCXO 143-1

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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	BY	APV	DATE
-		DAG	TST	09-09-1999
A	New form, 7.7.3. 125-606 was 125-502	LRB	TST	10-20-2003

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 143-1	1	3	114-918	A



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1. OUTPUT
 - 1.1. Frequency 10.000 MHz
 - 1.2. Waveform Sine wave
 - 1.3. Level +4 dBm ± 2 dBm
 - 1.4. Load 50 Ω
 - 1.5. Harmonics < -20 dBc
 - 1.6. Spurious < -60 dBc
2. FREQUENCY STABILITY
 - 2.1. Ambient < $\pm 1 \times 10^{-7}$ from 0°C to +70°C (referenced to +25°C)
 - 2.2. Aging
 - a. At time of shipment < $\pm 1 \times 10^{-8}$ /day
 - b. After indefinite storage
 - i. Daily < $\pm 1 \times 10^{-8}$ after 30 days
 - ii. Yearly < $\pm 1 \times 10^{-6}$
 - iii. 10 years < $\pm 4 \times 10^{-6}$
 - 2.3. Voltage < $\pm 3 \times 10^{-8}$ /±5% change
 - 2.4. Short term < 1×10^{-9} /1 second root Allan variance
 - 2.5. Load < $\pm 3 \times 10^{-8}$ /±5% change
 - 2.6. Warm-up < $\pm 1 \times 10^{-7}$ in 3 minutes @ +25°C (referenced to 2 hours)
 - 2.7. Phase noise
 - a. @ 10 Hz < -90 dBc
 - b. @ 100 Hz < -120 dBc
 - c. @ 1 kHz < -140 dBc
 - d. @ 10 kHz < -140 dBc
 - e. @ 100 kHz < -150 dBc
3. ELECTRICAL FREQUENCY ADJUSTMENT
 - 3.1. Range > $\pm 10 \times 10^{-6}$
< $\pm 20 \times 10^{-6}$
 - 3.2. Control 0 to +4 VDC
 - 3.3. Slope Positive
 - 3.4. Center +2 VDC ± 0.4 VDC
(control voltage at which nominal frequency occurs at time of shipment)
 - 3.5. Linearity < $\pm 10\%$
 - 3.6. Input impedance > 50 k Ω
4. INPUT POWER
 - 4.1. Voltage +5 VDC $\pm 5\%$
 - 4.2. Current < 700 mA @ turn on
 - 4.3. Steady state < 1.5 Watts @ +25°C

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5. REFERENCE VOLTAGE

- 5.1. Voltage +4 VDC $\pm 5\%$
- 5.2. Load $> 9 \text{ k}\Omega$
- 5.3. Temperature stability $< \pm 0.010 \text{ VDC}$
(Over temperature range in 2.1)

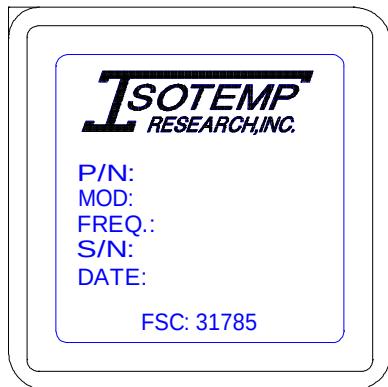
6. ENVIRONMENTAL

- 6.1. Storage temperature -55°C to $+85^{\circ}\text{C}$
- 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)
- 6.4. Seal MIL-STD-202F, Method 112C, Test Condition D.

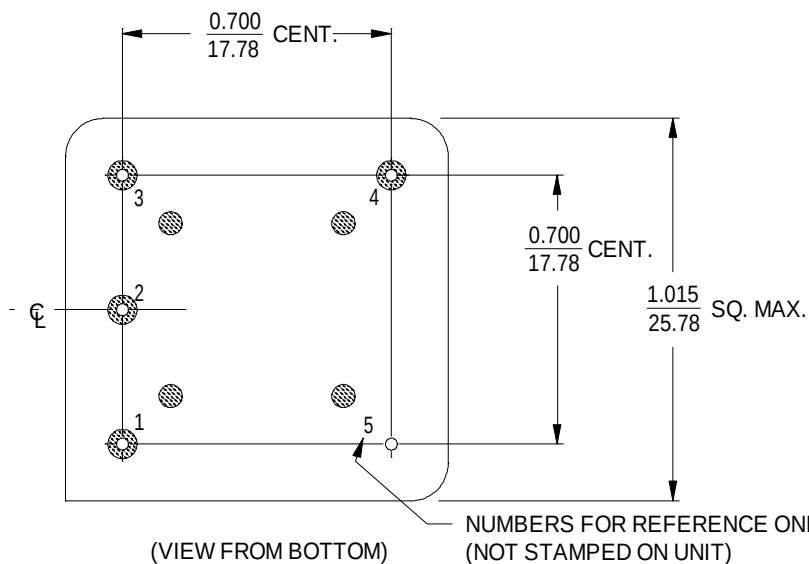
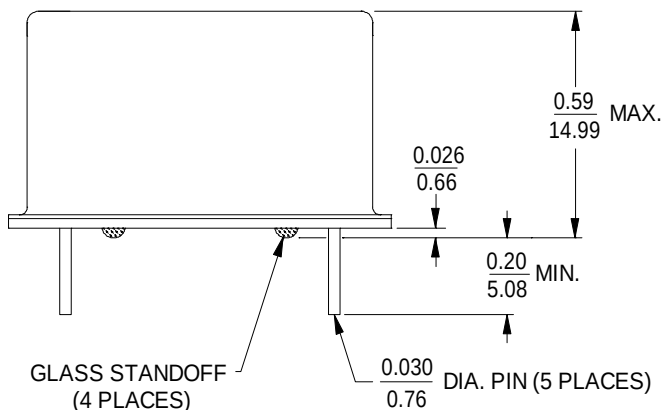
7. MECHANICAL

- 7.1. Applicable series OCXO 143 series
- 7.2. Model number OCXO 143-1
- 7.3. Outline drawing 125-606

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(VIEW FROM TOP)



(VIEW FROM BOTTOM)

PIN CONNECTIONS

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

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

INCH
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

DATE: 09-23-2002

DWN. BY: DAG

APPR'D. BY: TST

TOLERANCES

UNLESS OTHERWISE SPECIFIED:

ANGLES: ± 1 DEGREE

FRACTIONS: $\pm 1/32$ INCH

DECIMALS: .XX $\pm$.015, .XXX $\pm$.010 INCH

MATERIAL: STEEL

FINISH: NICKEL

MARK: LABEL

LET REVISION

BY APP DATE

DMG: 125-606
REV: -
SHT: 1 OF 1