

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	08-24-2011

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

1.1. Frequency	13.000000 MHz
1.2. Initial Accuracy	< $\pm 2 \times 10^{-7}$
a. @ Temperature	+25 $\pm 1^\circ\text{C}$
b. After time on power	30 ± 5 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	> $V_{cc} - 0.5$ V
b. "0" level	< +0.5 V
1.5. Load	15 pF
1.6. Duty cycle	45% to 55% @ +2.5 V
1.7. Spurious	< -60 dBc

2. FREQUENCY STABILITY

2.1. Ambient	< $\pm 1 \times 10^{-8}$, 0°C to $+70^\circ\text{C}$ (referenced to $+25^\circ\text{C}$)
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	< $\pm 4 \times 10^{-7}$
2.3. Voltage	< $\pm 2 \times 10^{-9}$ / $\pm 5\%$ change
2.4. Short term	< 5×10^{-11} / second root Allan variance
2.5. Load	< $\pm 2 \times 10^{-9}$ / $\pm 10\%$ change
2.6. Warm-up	< $\pm 5 \times 10^{-8}$ in 5 minutes @ $+25 \pm 1^\circ\text{C}$ (referenced to 1 hour)
2.7. Phase Noise	
a. @ 10 Hz	< -115 dBc
b. @ 100 Hz	< -130 dBc
c. @ 1 kHz	< -140 dBc
d. @ > 10 kHz	< -150 dBc

 OUR PERFORMANCE YOUR REPUTATION	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	OCXO 145-1001	1	2	114-1479	-

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

- 3.1. Range > $\pm 8 \times 10^{-7}$
< $\pm 2.4 \times 10^{-6}$

Referenced to frequency at nominal Center Voltage

- 3.2. Control 0 to +4 V
- 3.3. Slope Positive
- 3.4. Center Voltage +2 V

NOTE: When not connected, VCO INPUT is internally held at this voltage.

- 3.5. Linearity < $\pm 10\%$
- 3.6. Input impedance > 100 k Ω

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

- 4.1. Voltage +5 V $\pm 5\%$
- 4.2. Current < 600 mA @ turn on
- 4.3. Steady state < 1.2 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

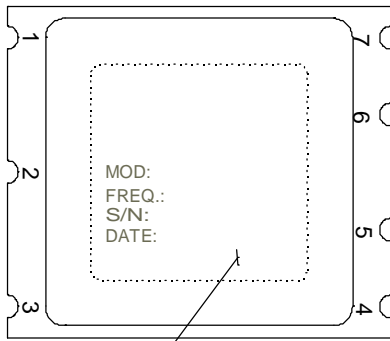
All units supplied under this MODEL NUMBER are RoHS compliant.

7. MECHANICAL(Outline drawing)

- 7.1. Applicable series OCXO 145 series
- 7.2. Model number OCXO 145-1001
- 7.3. Outline drawing 125-634

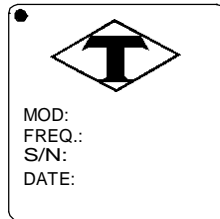
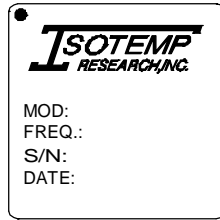
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(VIEW FROM TOP)



MARKING THIS SURFACE

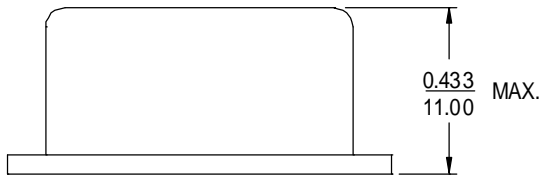
MARKING



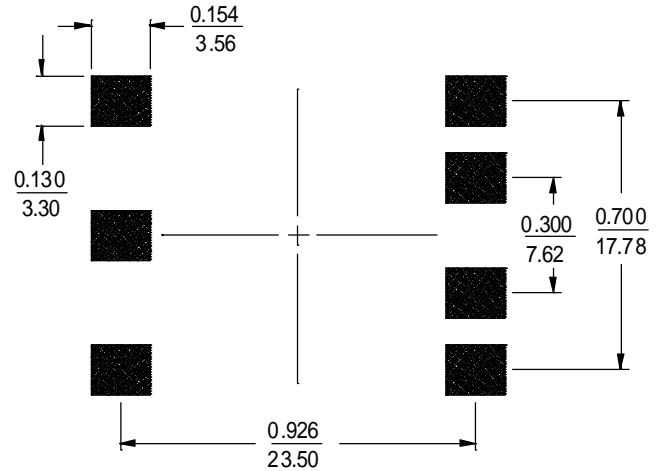
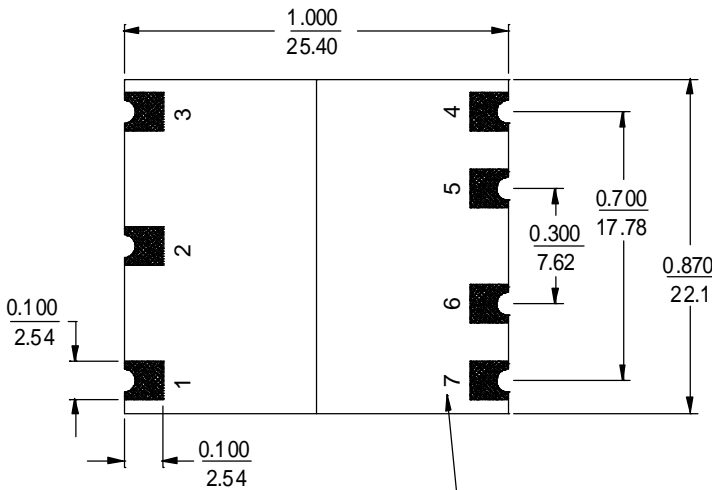
PIN CONNECTIONS

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 (See Note 1)	OVEN MONITOR or NOT CONNECTED
6	0 VOLTS & CASE
7	0 VOLTS & CASE

Note 1. If the specification does not specify parameters for either PIN1, PIN2, or PIN5 then that respective PIN is NOT internally CONNECTED.



RECOMMENDED SOLDER PAD LAYOUT



(VIEW FROM BOTTOM)

INCH / mm (REFERENCE ONLY)

Form NO. 120-081E



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(OCXO 145 SERIES)

CODE I.D. NO.
31785

SCALE: 2:1
DWN. BY: BTG

DATE: 01-30-2008
APPR'D. BY: TST

A	MAX HEIGHT WAS .500/12.70
B	MAX HEIGHT WAS .472/11.99

BTG	JRD	03-03-2008
BTG	TST	10-21-2010

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: 125-634
REV: B
SHT: 1 OF 1