![Isotemp Research, Inc. logo]

OCXO 127-19

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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
-		TST	TST	07-19-95
A	Removed the > sign on 1.3. Removed note on 2.3.b. and reversed order of 2.3.b. and 2.3.a	TST	JAC	12-28-95
B	6.6.3. Outline drawing 125-489 was 125-353	TST	DAG	08-12-99

ISOTEMP RESEARCH INC. CHARLOTTESVILLE, VA. USA	CODE ID.	PART NO.	PAGE	OF TOTAL	DWG. NO.	REV.
	31785	OCXO 127-19	1	3	114-660	B

1. OUTPUT
     1.1. Frequency   3.000 MHz
                                             (At time of shipment set to $\pm 1 \times 10^{-8}$
                                             @ +25°C) (Cpk > 1.5)
                                             (<$\pm 3.3 \times 10^{-8}$ when tested by the
                                             customer, within 30 days of the
                                             date code, after on power for 30
                                             minutes.)
     1.2. Waveform   Sine wave
     1.3. Level   +15.5 dBm ±2.5 dB (Cpk > 1.5)
     1.4. Load   50 Ω ±5%
     1.5. Harmonics   < -20 dBc
     1.6. Spurious   < -80 dBc

2. FREQUENCY STABILITY
     2.1. Total   < $\pm 2 \times 10^{-7}$/year for Ambient, Aging,
                                             Voltage, and Load.
     2.2. Ambient   < $\pm 2.5 \times 10^{-8}$ from -30°C to +70°C
                                             (referenced to +25°C)
     2.3. Aging
          a. At time of shipment   < $\pm 6.5 \times 10^{-10}$/day
          b. After storage of up to 6 months
               i. Daily   < $\pm 7.5 \times 10^{-10}$ after 120 hours
               ii. Yearly   < $\pm 5 \times 10^{-8}$
               iii. 10 years   < $\pm 3 \times 10^{-7}$
     2.4. Voltage
          a. Oscillator   < $\pm 1 \times 10^{-9}$/±4% change
          b. Oven   < $\pm 3 \times 10^{-9}$/voltage range
     2.5. Load   < $\pm 1 \times 10^{-9}$/±5% change
     2.6. Phase noise   < -140 dBc @ 60 kHz
     2.7. Retrace   < $\pm 1 \times 10^{-7}$ after 5 minutes
                                             < $\pm 3.3 \times 10^{-8}$ after 30 minutes
                                             (at +25°C, referenced to turn-off
                                             frequency after specified aging is
                                             met, and following a maximum off
                                             time of 30 days.)

2.8. Shock, Vibration, & Retrace < ±3.3x10^{-8} from 3 MHz
The retrace is included in the SHOCK and VIBRATION. Procedure
steps: Set units to frequency as they would be done in production
enviroment, Remove units from power for a minimum of 6 hours,
Warm-up units for 30 minutes record frequency, shock (off power),
warm-up units for 30 minutes and record frequency, perform
vibration (off power), warm-up units for 30 minutes and record
frequency. The recorded frequencies must be within the specified
value from 3 MHz. The shock and vibration levels are:

    SHOCK:
    1/2 SINE pulse 50 g's for 6 ms three directions: ±X, ±Y, ±Z
    six times (18 times total)
    VIBRATION:
    10 - 60 Hz 0.06" double amplitude sine or 15 g's whichever
    is less. 1/2 hour per plane ±X, ±Y, ±Z.

