ISOTEMP RESEARCH, INC.

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OCXO 131-2

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. $4x10^{-7}$ was $3x10^{-7}$, 4.2. was 250 mA, 4.3. was 1 Watt, 7.3. was 125-501	TST	TST	02-28-2002

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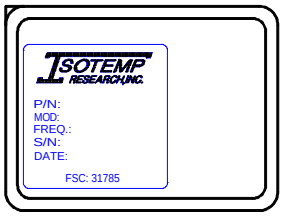
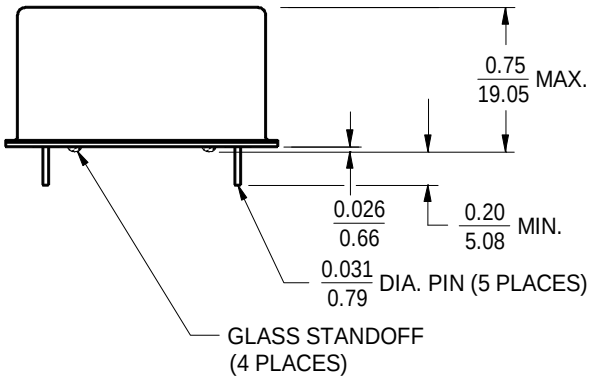
1. OUTPUT	
1.1. Frequency	10.000 MHz
1.2. Waveform	Sine wave
1.3. Level	+8 ±2 dBm
1.4. Load	50 Ω
1.5. Harmonics	< -30 dBc
1.6. Spurious	< -60 dBc
2. FREQUENCY STABILITY	
2.1. Ambient	< $\pm 2 \times 10^{-8}$ from -30°C to +70°C (referenced to +25°C)
2.2. Aging	
a. At time of shipment	< $\pm 5 \times 10^{-10}$/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	< $\pm 3 \times 10^{-7}$
2.3. Voltage	< $\pm 5 \times 10^{-9}$/±5% change
2.4. Load	< $\pm 5 \times 10^{-9}$/±5% change
2.5. Short term	< 5×10^{-11}/second root Allan variance
2.6. Warm-up	< $\pm 2 \times 10^{-8}$ 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	> $\pm 4 \times 10^{-7}$ < $\pm 9 \times 10^{-7}$ (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

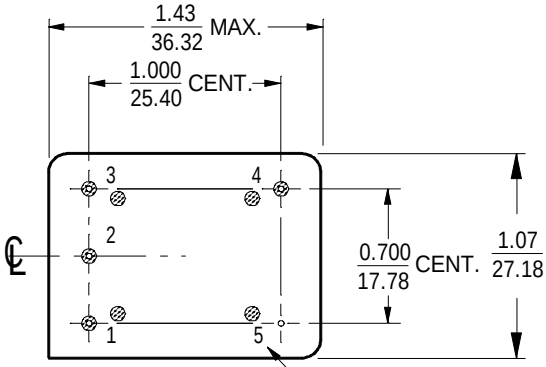
4. INPUT POWER (PIN = "+VDC")	
4.1. Voltage	+12 VDC ±5%
4.2. Current	< 300 mA @ turn on
4.3. Steady state	< 1.5 Watts @ +25°C
5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE"), an output	
5.1. Voltage	+8 VDC ±5%
5.2. Load	> 8 kΩ
5.3. Temperature stability	< ±0.015 VDC (Over temperature range in 2.1.)
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.



(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

ISOTEMP RESEARCH,INC. OSCILLATORS CHARLOTTESVILLE, VIRGINIA

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

CODE I.D. NO.	SCALE: 1:1	DATE: 12-04-00
31785	DWN. BY: LRB	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