

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	08-12-2011

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

1.1. Frequency	13.000000 MHz
1.2. Initial Accuracy	< $\pm 1 \times 10^{-7}$
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	+3.0 ± 0.001 V
1.3. Waveform	Sine wave
1.4. Level	+9 ± 2 dBm
1.5. Load	50 Ω
1.6. Harmonics	< -30 dBc
1.7. Spurious	< -80 dBc

2. FREQUENCY STABILITY

2.1. Ambient	< $\pm 2.5 \times 10^{-8}$, -30°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	< 2×10^{-11} /second root Allan variance
2.5. Load	< $\pm 1 \times 10^{-9}$ / $\pm 5\%$ change
2.6. Warm-up	< $\pm 2 \times 10^{-8}$ in 5 minutes @ $+25^\circ\text{C}$ (referenced to 1 hour)
2.7. Phase Noise	
a. @ 1 Hz	< -80 dBc
b. @ 10 Hz	< -115 dBc
c. @ 100 Hz	< -135 dBc
d. @ 1 kHz	< -147 dBc
e. @ 10 kHz	< -150 dBc

	OUR PERFORMANCE	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	YOUR REPUTATION	OCXO 131-1009	1	2	114-1473	-

- 3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
 - 3.1. Range
 - > $\pm 6 \times 10^{-7}$
 - < $\pm 1.2 \times 10^{-6}$

Referenced to frequency at nominal Center Voltage
 - 3.2. Control
 - 0 V to +6 V
 - 3.3. Slope
 - Negative
 - 3.4. Center Voltage
 - +3.0 V
 - 3.5. Linearity
 - < $\pm 15\%$
 - 3.6. Input impedance
 - > 100 k Ω


- 4. INPUT POWER (PIN = "+VDC")
 - 4.1. Voltage
 - +12 V $\pm 5\%$
 - 4.2. Current
 - < 250 mA @ turn on @ +25°C
 - 4.3. Steady state
 - < 1.2 Watts @ +25°C

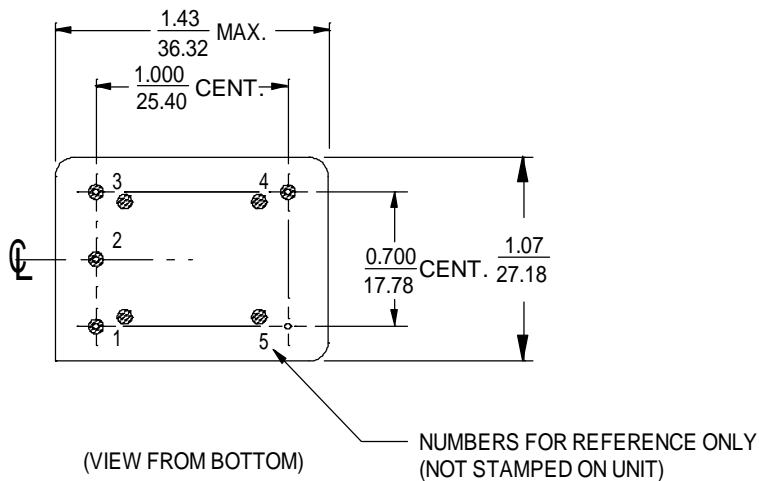
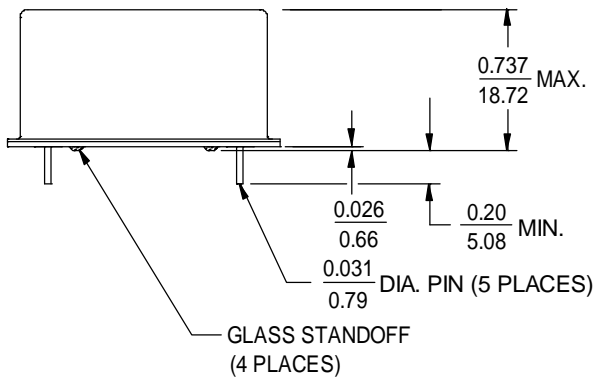
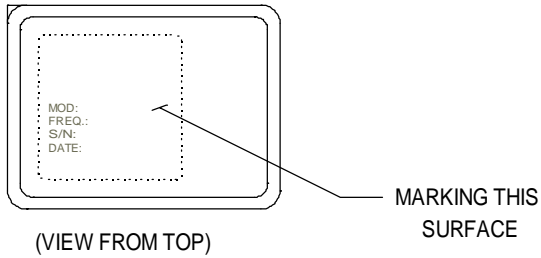
- 5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output
 - 5.1. Voltage
 - +7.5 V $\pm 5\%$
 - 5.2. Load
 - > 9 k Ω

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

- 7. RoHS
 - All units supplied under this MODEL NUMBER are RoHS compliant.

- 8. MECHANICAL(Outline drawing)
 - 8.1. Applicable series
 - OCXO 131 series
 - 8.2. Model number
 - OCXO 131-1009
 - 8.3. Outline drawing
 - 125-587

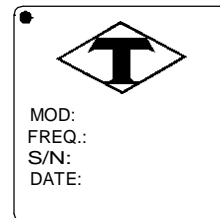
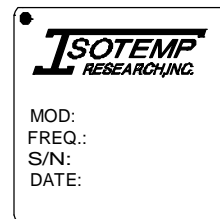
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PIN CONNECTIONS	
PIN	FUNCTION
1 (See Note 1)	VCO INPUT or NOT CONNECTED
2 (See Note 1)	REFERENCE VOLTAGE or OVEN MONITOR or NOT CONNECTED
3	+VDC
4	R. F. OUTPUT
5	0 VOLTS & CASE

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

MARKING



$\frac{\text{INCH}}{\text{mm}}$ (REFERENCE ONLY)

Form NO. 120-081E



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(TCXO 141 & OCXO 131 SERIES)

CODE I.D. NO.
31785

SCALE: 1:1
DWN. BY: LRB

DATE: 12-04-2000
APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE
A	1.07 WAS 1.07 MAX	DAG	TST	12-06-2001
B	NEW FORM AND UPDATED MARKING.	BTG	JRD	02-01-2008
C	HEIGHT WAS .750 AND UPDATED MARKING.	BTG	TST	04-16-2010

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

DWG: 125-587
REV: C
SHT: 1 OF 1