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	08-04-2011

1. OUTPUT (PIN = "R.F. OUTPUT")	
1.1. Frequency	10.000 MHz
1.2. Initial Accuracy	< $\pm 2 \times 10^{-7}$
a. @ Temperature	+25 ±1°C
b. After time on power	30 ±3 minutes
c. Within time period following date code	≤ 90 days
d. @ VCO Input voltage	+2.0 ±0.001 V
1.3. Waveform	Rectangular
1.4. Level	HCMOS
a. "1" level	> +4.5 V
b. "0" level	< +0.5 V
1.5. Load	15 pF
1.6. Duty cycle	40% to 60%@ +2.5 V
1.7. Spurious	< -60 dBc
2. FREQUENCY STABILITY	
2.1. Ambient	< $\pm 1 \times 10^{-8}$, 0°C to +70°C (referenced to +25°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	< $\pm 1 \times 10^{-7}$
iii. 10 years	< $\pm 4 \times 10^{-7}$
2.3. Voltage	< $\pm 2 \times 10^{-9}$/±5% change
2.4. Short term	< 5×10^{-11}/second root Allan variance
2.5. Load	< $\pm 2 \times 10^{-9}$/±10% change
2.6. Warm-up	< $\pm 1 \times 10^{-7}$ in 5 minutes @ +25 ±1°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

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

3.1. Range	> $\pm 8 \times 10^{-7}$
	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. Linearity	< ±10%
3.6. Input impedance	> 100 kΩ

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

4.1. Voltage	+5 V ±5%
4.2. Current	< 600 mA @ turn on
4.3. Steady state	< 1.4 Watts @ +25°C

5. ENVIRONMENTAL

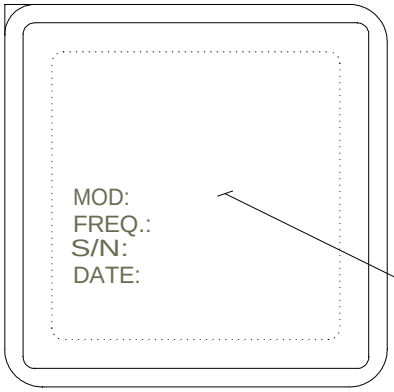
5.1. Storage temperature	-40°C to +85°C
5.2. Vibration (non-operating)	MIL-STD-202, Method 201 (0.06" Total p-p, 10 to 55 Hz)
5.3. Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J (30 g, 11 ms half-sine)

6. RoHS

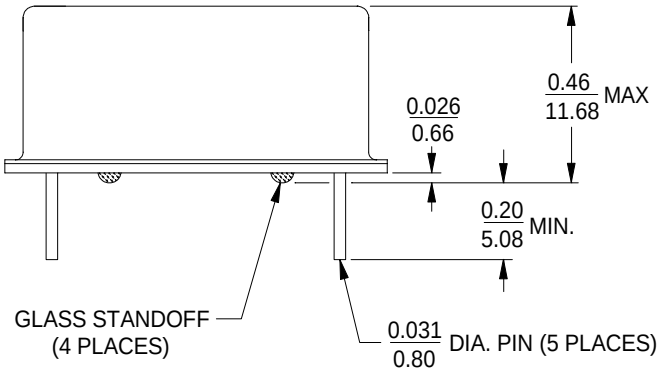
All units supplied under this MODEL NUMBER are RoHS compliant.

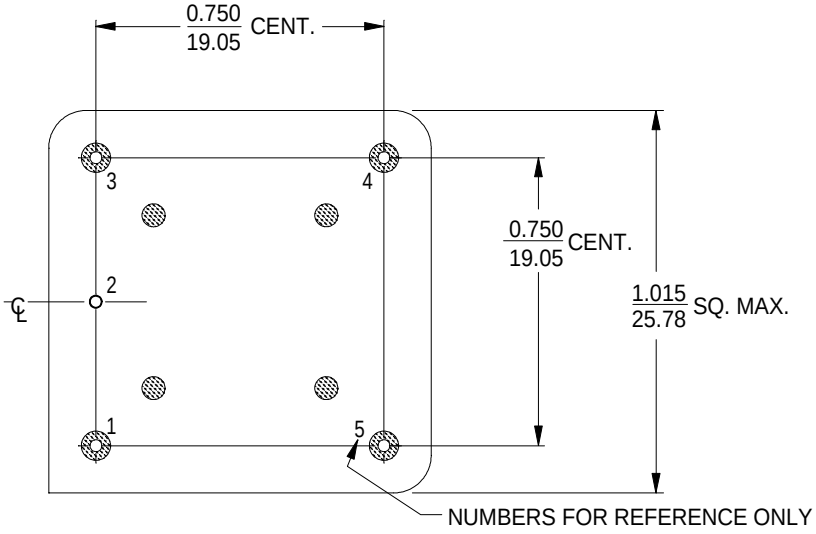
7. MECHANICAL(Outline drawing)

7.1. Applicable series	OCXO 143 series
7.2. Model number	OCXO 143-1000
7.3. Outline drawing	125-633



(VIEW FROM TOP)



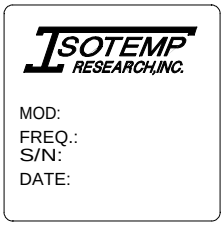


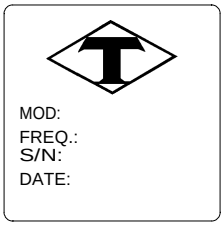
(VIEW FROM BOTTOM)

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 or OVEN MONITOR
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





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: 10-04-2007
31785	DWN. BY: BTG	APPR'D. BY: TST

LET	REVISION	BY	APP	DATE
A	UPDATED MARKINGS.	BTG	TST	07-11-2008

TOLERANCES

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

MATERIAL: STEEL

FINISH: NICKEL

MARK: LABEL

DWG: 125-633
REV: A
SHT: 1 OF 1