

## FEATURES

- Up to 13 GHz Frequency Coverage
- FM/Phase-Lock Port
- Surface Mount Package
- High Reliability



## DESCRIPTION

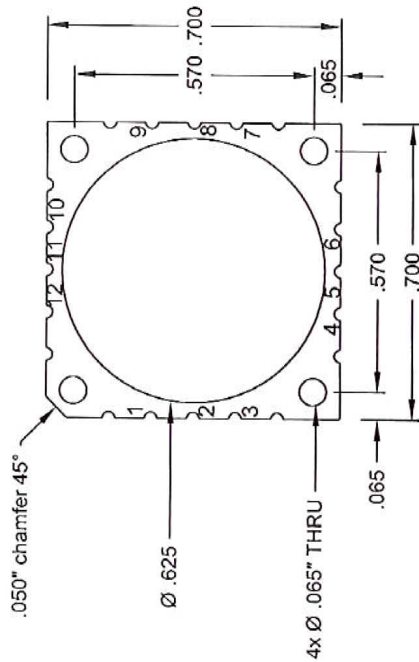
The MICRO LAMBDA **MLSMO**-Series Permanent Magnet YIG-Tuned Oscillators cover the frequency range of 2-13 GHz. They are available in customer selected tuning ranges and are fitted with a low power main coil, and FM coil for phase locking. All units operate from a +8 Volt and -5 Volt supply and operate over the 0° to +65°C temperature range. Units do not require a heater.

## ELECTRICAL AND PERFORMANCE SPECIFICATIONS

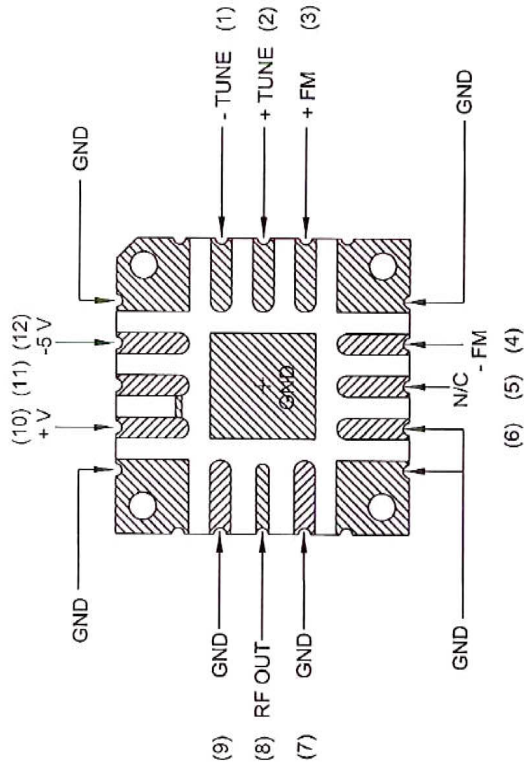
Guaranteed Specifications at 0° to +65° C Case Temperature

