



Charlottesville, VA USA  
www.isotemp.com

# OCXO 131-1002

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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
-		BTG	TST	03-04-2006

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 131-1002	1	2	114-1246	-

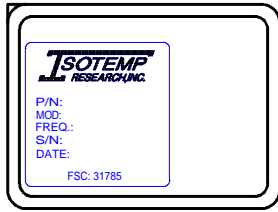


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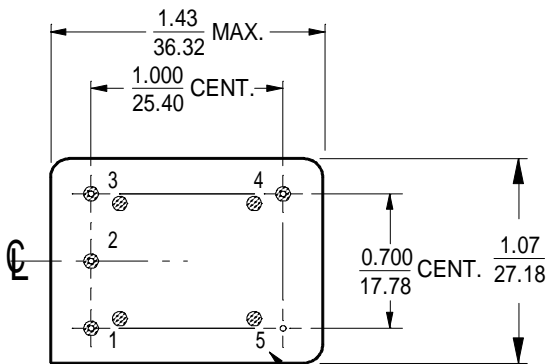
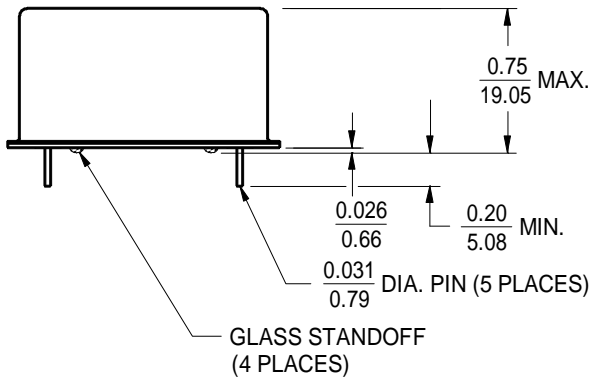
## OCXO 131-1002

1. OUTPUT (PIN = "R.F. OUTPUT")
  - 1.1. Frequency 10.000 MHz
  - 1.2. Waveform Rectangular
  - 1.3. Level HCMOS
    - a. "1" level > Vcc - 0.5 V
    - b. "0" level < +0.3 V
  - 1.4. Load 5 HCMOS loads
  - 1.5. Duty cycle 40% to 60% @ 50% level
  - 1.6. Rise/fall time < 10 ns (10% to 90%)
  - 1.7. Spurious < -60 dBc
2. FREQUENCY STABILITY
  - 2.1. Ambient <  $\pm 6 \times 10^{-9}$ , -20°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 <  $\pm 4 \times 10^{-7}$
  - 2.3. Voltage <  $\pm 3.5 \times 10^{-9}$ /±5% change
  - 2.4. Short term <  $2 \times 10^{-11}$ /second  
root Allan variance
  - 2.5. Warm-up <  $\pm 1 \times 10^{-7}$  in 15 minutes  
(referenced to 1 hour)
  - 2.6. Phase noise
    - a. @ 100 Hz < -140 dBc
    - b. @ 10 kHz < -150 dBc
3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
  - 3.1. Range >  $\pm 5 \times 10^{-7}$   
<  $\pm 1 \times 10^{-6}$  (At time of shipment)  
(Referenced to nominal frequency)
  - 3.2. Control 0 to +5 V
  - 3.3. Slope Positive
  - 3.4. Center +2.5 ±0.3 V  
(Control voltage at which nominal frequency occurs at time of shipment)
  - 3.5. Linearity < ±10%
  - 3.6. Input impedance > 50 kΩ
4. INPUT POWER (PIN = "+VDC")
  - 4.1. Voltage +5 V ±5%
  - 4.2. Current < 800 mA @ turn on
  - 4.3. Steady state < 1.25 Watts @ +25°C
5. MECHANICAL
  - 5.1. Applicable series OCXO 131 series
  - 5.2. Model number OCXO 131-1002
  - 5.3. Outline drawing 125-587

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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