3. MECHANICAL FREQUENCY ADJUSTMENT

3.1. Range	> ±1 PPM
3.2. Resolution	< ±1x10^{-8}
3.3. Control	Multi-turn trimmer

4. INPUT POWER

4.1. Oscillator

a. Voltage	+15 VDC ±4%
b. Current	< 50 mA

4.2. Oven

a. Voltage	+27 VDC +3 VDC, -6 VDC
b. Current	< 400 mA

5. ENVIRONMENTAL

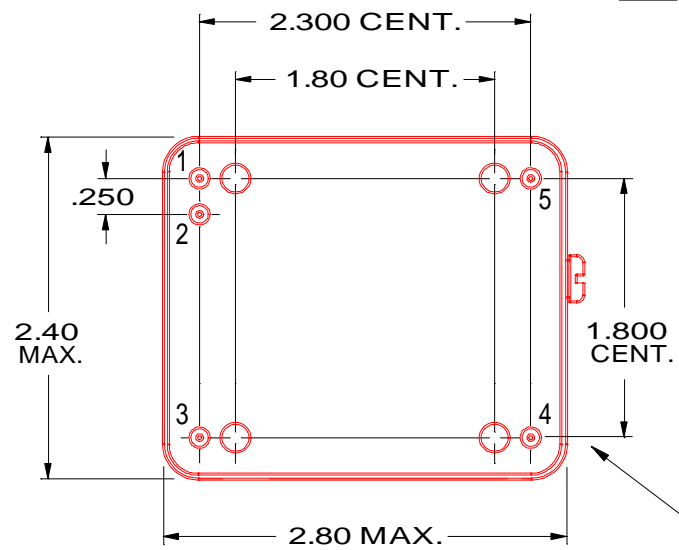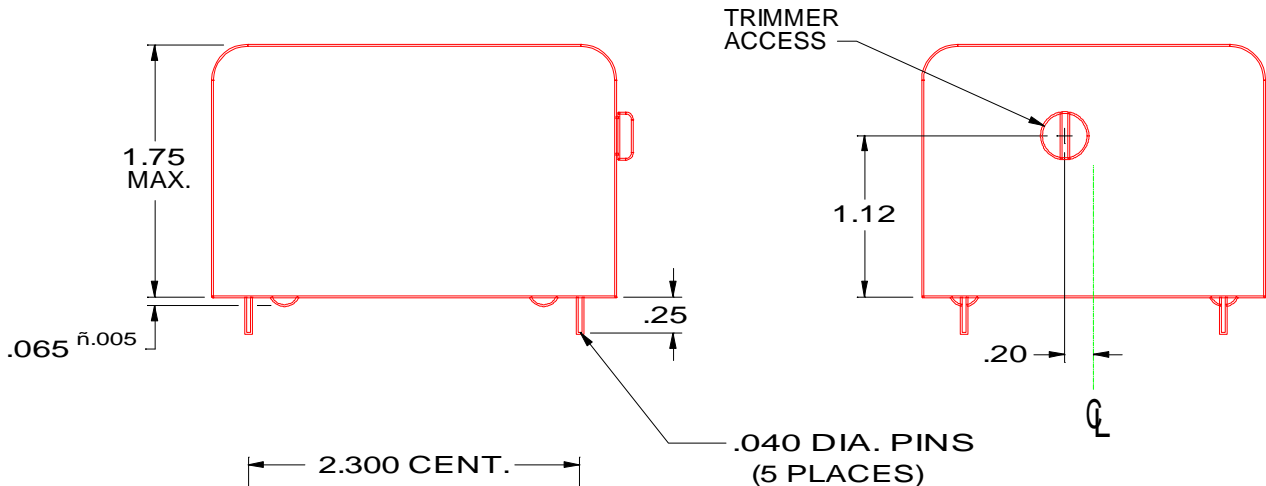|	
5.1. Humidity	MIL-STD-202F, Method 103B, Test Condition A, except at +50°C (95% R.H. @ +50°C, non-condensing, 240 hours)
5.2. Storage temperature	-40°C to +85°C
5.3. Vibration (non-operating)	See section 2.
5.4. Shock (non-operating)	See section 2.

6. MECHANICAL

6.1. Applicable series	OCXO 127 series
6.2. Model number	OCXO 127-19
6.3. Outline drawing	125-489

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P/N:
MODEL:
FREQ.:
S/N:
DATE:
CRYSTAL OSCILLATOR
FSC:031785
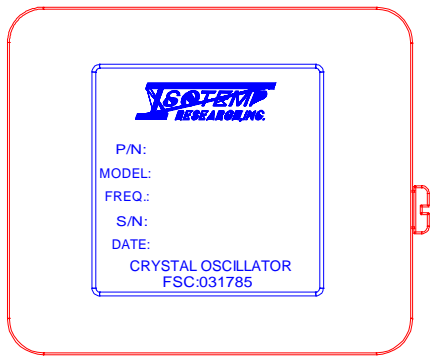
PIN CONNECTIONS

PIN	FUNCTION
1	R. F. OUTPUT
2	0 VOLTS & CASE
3	+VDC OSCILLATOR
4	0 VOLTS & CASE
5	+VDC OVEN

TRIMMER ACCESS

1.75 MAX.

1.12

.25

.20

$\mathbb{C}$L

.065 $^{ñ.005}$

.040 DIA. PINS
(5 PLACES)

2.300 CENT.

1.80 CENT.

.250

1

2

5

2.40 MAX.

1.800 CENT.

3

4

2.80 MAX.

NUMBERS FOR REFERENCE ONLY
(NOT STAMPED ON UNIT)

FORM NO. 120-081C

OSCILLATORS

CHARLOTTESVILLE, VIRGINIA

NAME: OUTLINE DRAWING
(OCXO 127 SERIES)

CODE I.D. NO.

31785

SCALE:.75:1 | DATE: 06-03-96

DWN. BY: TAD | APPR'D. BY: DAG

TOLERANCES
UNLESS OTHERWISE SPECIFIED:
ANGLES: ñ1 DEGREE
FRACTIONS: ñ1/32 INCH
DECIMALS: .XX ñ.015, .XXX ñ.010

MAT'L: COLD ROLLED STEEL

FINISH: BRIGHT NICKEL

MARK: LABEL

LET	REVISION	BY	APP	DATE

REV: -
SHT: 1 OF 1

DWG: 125-489