ISOTEMP RESEARCH, INC.

OCXO 134-10

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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
NONE		ADB	TST	02-06-92
A	Updated form, 2.5. was $\pm 5 \times 10^{-10}$, 4.3.a. was ±4 mV, 6.1.a. was +2.4 VDC, 6.2.a. was +0.4 VDC	ADB	TST	10-30-92
B	5.3.a. was < 2.4 Watts (1.8 Watts typical) 5.3.b. was < 4.6 Watts (3.5 Watts typical)	BTB	TST	04-29-94

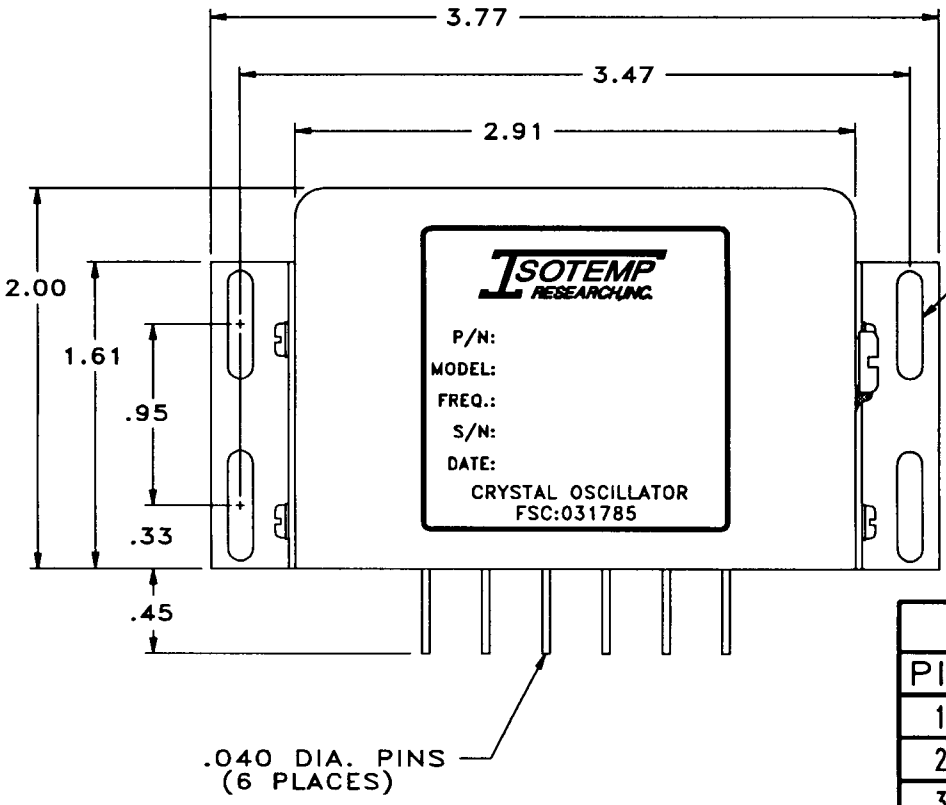
OCXO 134-10

1. OUTPUT	
1.1. Frequency	10.000 MHz
1.2. Wave form	Sine wave
1.3. Level	2 Vp-p ±10% into 50 Ω
1.4. Load	50 Ω ±5%
1.5. Harmonics	< -25 dBc
1.6. Spurious	< -60 dBc
2. STABILITY	
2.1. Ambient	< $\pm 5 \times 10^{-9}$ from -30°C to +60°C (referenced to +25°C)
2.2. Aging	
a. Daily	
i. After 30 days	< $\pm 1 \times 10^{-9}$
ii. After 90 days	< $\pm 5 \times 10^{-10}$
b. Yearly	< $\pm 1.5 \times 10^{-7}$
c. 10 years	< $\pm 4 \times 10^{-7}$
2.3. Voltage	< $\pm 5 \times 10^{-10}$/±2% change
2.4. Short term	< 1×10^{-10}/second root Allan variance
2.5. Load	< $\pm 1 \times 10^{-9}$/±5% change
2.6. Warm-up @ -30°C referenced to	frequency @ 5 hours
a. 30 minutes	< $\pm 5 \times 10^{-8}$
b. 60 minutes	< $\pm 1 \times 10^{-8}$
2.7. Phase noise	
a. @ 10 Hz	< -105 dBc
b. @ 100 Hz	< -125 dBc
c. @ 1 kHz	< -140 dBc
3. ELECTRICAL FREQUENCY ADJUSTMENT	
3.1. Range	> ±0.45 PPM < ±1.2 PPM (At time of shipment) (Referenced to nominal frequency)
3.2. Control	0 VDC to Vref (0 VDC to +8 VDC) or a 10 kΩ potentiometer connected between pins 2 and 4 with wiper connected to pin 3.
3.3. Slope	Positive
3.4. Center	Vref/2 ±10% of Vref (+4 VDC to +0.8 VDC)

