**INPUT**

**Frequency**

10 MHz

**Level**

+13 dBm ±1 dB into 50 ohms

**OUTPUT**

**Frequency**

1 GHz

**Level**

+13 dBm ±2 dB into 50 ohms

**STABILITY**

**Aging (free-running)**

$1 \times 10^{-6}$ first year
after 30 days operating, typical
$5 \times 10^{-7}$ second year, typical
$3 \times 10^{-7}$ per year thereafter, typical

**Phase Noise L(f), (free-running)**

| | |
|---|---|
| 10 Hz | -77 dBc/Hz |
| 100 Hz | -109 dBc/Hz |
| 1 KHz | -136 dBc/Hz |
| 10 KHz | -153 dBc/Hz |
| 100 KHz | -154 dBc/Hz |

**Temperature Stability**

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

**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

**SPECTRAL PURTIY**

**Harmonics**

≤-25 dBc

**Sub-Harmonics**

≤-60 dBc

**PLL Reference Products**

≤-60 dBc

**Spurious**

≤-80 dBc, excluding power
supply line related spurs

**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,
#2-56, 6 places

**POWER REQUIREMENTS**

**Warm-Up Power**

≤ 11 Watts for 5 minutes

**Total Power**

≤ 8 Watts at +25°C

**Supply Voltage**

+12 VDC ±5%

**ADJUSTMENT**

**Loop BW**

Target Bandwidth: ~200 Hz
Type 2 Loop

**CRYSTAL**

**Type**

100 MHz SC-cut (x10)

**OTHER**

**Label**

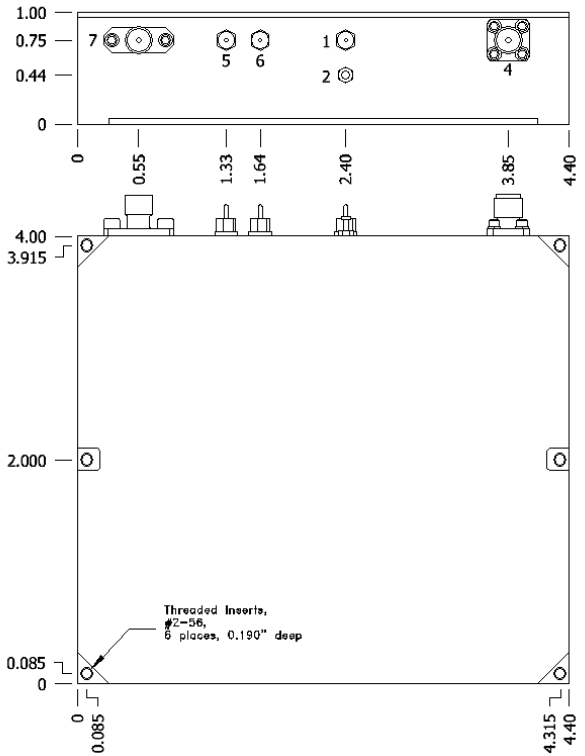
Use conventional label with the
following information:
501-28276 (Current Rev.)
1 GHz MXO-PLM
+12 VDC
Serial # - Date Code
(Mark connectors with function)

**Test Data**

Output Level
Phase Noise – free-running
Harmonics, Subs, Products, Spurious
Power – Warm-up and Total

| REV | DATE | REVISION RECORD | DWN | AUTH |
|---|---|---|---|---|
| - | 7-22-14 | Initial Release | CB | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| 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:
**1 GHz Multiplied Crystal Oscillator (MXO-PLM)**

| P/N: | Rev: | Date: | Drawn: | Ref: |
|---|---|---|---|---|
| **501-28276** | **-** | **07-22-14** | | |

| Tolerances: (except as noted) Dimensions are in inches | 0.XX Dec: | 0.XXX Dec: | FSCM: | Page 1 of 1 |
|---|---|---|---|---|
| | ±0.030” | ±0.015” | 62821 | |