

INPUT

Frequency

10 MHz

Level

+13 dBm ± 2 dB into 50 ohms

OUTPUT

Frequency

80 MHz

Level

+13 dBm ± 2 dB into 50 ohms

STABILITY

Aging (free-running)

1×10^{-6} first year

after 30 days operating, typical

5×10^{-7} second year, typical

3×10^{-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

$\pm 5 \times 10^{-7}$ free-running from 0 to +50°C
(Ref. +25°C)

Harmonics

-25 dBc

Sub-Harmonics

-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

Nickel-plated machined
aluminum housing – J1PM

Mounting

Threaded inserts on base, 6 places

POWER REQUIREMENTS

Warm-Up Power

≤ 11 Watts for 5 minutes

Total Power

≤ 7 Watts at +25°C

Supply Voltage

+15 VDC $\pm 5\%$

ADJUSTMENT

Loop BW

Target Bandwidth: ~300 Hz

Type 2 Loop

CRYSTAL

Type

80 MHz SC-cut

OTHER

Design

Includes x4 and x2 multipliers on the front
end to multiply the 10 MHz input to 80
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 Streamline as the
reference (≤ -140 dBc/Hz at 10 Hz offset)

Label

Use conventional label with the
following information:

501-27312 (Current Rev.)

80 MHz PL ULN

+15 VDC

Serial # - Date Code

(Mark connectors with function)

Test Data

- Output Level

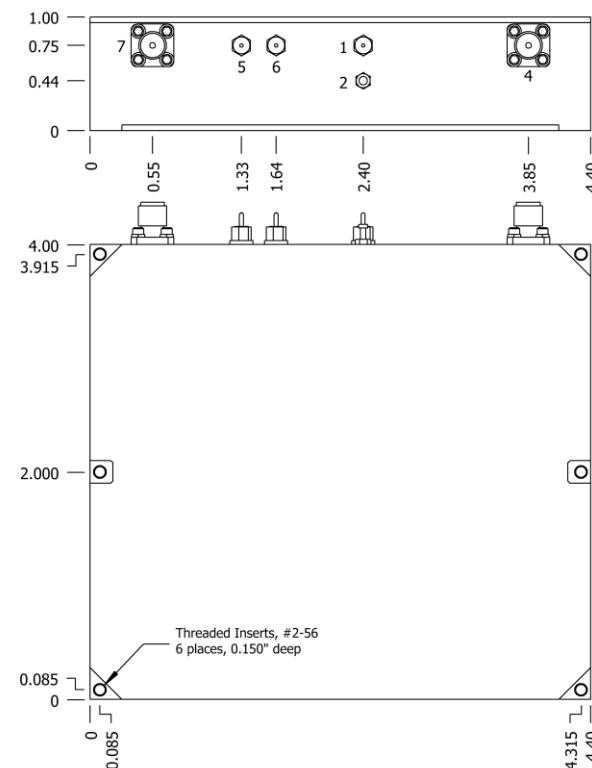
- Phase Noise – free-running

- Harmonics, PLL Products, Spurious

- Power – Warm-up and Total

REV	DATE	REVISION RECORD	DWN	AUTH
-	11-04-13	Initial Release	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:

80 MHz PL Ultra Low Noise Crystal Oscillator

P/N:

501-27312

Rev:

-

Date:

11-04-13

Drawn:

Ref:

Tolerances:
(except as noted)
Dimensions are in inches

0.XX Dec:

± 0.030 "

0.XXX Dec:

± 0.010 "

FSCM:

62821

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