(Nominal frequency at time of shipment)

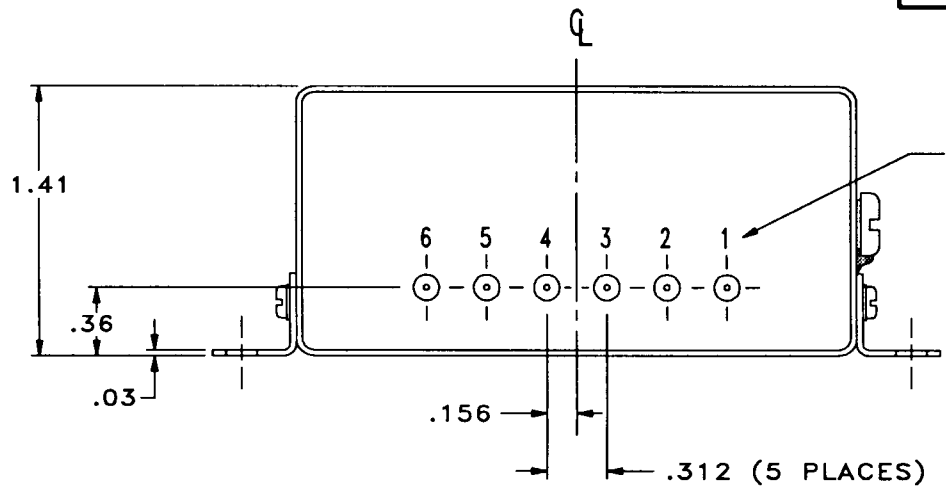
ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID.	PART NO.	PAGE OF TOTAL		DWG. NO.	REV.
	31785	OCXO 134-10	2	3	114-501	B

4. REFERENCE VOLTAGE	
4.1. Voltage	+8 VDC ±5%
4.2. Current	< 1 mA
4.3. Stability	
a. Ambient	< ±10 mV (Over temperature range in 2.1.)
b. Input voltage	< ±1 mV/2%
5. INPUT POWER	
5.1. Voltage	+13 VDC ±2 VDC
5.2. Current	< 800 mA @ turn on
5.3. Steady state	
a. @ +25°C	< 2.8 Watts
b. @ -30°C	< 6 Watts
6. OVEN MONITOR	
6.1. Oven at temperature	
a. Voltage	> +3.5 VDC
6.2. Oven not at temperature	
a. Voltage	< +1 VDC
7. ENVIRONMENTAL	
7.1. Humidity	MIL-STD-202F, Method 103B, Test Condition A (95% R.H. @ +40°C, non-condensing, 240 hours)
7.2. Storage temperature	-40°C to +85°C
7.3. Vibration (non-operating)	MIL-STD-202F method 201A (0.06" Double amplitude, 10 to 55 Hz)
7.4. Shock (non-operating)	MIL-STD-202F method 214 test condition J (30 g's, 11 ms, Half-sine)
8. MECHANICAL	
8.1. Applicable series	OCXO 134 series
8.2. Model number	OCXO 134-10
8.3. Outline drawing	125-396



PIN CONNECTIONS	
PIN	FUNCTION
1	OVEN MONITOR
2	REFERENCE VOLTAGE
3	VCO INPUT
4	0 VOLTS
5	R.F. OUTPUT
6	+ VDC

CASE IS ISOLATED FROM GND.



