



Charlottesville, VA USA
www.isotemp.com

OCXO 91-1

PHONE: (434) 295-3101
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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	TST	01-08-1999
A	1.5. was -30 dBc, Added 2.1.b., 2.3. was $\pm 5 \times 10^{-10}$, Added 2.4.a. and 2.4.c., Added 2.6.a. and 2.6.f., 2.6.c. was -130 dBc, 2.6.d. was -145 dBc, 2.6.e. was -150 dBc, In 4.1. $> \pm 1.8 \times 10^{-7}$ was $> \pm 1 \times 10^{-7}$, 5.2. was 500 mA.	TST	TST	01-22-2002

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID	MODEL NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 91-1	1	3	114-856	A



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- 1. OUTPUT
 - 1.1. Frequency 10.000 MHz
 - 1.2. Waveform Sine wave
 - 1.3. Level +7 ±1.5 dBm
 - 1.4. Load 50 Ω
 - 1.5. Harmonics < -40 dBc
 - 1.6. Spurious < -60 dBc

- 2. FREQUENCY STABILITY
 - 2.1. Ambient (referenced to +35°C)
 - a. From 0°C to +60°C < ±1x10⁻⁹
 - b. From +30°C to +40°C < ±2x10⁻¹⁰
 - 2.2. Aging
 - a. At time of shipment < ±5x10⁻¹⁰/day
 - b. After indefinite storage
 - i. Daily < ±5x10⁻¹⁰ after 30 days
 - ii. Yearly < ±5x10⁻⁸
 - iii. 10 years < ±2x10⁻⁷
 - 2.3. Voltage < ±2x10⁻¹⁰/±5% change
 - 2.4. Short term root Allan variance
 - a. 0.1 Seconds < 5x10⁻¹¹
 - b. 1 Second < 5x10⁻¹²
 - c. 10 Seconds < 1x10⁻¹¹
 - 2.5. Warm-up < ±5x10⁻⁸ in 60 minutes @ 0°C
(referenced to 4 hours)
 - 2.6. Phase noise
 - a. @ 1 Hz < -89 dBc
 - b. @ 10 Hz < -120 dBc
 - c. @ 100 Hz < -140 dBc
 - d. @ 1 kHz < -151 dBc
 - e. @ 10 kHz < -154 dBc
 - f. @ 100 kHz < -157 dBc

- 3. MECHANICAL FREQUENCY ADJUSTMENT
 - 3.1. Range > ±2x10⁻⁷
 - 3.2. Resolution < ±2x10⁻⁹
 - 3.3. Control Multi-turn trimmer

- 4. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")
 - 4.1. Range > ±1.8x10⁻⁷
< ±3x10⁻⁷
 - 4.2. Control 0 VDC to +5 VDC
 - 4.3. Slope Positive
 - 4.4. Center +2.5 VDC
 - 4.5. Linearity < ±10%
 - 4.6. Input impedance > 50 kΩ

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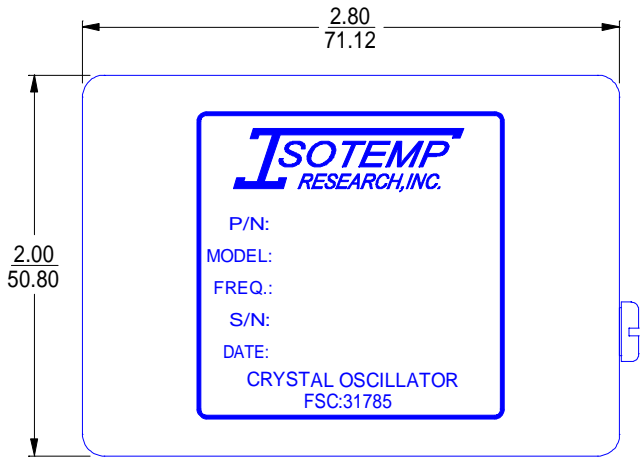
OCXO 91-1

- 5. INPUT POWER (PIN = "+VDC")
 - 5.1. Voltage +12 VDC ±5%
 - 5.2. Current < 460 mA @ turn on
 - 5.3. Steady state < 2.8 Watts @ +25°C

- 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 -40°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.

