ISOTEMP RESEARCH, INC.

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OCXO 91-1

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

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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	$< \pm 1 \times 10^{-9}$
b. From +30°C to +40°C	$< \pm 2 \times 10^{-10}$
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	$< \pm 5 \times 10^{-8}$
iii. 10 years	$< \pm 2 \times 10^{-7}$
2.3. Voltage	$< \pm 2 \times 10^{-10}$/±5% change
2.4. Short term	root Allan variance
a. 0.1 Seconds	$< 5 \times 10^{-11}$
b. 1 Second	$< 5 \times 10^{-12}$
c. 10 Seconds	$< 1 \times 10^{-11}$
2.5. Warm-up	$< \pm 5 \times 10^{-8}$ 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	$> \pm 2 \times 10^{-7}$
3.2. Resolution	$< \pm 2 \times 10^{-9}$
3.3. Control	Multi-turn trimmer
4. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")	
4.1. Range	$> \pm 1.8 \times 10^{-7}$ $< \pm 3 \times 10^{-7}$
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

5. INPUT POWER (PIN = "+VDC")

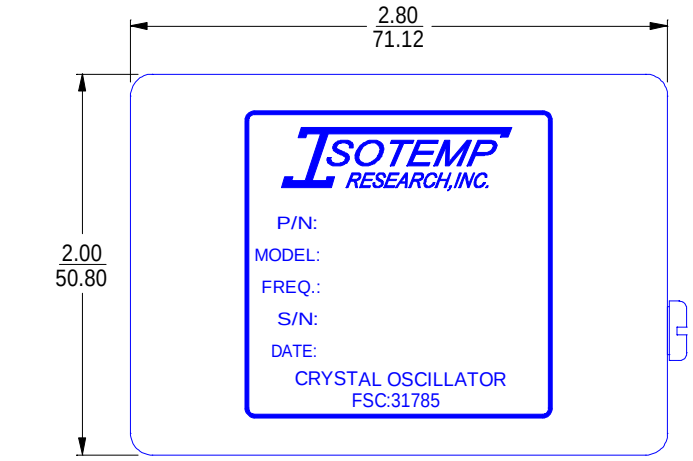
5.1. Voltage	+12 VDC ±5%
5.2. Current	< 460 mA @ turn on
5.3. Steady state	< 2.8 Watts @ +25°C

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.

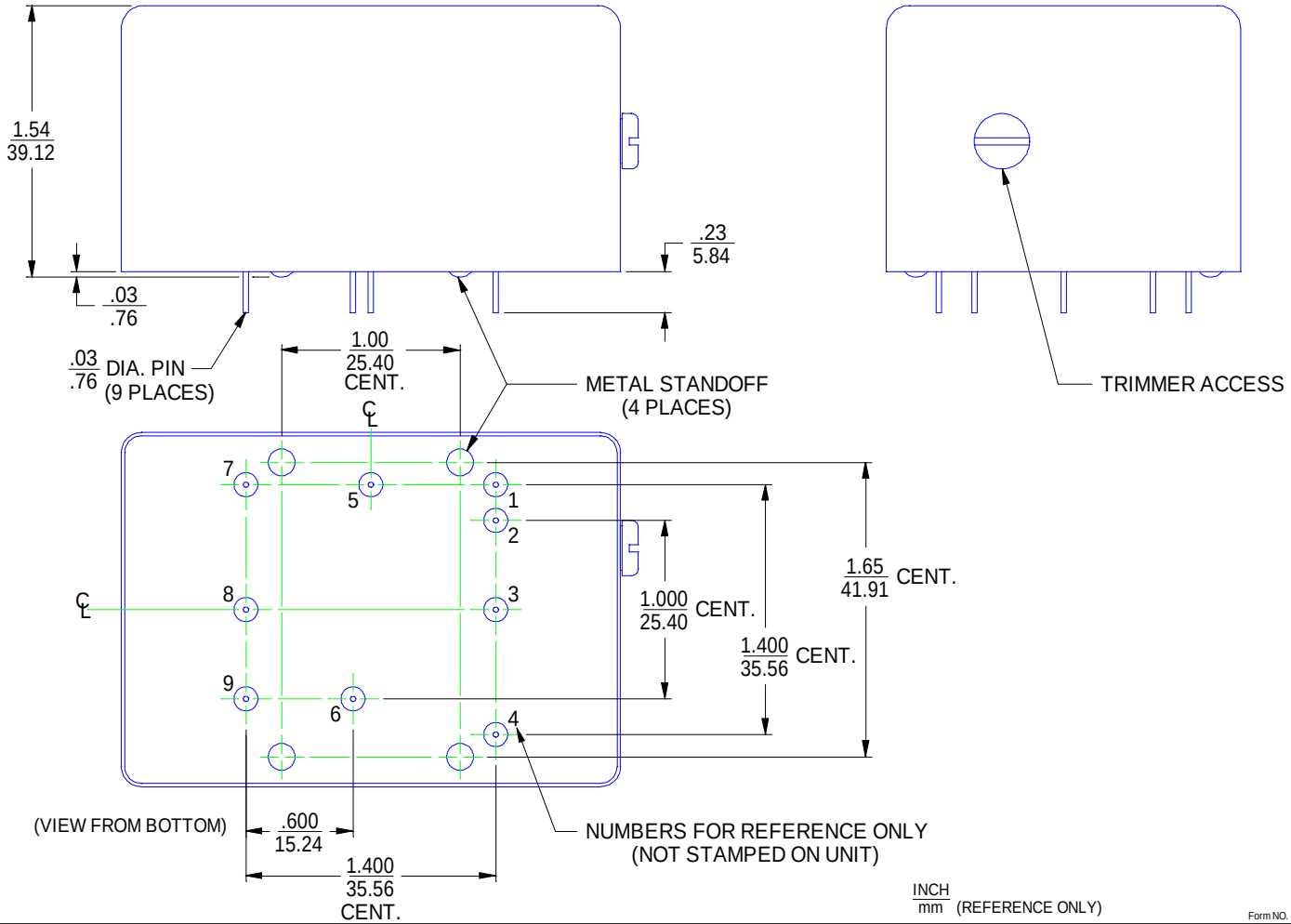
7. MECHANICAL

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



(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

ISOTEMP RESEARCH,INC.

OSCILLATORS

Charlottesville, Virginia USA

NAME: OUTLINE DRAWING

(OCXO 91 SERIES)

CODE I.D. NO.	SCALE: 1:1	DATE: 12-03-1996
31785	DWN. BY: JAC	APPR'D. BY: DAG

LET	REVISION	BY	APP	DATE
A	ADDED METRIC DIMENSION AND UPDATED.	BTG	DAG	04-18-2002

TOLERANCES

UNLESS OTHERWISE SPECIFIED:
ANGES: ±1 DEGREE
FRACTIONS: ±1/32 INCH
DECIMALS: .XX ± .015, .XXX ± .010 INCH

MATERIAL: COLD ROLLED STEEL

FINISH: BRIGHT NICKEL

MARK: LABEL

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