



OCXO 131-45

P.O. BOX 3389
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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	REQ. BY	DWN. BY	DATE
-		TST	DWR	12-09-98

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID.	PART NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 131-45	1	3	114-849	-

- 1. OUTPUT
 - 1.1. Frequency 19.440 MHz
 - 1.2. Waveform Rectangular
 - 1.3. Level HCMOS
 - a. "1" level > +4.6 VDC
 - b. "0" level < +0.3 VDC
 - 1.4. Load 3 HCMOS/TTL loads
 - 1.5. Duty cycle 40% to 60% @ +2.5 VDC
 - 1.6. Rise/fall time < 15 ns between 10% and 90% of "1" level minus "0" level
 - 1.7. Spurious < -60 dBc

- 2. FREQUENCY STABILITY
 - 2.1. Ambient < 2.8×10^{-7} window from -40°C to +70°C
 - Goal < $\pm 1.4 \times 10^{-7}$ from -40°C to +70°C (referenced to +25°C)
 - 2.2. Aging
 - a. At time of shipment < $\pm 2 \times 10^{-8}$ /day
 - b. After indefinite storage
 - i. Daily < $\pm 1 \times 10^{-8}$ after 30 days
 - ii. Yearly < ± 1 PPM
 - iii. 20 years < ± 4 PPM
 - 2.3. Voltage < $\pm 3 \times 10^{-8}$ /±5% change
 - 2.4. Warm-up (Referenced to frequency at 2 hours)
 - a. At -40°C < ± 5 PPM in 52 seconds
 - b. At +25°C < ± 5 PPM in 27 seconds (20 seconds goal)
 - c. -40°C to +70°C < $\pm 1 \times 10^{-7}$ in 5 minutes
 - 2.5. Phase noise
 - a. @ 100 Hz < -115 dBc
 - b. @ 10 kHz < -145 dBc

- 3. ELECTRICAL FREQUENCY ADJUSTMENT
 - 3.1. Range > ± 10 PPM
 - < ± 20 PPM (At time of shipment)
 - (Referenced to nominal frequency)
 - 3.2. Control 0 VDC to +5 VDC
 - 3.3. Slope Positive
 - 3.4. Center +2.5 VDC ± 0.5 VDC
 - (control voltage at which nominal frequency occurs at time of shipment)
 - 3.5. Linearity < $\pm 20\%$
 - 3.6. Input impedance > 20 k Ω

ISOTEMP RESEARCH INC. CHARLOTTEVILLE, VA. USA	CODE ID.	PART NO.	PAGE OF TOTAL		DWG. NO.	REV.
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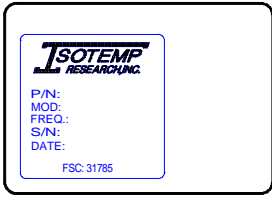
- 4. INPUT POWER
 - 4.1. Voltage +5 VDC ±5%
 - 4.2. Current < 1.6 A @ turn on
 - 4.3. Steady state
 - a. @ +25°C < 1 Watt
 - b. @ -40°C < 2.5 Watts

- 5. ENVIRONMENTAL
 - 5.1. Storage temperature -55°C to +105°C
 - 5.2. Vibration (non-operating) MIL-STD-202F Method 201A. (0.06" Total p-p, 10 to 55 Hz)
 - 5.3. Shock (non-operating) MIL-STD-202F, Method 213B, Test Condition J. (30 g, 11 ms half-sine)
 - 5.4. Seal MIL-STD-202F, Method 112C, Test Condition D.
 - 5.5. Temperature cycling Unit must be able to withstand 10 cycles over the storage temperature range with maximum time between temperature endpoints of 15 minutes, without any degradation in performance or device seals.

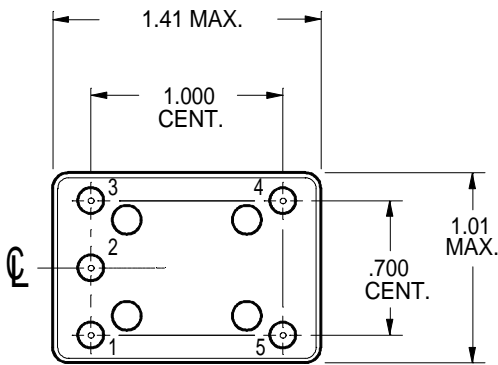
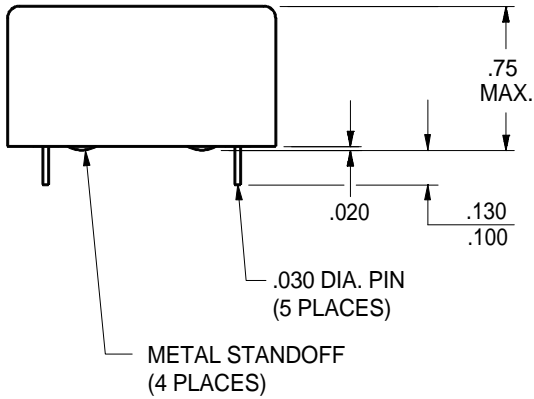
- 6. REFERENCE VOLTAGE
 - 6.1. Voltage +3.7 VDC ±5%
(Not used for this application, should be left unconnected.)

- 7. MECHANICAL
 - 7.1. Applicable series OCXO 131 series
 - 7.2. Model number OCXO 131-45
 - 7.3. Outline drawing 125-549

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PIN CONNECTIONS	
PIN	FUNCTION
1	VCO INPUT
2	REFERENCE VOLTAGE
3	+VDC
4	R. F. OUTPUT
5	0 VOLTS & CASE



NUMBERS FOR REFERENCE ONLY
(NOT STAMPED ON UNIT)

NOTE: USE 125-501 WHENEVER POSSIBLE.

FORM NO. 120-081D



OSCILLATORS

CHARLOTTESVILLE, VIRGINIA

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

CODE I.D. NO.
31785

SCALE: 1:1
DWN. BY: PAD

DATE: 08-24-98
APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE
B	REDRAWN - NEW FORM, REVISED LABEL, ADDED NOTE.	LRB	DAG	04-24-00

TOLERANCES
UNLESS OTHERWISE SPECIFIED:
ANGLES: ±1 DEGREE
FRACTIONS: ±1/32 INCH
DECIMALS: .XX ±.015, .XXX ±.010
MAT'L: COLD ROLLED STEEL
FINISH: BRIGHT NICKEL
MARK: LABEL

DWG: 125-549
REV: B
SHT: 1 OF 1