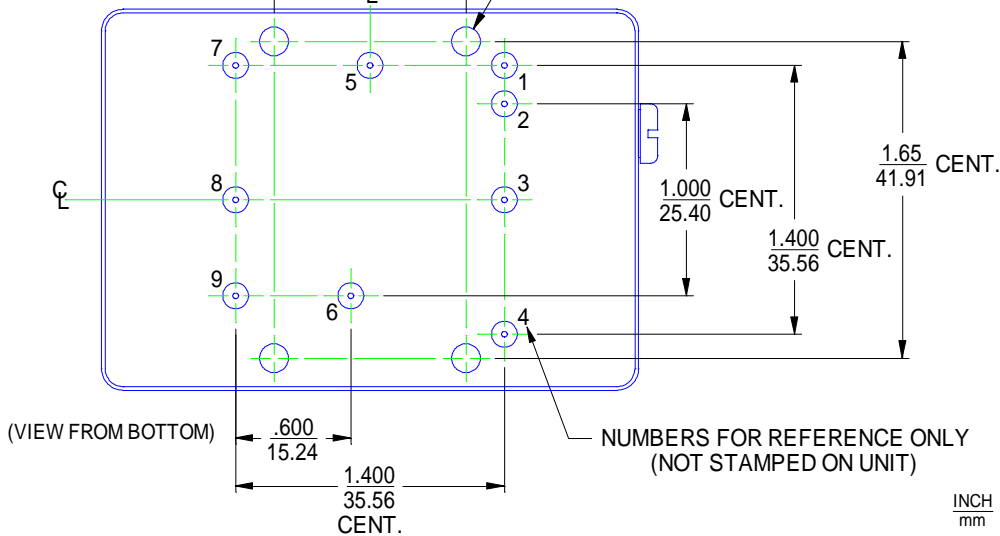
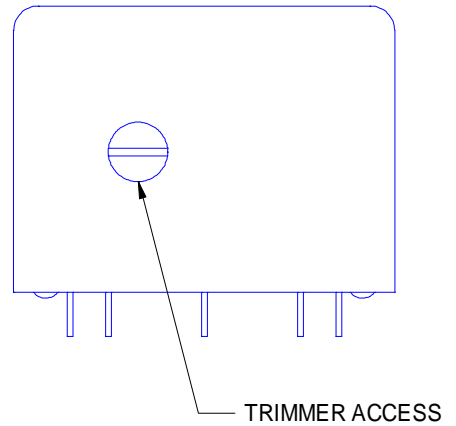
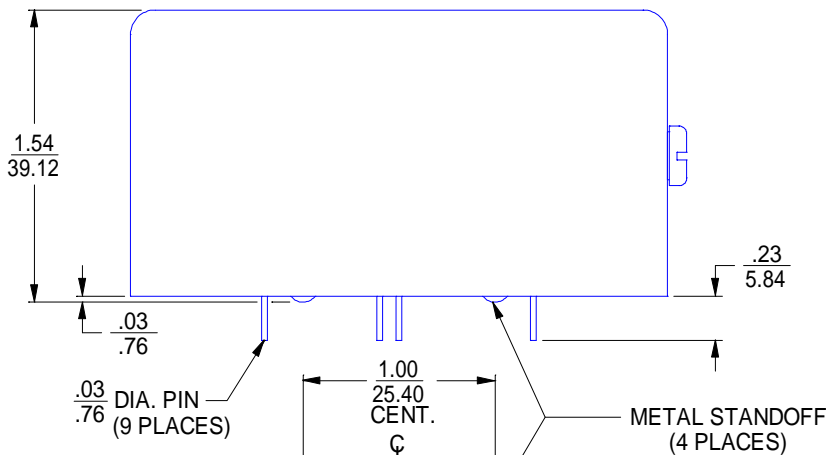
- 7. MECHANICAL
 - 7.1. Applicable series OCXO 91 series
 - 7.2. Model number OCXO 91-1
 - 7.3. Outline drawing 125-504

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(VIEW FROM TOP)

PIN CONNECTIONS	
PIN	FUNCTION
1	NOT CONNECTED
2	+ VDC
3	0 VOLTS AND CASE
4	R.F. OUTPUT
5	0 VOLTS AND CASE
6	0 VOLTS AND CASE
7	0 VOLTS AND CASE
8	0 VOLTS AND CASE
9	VCO INPUT



INCH
mm (REFERENCE ONLY)

Form NO. 120-081E



OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING
(OCXO 91 SERIES)

CODE I.D. NO.

31785

SCALE: 1:1

DATE: 12-03-1996

DWN. BY: JAC

APPR'D. BY: DAG

A ADDED METRIC DIMENSION AND UPDATED.

BTG DAG 04-18-2002

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

LET REVISION

BY APP DATE

DWG: 125-504
REV: A
SHT: 1 OF 1