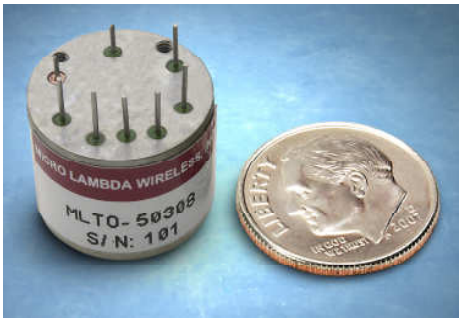
# MICRO LAMBDA WIRELESS, INC.

**SECOND GENERATION**
**MLTO SERIES (TO-8 .5")**
**PERMANENT MAGNET YTO's**




## FEATURES

- Up to 18 GHz Frequency Coverage
- FM/Phase-Lock Port
- TO-8 Package
- High Reliability

## DESCRIPTION

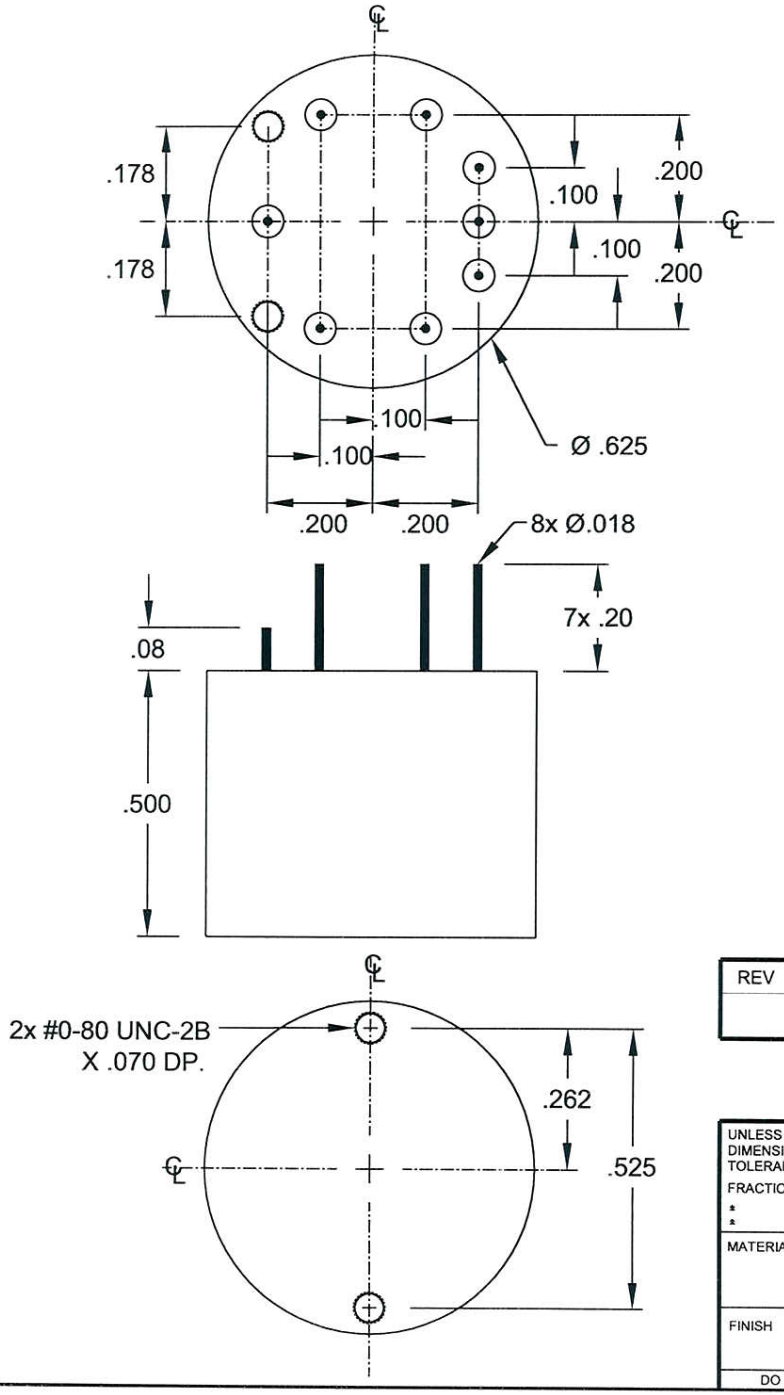
The MICRO LAMBDA **MLTO**-Series Permanent Magnet YIG-Tuned Oscillators cover the frequency range of 3-18 GHz. They are available in customer selected tuning ranges and are fitted with a low power main coil, and FM coil for phase locking. All units operate from a +8 Volt and –5 Volt supply and operate over the 0º to + 65ºC temperature range. Units do not require a heater.

