ISOTEMP RESEARCH, INC.

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OCXO 143-1

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

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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	< ±10%
3.6. Input impedance	> 50 kΩ
4. INPUT POWER	
4.1. Voltage	+5 VDC ±5%
4.2. Current	< 700 mA @ turn on
4.3. Steady state	< 1.5 Watts @ +25°C

5. REFERENCE VOLTAGE

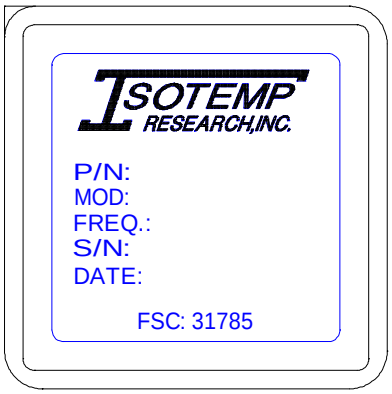
5.1. Voltage	+4 VDC ±5%
5.2. Load	> 9 kΩ
5.3. Temperature stability	< ±0.010 VDC (Over temperature range in 2.1)

6. ENVIRONMENTAL

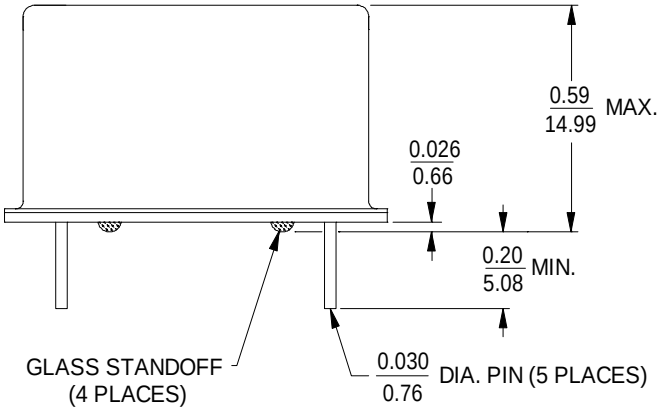
6.1. Storage temperature	-55°C to +85°C
6.2. Vibration (non-operating)	MIL-STD-202F Method 201A. (0.06" Total p-p, 10 to 55 Hz)
6.3. Shock (non-operating)	MIL-STD-202F, Method 213B, Test Condition J. (30 g, 11 ms half-sine)
6.4. Seal	MIL-STD-202F, Method 112C, Test Condition D.

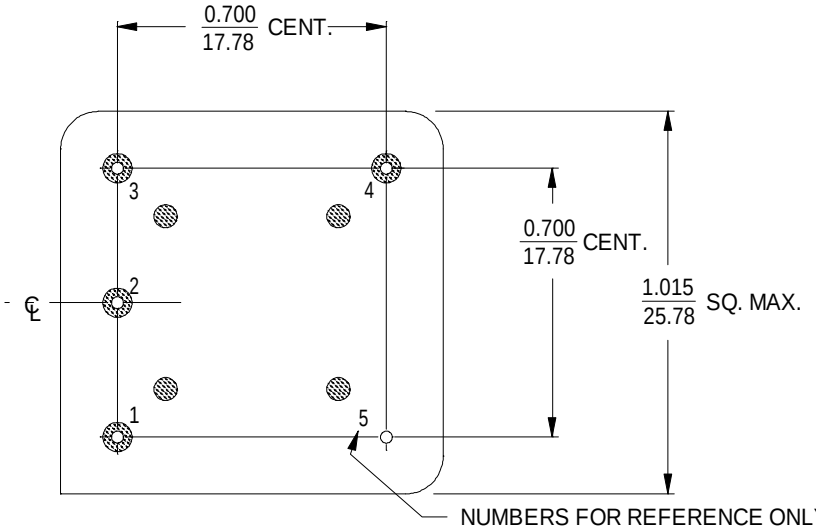
7. MECHANICAL

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



(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

ISOTEMP RESEARCH,INC. — OSCILLATORS — Charlottesville, Virgina USA

NAME: OUTLINE DRAWING
(OCXO 143 SERIES)

CODE I.D. NO.	SCALE: 2:1	DATE: 09-23-2002
31785	DWN. BY: DAG	APPR'D. BY: TST

LET	REVISION	BY	APP	DATE

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

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