ISOTEMP RESEARCH, INC.

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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
-		ADB	TST	09-23-98
A	2.4. was To Be Determined, 2.6. was To Be Determined, 3.1. was > ±6x10^{-6}, < ±12x10^{-6}, 3.2. was 0 to +5 VDC, 3.3. was Positive, 3.4. was +2.5 VDC ±0.5 VDC, Added Goal < 250 mA @ turn on to 4.2.	ADB	TST	09-28-98
B	1.6. WAS 15 ns, 2.6. was -75 dBc, 3.5.was 20%	ADB	TST	10-13-98
C	Removed < -85 dBc (Best effort) from 2.6. 4.2. was < 400 mA @ turn on, Goal < 250 mA @ turn on	TST	TST	12-15-98
D	Outline drawing was 125-501.	LRB	TST	05-01-00

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID.	PART NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 131-42	1	3	114-834	D

1. OUTPUT

1.1. Frequency	38.880 MHz
1.2. Waveform	Rectangular
1.3. Level	HCMOS
a. "1" level	> +4.4 VDC
b. "0" level	< +0.4 VDC
1.4. Load	2 TTL
1.5. Duty cycle	45% to 55% @ +2.5 VDC
1.6. Rise/fall time	< 5 ns (10% to 90%)
1.7. Spurious	< -60 dBc

2. FREQUENCY STABILITY

2.1. Ambient	$< \pm 1 \times 10^{-7}$ from 0°C to +50°C (referenced to +25°C)
2.2. Aging	
a. At time of shipment	$< \pm 1 \times 10^{-8}$/day
b. After indefinite storage	
i. Daily	$< \pm 1 \times 10^{-8}$ after 30 days
ii. Yearly	$< \pm 1 \times 10^{-6}$
iii. 10 years	$< \pm 4 \times 10^{-6}$
2.3. Voltage	$< \pm 3 \times 10^{-8}$/±5% change
2.4. Short term	$< 5 \times 10^{-10}$/second root Allan variance
2.5. Warm-up	$< \pm 1 \times 10^{-7}$ in 5 minutes @ +25°C (referenced to 1 hour)
2.6. Phase noise	< -80 dBc @ 10 Hz

3. ELECTRICAL FREQUENCY ADJUSTMENT

3.1. Range	$> \pm 6 \times 10^{-6}$ $< \pm 9 \times 10^{-6}$ (At time of shipment) (Referenced to nominal frequency)
3.2. Control	-5 VDC to +5 VDC
3.3. Slope	Negative
3.4. Center	0 ±0.5 VDC (control voltage at which nominal frequency occurs at time of shipment)
3.5. Linearity	< ±12%
3.6. Input impedance	> 100 kΩ

4. INPUT POWER

4.1. Voltage	+12 VDC ±10%
4.2. Current	< 250 mA @ turn on @ +25°C
4.3. Steady state	< 1.4 Watts @ +25°C

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5. REFERENCE VOLTAGE
   5.1. Voltage   +5 VDC ±5%
   5.2. Load   > 9 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   -55°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
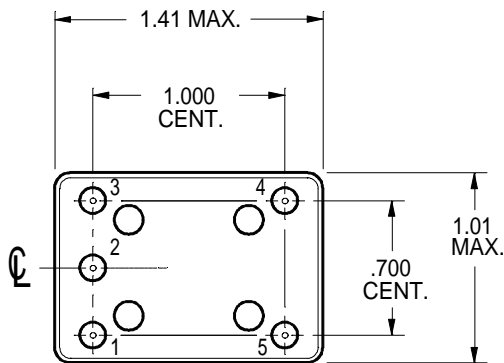   7.2. Model number   OCXO 131-42
   7.3. Outline drawing   125-573

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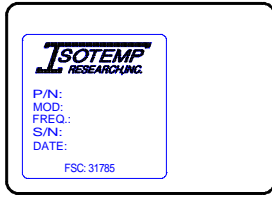
PIN CONNECTIONS

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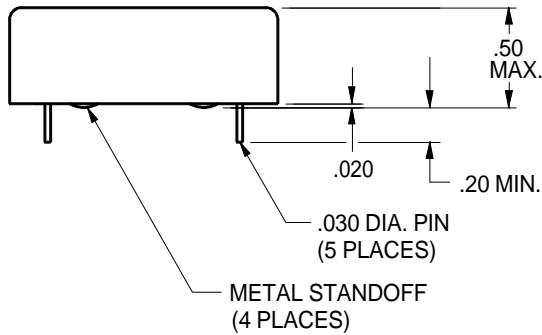
Note 1. If the specification does not specify parameters for either PIN1 or PIN2 then that respective PIN is NOT internally CONNECTED.

P/N:
MOD:
FREQ.:
S/N:
DATE:
FSC: 31785

.50 MAX.

.020

.20 MIN.

.030 DIA. PIN (5 PLACES)

METAL STANDOFF (4 PLACES)

1.41 MAX.

1.000 CENT.

1.01 MAX.

.700 CENT.

NUMBERS FOR REFERENCE ONLY (NOT STAMPED ON UNIT)

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: 08-30-99
31785	DWN. BY: BTG	APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE	
B	REDRAWN - NEW FORM, REVISED LABEL	LRB	DAG	06-13-00	TOLERANCES
C	PIN 1 was VCO INPUT, PIN 2 was REFERENCE VOLTAGE, Added Note 1. These changes were made so that this drawing will accommodate units where PIN 1 and/ or PIN 2 are not connected.	DAG	DAG	07-12-00	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: 125-573
REV: C
SHT: 1 OF 1