| Model No.                         | MLSMO-50204 | MLSMO-50306 | MLSMO-50308 | MLSMO-50409   | MLSMO-50613    |
|-----------------------------------|-------------|-------------|-------------|---------------|----------------|
| Frequency Range, Min.             | 2-4 GHz     | 3-6 GHz     | 3-8 GHz     | 4-9 GHz       | 6.5-13 GHz     |
| Free Run Frequency                | 3 GHz       | 4.5 GHz     | 5.5 GHz     | 6.5 GHz       | 9.6 GHz        |
| Free Run Frequency Settability    | +/- 300 MHz | +/- 300 MHz | +/- 300 MHz | +/- 300 MHz   | +/- 300 MHz    |
| Power Output, Min.                | +8 dBm      | +8 dBm      | +8 dBm      | +8 dBm        | +8 dBm         |
| Power Output Variation, Max.      | 4 dB        | 4 dB        | 4 dB        | 4 dB          | 4 dB           |
| Freq. Drift over Temp., Max.      | +/-10 MHz   | +/-10 MHz   | +/-10 MHz   | +/-25 MHz     | +/-20 MHz      |
| Pulling Figure (12 dB RL), Typ.   | 2 MHz       | 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       | 2 MHz/V        |
| Harmonics, Min.                   | -15 dBc     | -15 dBc     | -15 dBc     | -12 dBc       | -12 dBc        |
| Spurious Output, Min.             | -70 dBc     | -70 dBc     | -70 dBc     | -70 dBc       | -70 dBc        |
| Phase Noise @ 10kHz Offset Min.   | -103 dBc/Hz | -103 dBc/Hz | -103 dBc/Hz | -103 dBc/Hz   | -100 dBc/Hz    |
| @ 100kHz Offset Min.              | -125 dBc/Hz | -125 dBc/Hz | -125 dBc/Hz | -125 dBc/Hz   | -125 dBc/Hz    |
| <b>Main Coil</b>                  |             |             |             |               |                |
| Sensitivity, Typ.                 | 9.7 MHz/mA  | 9.7 MHz/mA  | 9.7 MHz/mA  | 9.7 MHz/mA    | 12 MHz/mA      |
| Linearity, Typ.                   | +/-4 MHz    | +/-6 MHz    | +/-9 MHz    | +/-9 MHz      | +/-6 MHz       |
| Hysteresis, Typ.                  | 4 MHz       | 6 MHz       | 8 MHz       | 8 MHz         | 17 MHz         |
| Impedance @ 1 kHz, Typ.           | 9 Ohm/30 mH | 9 Ohm/30 mH | 9 Ohm/30 mH | 9 Ohm/30 mH   | 25 Ohm/30 mH   |
| <b>FM Coil</b>                    |             |             |             |               |                |
| Sensitivity, Typ.                 | 300 kHz/ma  | 300 kHz/ma  | 300 kHz/ma  | 300 kHz/ma    | 230 kHz/ma     |
| 3 dB Bandwidth, Typ.              | 1 MHz       | 1 MHz       | 1 MHz       | 1 MHz         | 1 MHz          |
| Deviation @ 400 kHz, Min.         | +/- 50 MHz  | +/- 50 MHz  | +/- 50 MHz  | +/- 50 MHz    | +/- 50 MHz     |
| Impedance @ 1 MHz, Typ.           | .7 Ohm/1 uH | .7 Ohm/1 uH | .7 Ohm/1 uH | .7 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         | 60 mA          |
| -5.0 Vdc +/- 0.25 V               | 15 mA       | 15 mA       | 15 mA       | 15 mA         | 15 mA          |
| Case Style                        | 99-0091-009 | 99-0091-009 | 99-0091-009 | 99-0091-009   | 99-0091-009    |

# TOP VIEW



# BOTTOM VIEW



WEIGHT: .56 Oz. [16g]

### NOTES:

1. PCB LAYOUT INFO. AVAILABLE ON REQUEST.
2. TWO +V PINS ARE AVAILABLE FOR CONNECTION [PIN'S 10 & 11], ONLY ONE IS REQ. FOR OPERATION.
3. ALL PCB TRACES ARE GOLD PLATED.
4. HAND SOLDER OR MOUNT WITH (4) #0-80 SCREWS AND #0 LIGHT SPLIT LOCK WASHER/STAINLESS STEEL.
5. NO REFLOW SOLDER OR SUBMERSED CLEANING.

### ABSOLUTE MAXIMUM RATINGS:

+ V = -0.3V TO +8.5V ; -V = +0.3V TO -5.5V  
 FM COIL ≤ 250mA ; TUNE COIL ≤ 1200mA

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

|  |  |   |                      |
|--|--|---|----------------------|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES<br>TOLERANCE ARE:<br>FRACTIONS DECIMALS ANGLES<br>* .XX ±.02<br>* .XXX ±.010 |  | CONTRACT NO.                                      |                      |
| MATERIAL   |  | APPROVALS   | DATE                 |
| FINISH   |  | DRAWN N. NGUYEN                                   | 3/27/12              |
| DO NOT SCALE DRAWING   |  | CHECKED DS  | 7/27/12              |
|  |  | ISSUED  |                      |
|  |  | SCALE   | SHEET                |
|  |  | CAGE NO. 0RN63                                    | DWG. NO. 99-0091-009 |
|  |  | SIZE  | REV.                 |
|  |  | MICRO LAMBDA WIRELESS, INC.                       |                      |
|  |  | SURFACE MOUNT YIG OSC.<br>(.7" X .7 X .562" HIGH) |                      |