ISOTEMP RESEARCH, INC.

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OCXO 143-3

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
-		TST	TST	12-11-2000
A	7.3. was 125-543. 1.5. was 40% to 60%.	BTG	TST	01-20-2004
B	7.3. was 125-569.	LRB	JRD	04-07-2005

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1. OUTPUT	
1.1. Frequency	10.000 MHz
1.2. Waveform	Rectangular
1.3. Level	HCMOS
1.4. Load	20 pF
1.5. Duty cycle	45% to 55% @ +2.5 VDC
1.6. Spurious	< -60 dBc
2. FREQUENCY STABILITY	
2.1. Ambient	< $\pm 2 \times 10^{-8}$ from 0°C to +70°C (referenced to +25°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	< $\pm 3.5 \times 10^{-7}$
2.3. Voltage	< $\pm 1 \times 10^{-8}$/±5% change
2.4. Warm-up	< $\pm 1 \times 10^{-8}$ in 3 minutes @ +25°C (referenced to 4 hours)
2.5. Phase noise	
a. @ 10 Hz	< -115 dBc
b. @ 100 Hz	< -135 dBc
3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")	
3.1. Range	> $\pm 4 \times 10^{-7}$ < $\pm 10 \times 10^{-7}$ (At time of shipment) (Referenced to nominal frequency)
3.2. Control	0 VDC to Vref (+4 VDC) or a 20 kΩ potentiometer connected between the "REFERENCE VOLTAGE" pin and "0 VOLTS & CASE" pin with wiper connected to "VCO INPUT" pin.
3.3. Slope	Positive
3.4. Center	+2.0 VDC ±0.6 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 (PIN = "+VDC")

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 (PIN = "REFERENCE VOLTAGE"), an output

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

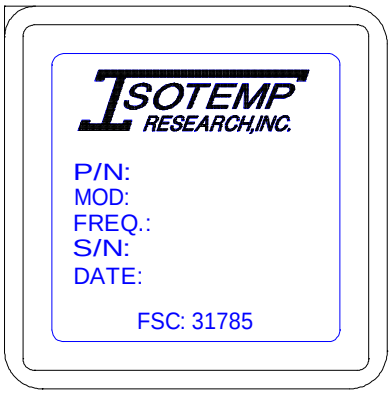
6. ENVIRONMENTAL

6.1. Humidity	MIL-STD-202, Method 103B, Test Condition A (95% R.H. @ +40°C, non-condensing, 240 hours)
6.2. Storage temperature	-50°C to +105°C
6.3. Vibration (non-operating)	MIL-STD-202 Method 201A. (0.06" Total p-p, 10 to 55 Hz)
6.4. Shock (non-operating)	MIL-STD-202, Method 213B, Test Condition J. (30 g, 11 ms half-sine)
6.5. Seal	MIL-STD-202 Method 112C, Test Condition D.

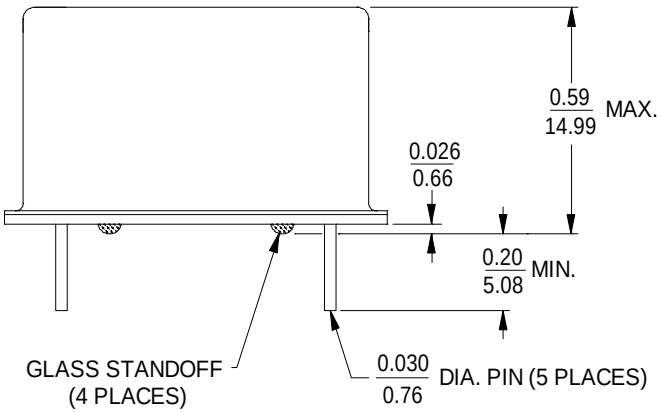
7. MECHANICAL

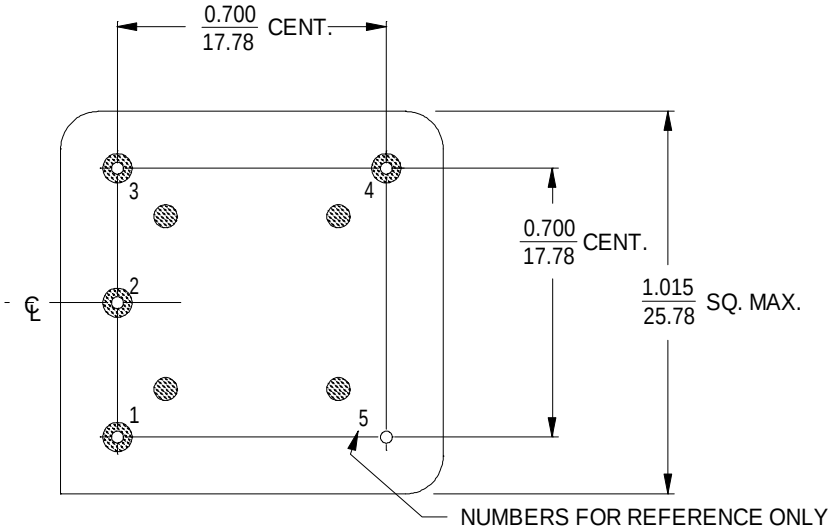
7.1. Applicable series	OCXO 143 series
7.2. Model number	OCXO 143-3
7.3. Outline drawing	125-606

NOTE: This unit is available with Sine wave output as OCXO 143-2.



(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