



Charlottesville, VA USA
www.isotemp.com

OCXO 82-1001

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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	03-03-2006

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 82-1001	1	3	114-1241	-



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- 1. OUTPUT (PIN = "R.F. OUTPUT")
 - 1.1. Frequency 16.384 MHz
 - 1.2. Waveform Rectangular
 - 1.3. Level TTL / HCMOS
 - a. "1" level > +4.4 V
 - b. "0" level < +0.4 V
 - 1.4. Load 3 TTL
 - 1.5. Duty cycle 45% to 55% @ +2.5 V
 - 1.6. Rise/fall time < 6 ns (10% to 90%)

- 2. FREQUENCY STABILITY
 - 2.1. Ambient < $\pm 1 \times 10^{-8}$, 0°C to +60°C (referenced to +30°C)

 - 2.2. Aging
 - a. At time of shipment < $\pm 1 \times 10^{-9}$ /day
 - b. After indefinite storage
 - i. Daily < $\pm 1 \times 10^{-9}$ after 30 days
 - ii. Yearly < $\pm 1 \times 10^{-7}$
 - iii. 10 years < $\pm 4 \times 10^{-7}$
 - 2.3. Voltage < $\pm 5 \times 10^{-9}$ /±10% change
 - 2.4. Short term < 5×10^{-11} /second
root Allan variance
 - 2.5. Warm-up/Retrace < $\pm 2 \times 10^{-8}$ after 0.5 hour
(referenced to turn-off frequency after specified aging is met, and following 24 hours off power)
(at constant temperature and voltage)

- 3. MECHANICAL FREQUENCY ADJUSTMENT
 - 3.1. Range > $\pm 3 \times 10^{-7}$
 - 3.2. Resolution < $\pm 2 \times 10^{-9}$
 - 3.3. Control Multi-turn trimmer

- 4. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
 - 4.1. Range > $\pm 4.5 \times 10^{-7}$
< $\pm 6.5 \times 10^{-7}$ (At time of shipment)
(Referenced to nominal frequency)
 - 4.2. Control -5 to +5 V
 - 4.3. Slope Negative
 - 4.4. Center 0 ±0.4 V
(Control voltage at which nominal frequency occurs at time of shipment)
 - 4.5. Linearity < ±10%
 - 4.6. Input impedance > 20 kΩ

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
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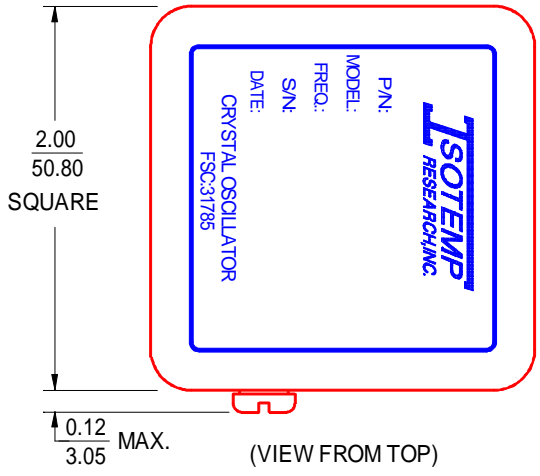
OCXO 82-1001

- 5. INPUT POWER (PIN = "+VDC")
 - 5.1. Voltage +12 V \pm 10%
 - 5.2. Current < 400 mA @ turn on
 - 5.3. Steady state < 2 Watts @ +25°C

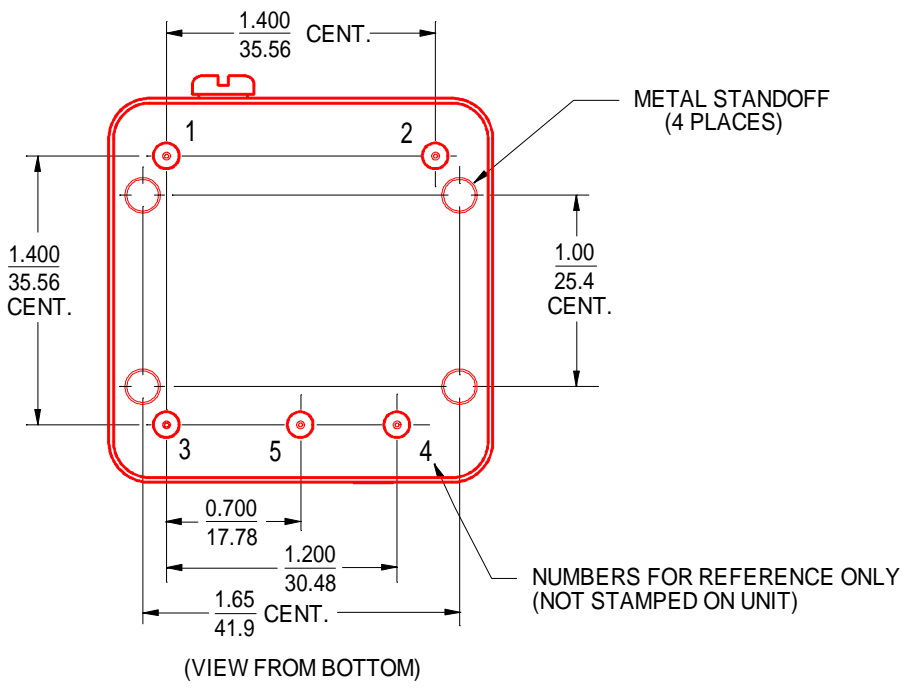
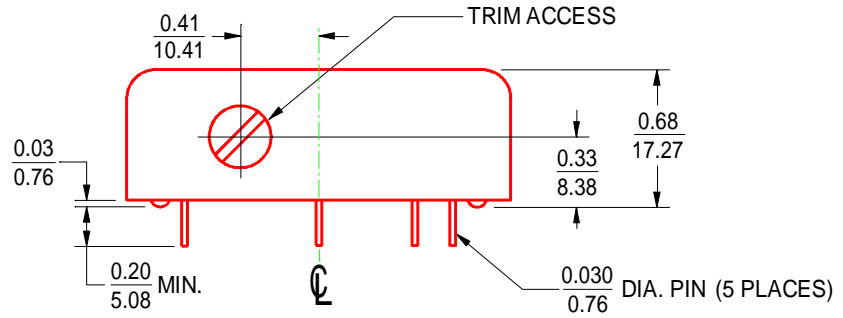
- 6. OVEN MONITOR (PIN = "OVEN MONITOR"), an output
 - 6.1. Oven at temperature > +4.6 V
 - 6.2. Oven not at temperature < +0.3 V

- 7. MECHANICAL
 - 7.1. Applicable series OCXO 82 series
 - 7.2. Model number OCXO 82-1001
 - 7.3. Outline drawing 125-541

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
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PIN CONNECTIONS	
PIN	FUNCTION
1	+ VDC
2	R. F. OUTPUT
3	0 VOLTS & CASE
4	VCO INPUT
5	OVEN MONITOR



INCH
mm (REFERENCE ONLY)

Form NO. 120-081E



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(OCXO 82 SERIES)

CODE I.D. NO.
31785

SCALE: 1:1
DWN. BY: ZQQ

DATE: 04-03-1998
APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE
A	REDRAWN mm DIM. added	DAG	TST	08-01-2001

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

REV: A
 SHT: 1 OF 1
 DWG: 125-541