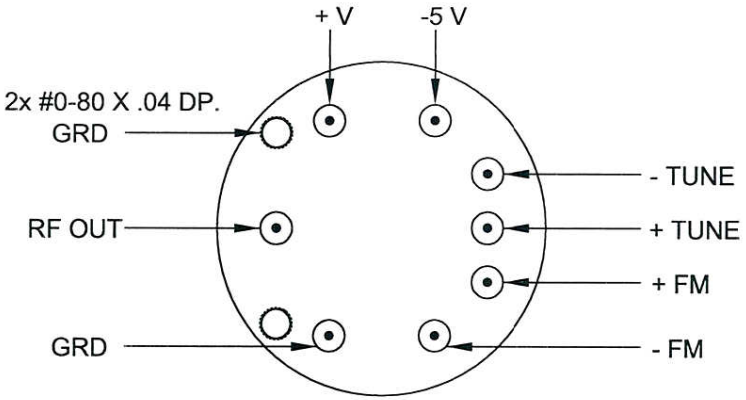
## ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at 0º to +65º C Case Temperature

| **Model No.** | **MLTO-50365** | **MLTO-50409** | **MLTO-50613** | **MLTO-50816** |
|---|---|---|---|---|
| Frequency Range, Min. | 3.0-6.5 GHz | 4.0-9.0 GHz | 6.5-13.0 GHz | 7.9-16.1 GHz |
| Free Run Frequency | 4.7 GHz | 6.5 GHz | 9.6 GHz | 12 GHz |
| Free Run Frequency Settability | +/- 200 MHz | +/- 200 MHz | +/- 200 MHz | +/- 200 MHz |
| Power Output, Min. | +10 dBm | +9 dBm | +9 dBm | +7 dBm |
| Power Output Variation, Max. | 3 dB | 4 dB | 4 dB | 4 dB |
| Freq. Drift over Temp., Max. | +/-25 MHz | +/-25 MHz | +/-20 MHz | +/-30 MHz |
| Pulling Figure (12 dB RL), Typ. | 2 MHz | 2 MHz | 2 MHz | 2 MHz |
| Pushing Figure +8 Vdc, Typ. | 2 MHz/V | 2 MHz/V | 2 MHz/V | 2 MHz/V |
| Harmonics, Min. | -12 dBc | -12 dBc | -12 dBc | -12 dBc |
| Spurious Output, Min. | -70 dBc | -70 dBc | -70 dBc | -70 dBc |
| Phase Noise @ 10kHz Offset, Typ. | -100 dBc/Hz | -100 dBc/Hz | -98 dBc/Hz | -98 dBc/Hz |
| @ 100kHz Offset, Min. | -125 dBc/Hz | -125 dBc/Hz | -124 dBc/Hz | -124 dBc/Hz |
| @ 100 kHz Offset, Typ | -128 dBc/Hz | -128 dBc/Hz | -126 dBc/Hz | -126 dBc/Hz |
| Main Coil | | | | |
| Sensitivity, Typ. | 9 MHz/mA | 15 MHz/mA | 12 MHz/mA | 8 MHz/mA |
| Linearity, Typ. | +/-6 MHz | +/-9 MHz | +/-6 MHz | +/-10 MHz |
| Hysteresis, Typ. | 6 MHz | 8 MHz | 17 MHz | 15 MHz |
| Impedance @ 1 kHz, Typ. | 6 Ohm/10 mH | 20 Ohm/30 mH | 25 Ohm/25 mH | 8 Ohm/20 mH |
| FM Coil | | | | |
| Sensitivity, Typ. | 150 kHz/ma | 150 kHz/ma | 230 kHz/ma | 280 kHz/ma |
| 3 dB Bandwidth, Min. | 1 MHz | 1 MHz | 1 MHz | 1 MHz |
| Deviation @ 400 kHz, Min. | +/- 50 MHz | +/- 50 MHz | +/- 50 MHz | +/- 50 MHz |
| Impedance @ 1 MHz, Typ. | 1.0 Ohm/1.0 uH | 1.0 Ohm/1.0 uH | 1.0 Ohm/1.0 uH | 1.0 Ohm/1.0 uH |
| DC Power, Max. +8.0 Vdc +/- 0.5 V | 60 mA | 60 mA | 60 mA | 60 mA |
| -5.0 Vdc +/- 0.25 V | 20 mA | 20 mA | 15 mA | 15 mA |
| Case Style | 91-001 | 91-001 | 91-001 | 91-001 |

Micro Lambda Wireless, Inc. - 46515 Landing Parkway, Fremont California 94538 * Phone (510) 770-9221 * Fax (510) 770-9213




PIN OUT

WEIGHT: .56 Oz ( 16g )

| REV | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| | | | |

UNLESS OTHERWISE SPECCIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE :

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| ± | .xx ±.010 | |
| ± | .xxx ±.005 | |

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | | DATE |
|---|---|---|
| DRAWN | N.NGUYEN | 11/18/09 |
| CHECKED | | 11/18/09 |
| ISSUED | | |

MICRO LAMBDA WIRELESS, INC.

*PC MOUNT OSCILLATOR*

*( ø .625" X .500" HIGH )*

| SIZE | CAGE No. | DWG. NO. | REV. |
|---|---|---|---|
| | 0RN63 | 91 - 001 | |

SCALE SHEET