FORM NO. 120-0818

ISOTEMP RESEARCH INC. OSCILLATORS CHARLOTTESVILLE, VIRGINIA

NAME: OUTLINE DRAWING
(OCXO 134 SERIES)

CODE I.D. NO. 31785

SCALE: 1:1 DATE: 02-05-92

DWN. BY: WEW APPR'D. BY: TST

LET	REVISION	BY	DATE
A	1.61 DIMENSION WAS 1.70	WEW	02-21-92
B	.36 DIMENSION WAS .33	DLR	10-30-92
C	0 VOLTS WAS CONNECTED TO CASE	DLR	11-12-92
D	ADDED SEAL SCREW AND GLYPTOL	DLR	07-13-93

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

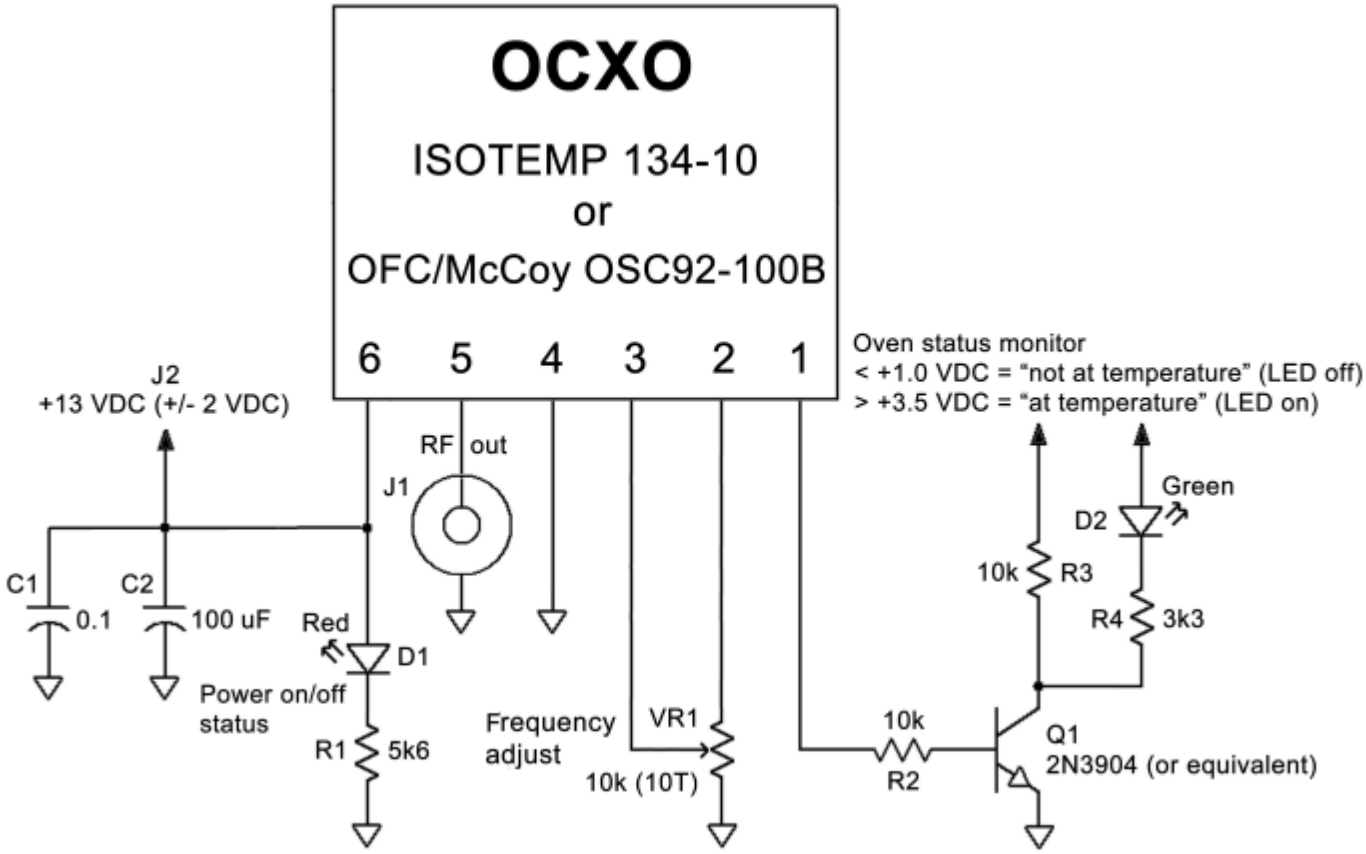
MAT'L: COLD ROLLED STEEL

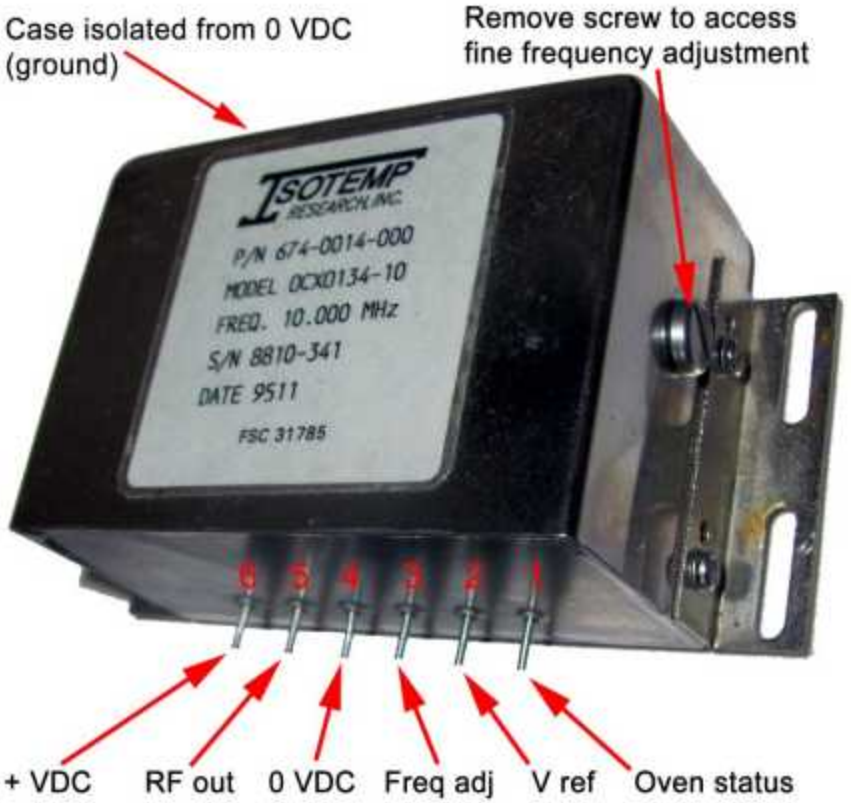
FINISH: BRIGHT NICKEL

MARK: LABEL

REV: D
SHT: 1 OF 1

DWG: 125-396


OCXO
ISOTEMP 134-10
or
OFC/McCoy OSC92-100B
6 5 4 3 2 1
J2
+13 VDC (+/- 2 VDC)
RF out
J1
C1
0.1
C2
100 uF
Red
D1
Power on/off
status
R1
5k6
Frequency
adjust
VR1
10k (10T)
Oven status monitor
< +1.0 VDC = "not at temperature" (LED off)
> +3.5 VDC = "at temperature" (LED on)
Green
D2
10k
R3
R4
3k3
10k
R2
Q1
2N3904 (or equivalent)


Case isolated from 0 VDC (ground)
Remove screw to access fine frequency adjustment
ISOTEMP RESEARCH INC.
P/N 674-0014-000
MODEL OCXO134-10
FREQ. 10.000 MHz
S/N 8810-341
DATE 9511
FSC 31785
6 5 4 3 2 1
+ VDC
RF out
0 VDC
Freq adj
V ref
Oven status