

INPUT**Frequency**

10 MHz

Level

+13 dBm ±2 dB into 50 ohms

OUTPUT**Frequency**

100 MHz

Level

+13 dBm ±2 dB into 50 ohms

STABILITY**Aging (free-running)**1 x 10⁻⁶ first year

after 30 days operating, typical

5 x 10⁻⁷ second year, typical3 x 10⁻⁷ per year thereafter, typical**Phase Noise L(f), (free-running)**

10 Hz -100 dBc/Hz

100 Hz -130 dBc/Hz

1 KHz -158 dBc/Hz

10 KHz -176 dBc/Hz

100 KHz -176 dBc/Hz

Temperature Stability±5 x 10⁻⁷ free-running from 0 to +50°C
(Ref. +25°C)**Harmonics**

-25 dBc

Sub-Harmonics

-80 dBc

PLL Reference Products

-80 dBc

Spurious-80 dBc, excluding power
supply line related spurs**Phase Lock Alarm**

TTL

Locked: +3.5 VDC to +5.2 VDC (Hi)

Out-of-Lock: +0.8 VDC max (Lo)

Phase Lock Voltage Monitor

Voltage monitor pin supplied

MECHANICAL**Dimensions**

4.40 x 4.00 x 1"

Connectors

RF Input/Output: SMA(f)

Power, Monitoring: Feed Thru Terminals

GND: Ground Turret

Packaging

Machined aluminum housing – J1PM

Mounting

Threaded inserts on base, 6 places

POWER REQUIREMENTS**Warm-Up Power**

≤ 14 Watts for 5 minutes

Total Power

≤ 12 Watts at +25°C

Supply Voltage

+15 VDC ±5%

ADJUSTMENT**Loop BW**

Target Bandwidth: ~300 Hz

Type 2 Loop

CRYSTAL**Type**

100 MHz SC-cut

OTHER**Design**

Includes x5 and x2 multipliers on the front end to multiply the 10 MHz input to 100 MHz for phase locking to the internal oscillator. Loop BW will be optimized for best close-in phase noise performance using a Wenzel 10 MHz ULN as the reference.

Label

Use conventional label with the following information:

501-24933 (Current Rev.)

100 MHz PL ULN

+15 VDC

Serial # - Date Code

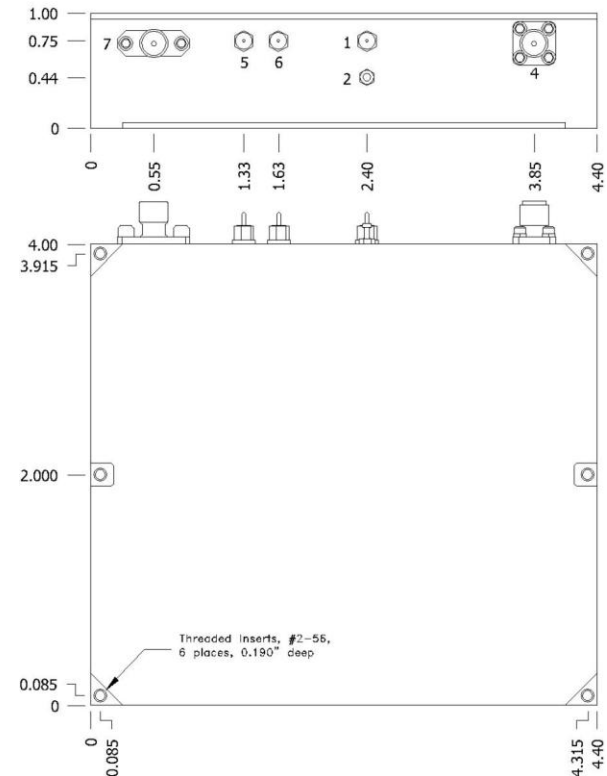
(Mark connectors with function)

Test Data

- Output Level
- Phase Noise – free-running and locked (locked performance using an in-house 10 MHz ULN or customer unit purchased at the same time)
- Harmonics, PLL Products, Spurious
- Power – Warm-up and Total

REV	DATE	REVISION RECORD	DWN	AUTH
-	09-06-11	Initial Release	Liz	
A	11-09-11	PLL Ref Products; Label Info; Drawing	PAC	

J1PM MXO Connections	
Connector	Function
1	Supply Voltage
2	Ground, Case
4	RF Output
5	Phase Lock Voltage
6	Phase Lock Alarm
7	External Reference Input

**Wenzel Associates, Inc.**

Austin, Texas

Title:

100 MHz PL Ultra Low Noise Crystal Oscillator

P/N:

501-24933

Rev:

A

Date:

11-09-11

Drawn:

Ref:

Tolerances:
(except as noted)
Dimensions are in inches0.XX Dec:
±0.030"0.XXX Dec:
±0.010"FSCM:
62821

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