



Charlottesville, VA USA
www.isotemp.com

OCXO 131-2

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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	BY	APV	DATE
-		ADB	JRD	10-14-1998
A	Put on new form, Added 2.5., 2.7. was TBD, In 3.1. 4×10^{-7} was 3×10^{-7} , 4.2. was 250 mA, 4.3. was 1 Watt, 7.3. was 125-501	TST	TST	02-28-2002

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 131-2	1	3	114-836	A



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- 1. OUTPUT
 - 1.1. Frequency 10.000 MHz
 - 1.2. Waveform Sine wave
 - 1.3. Level +8 ±2 dBm
 - 1.4. Load 50 Ω
 - 1.5. Harmonics < -30 dBc
 - 1.6. Spurious < -60 dBc

- 2. FREQUENCY STABILITY
 - 2.1. Ambient < ±2x10⁻⁸ from -30°C to +70°C (referenced to +25°C)
 - 2.2. Aging
 - a. At time of shipment < ±5x10⁻¹⁰/day
 - b. After indefinite storage
 - i. Daily < ±5x10⁻¹⁰ after 30 days
 - ii. Yearly < ±1x10⁻⁷
 - iii. 10 years < ±3x10⁻⁷
 - 2.3. Voltage < ±5x10⁻⁹/±5% change
 - 2.4. Load < ±5x10⁻⁹/±5% change
 - 2.5. Short term < 5x10⁻¹¹/second
root Allan variance
 - 2.6. Warm-up < ±2x10⁻⁸ in 5 minutes @ +25°C (referenced to 4 hours)
 - 2.7. Phase noise
 - a. @ 10 Hz < -120 dBc
 - b. @ 100 Hz < -135 dBc
 - c. @ 1 kHz < -150 dBc
 - d. @ 10 kHz < -150 dBc
 - e. @ 100 kHz < -150 dBc

- 3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
 - 3.1. Range > ±4x10⁻⁷
< ±9x10⁻⁷ (At time of shipment)
(Referenced to nominal frequency)
 - 3.2. Control 0 VDC to Vref (+8 VDC) or
a 10 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 +4 VDC ±0.8 VDC
(control voltage at which nominal
frequency occurs at time of shipment)
 - 3.5. Input impedance > 100 kΩ

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- 4. INPUT POWER (PIN = "+VDC")
 - 4.1. Voltage +12 VDC $\pm 5\%$
 - 4.2. Current < 300 mA @ turn on
 - 4.3. Steady state < 1.5 Watts @ +25°C

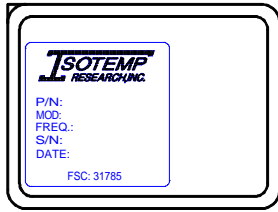
- 5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output
 - 5.1. Voltage +8 VDC $\pm 5\%$
 - 5.2. Load > 8 k Ω
 - 5.3. Temperature stability < ± 0.015 VDC
(Over temperature range in 2.1.)

- 6. ENVIRONMENTAL
 - 6.1. Humidity MIL-STD-202F, Method 103B, Test Condition A (95% R.H. @ +40°C, non-condensing, 96 hours)
 - 6.2. Storage temperature -50°C to +85°C
 - 6.3. Vibration (non-operating) MIL-STD-202F Method 201A. (0.06" Total p-p, 10 to 55 Hz)
 - 6.4. Shock (non-operating) MIL-STD-202F, Method 213B, Test Condition J.
(30 g, 11 ms half-sine)
 - 6.5. Seal MIL-STD-202F, Method 112C, Test Condition D.

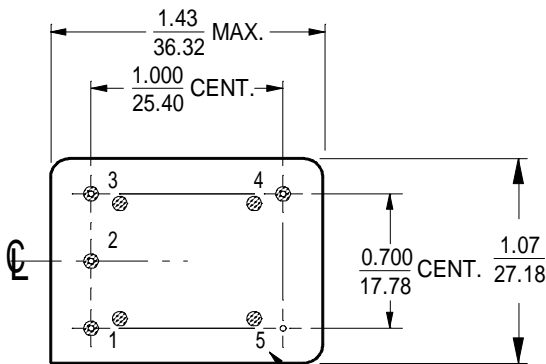
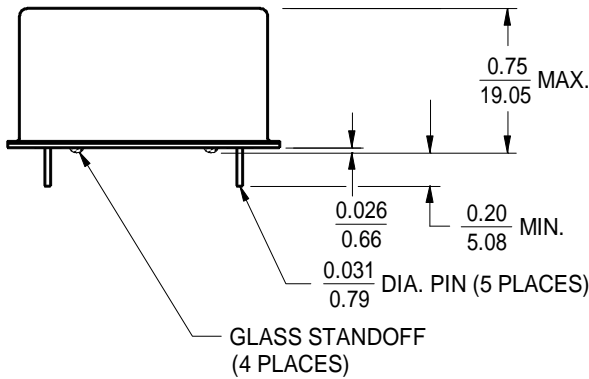
- 7. MECHANICAL
 - 7.1. Applicable series OCXO 131 series
 - 7.2. Model number OCXO 131-2
 - 7.3. Outline drawing 125-587

NOTE: This specification differs from the OCXO 131-2 listed in the ISOTEMP catalogue in the following areas. 1. The turn on current is 50 mA higher. 2. The steady state power is 0.5 Watts higher. 3. The width is 0.01 inches wider. 4. The length is 0.06 inches longer.

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(VIEW FROM TOP)



(VIEW FROM BOTTOM) NUMBERS FOR REFERENCE ONLY (NOT STAMPED ON UNIT)

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. 120-081D



OSCILLATORS

CHARLOTTESVILLE, VIRGINIA

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

CODE I.D. NO.
31785

SCALE: 1:1
DWN. BY: LRB

DATE: 12-04-00
APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE
A	1.07 WAS 1.07 MAX.	DAG	TST	12-6-01

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

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