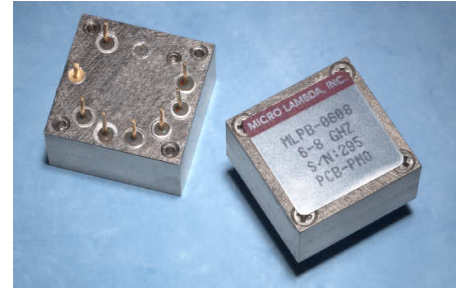


FEATURES

- 2-8 GHz Frequency Coverage
- FM/Phase-Lock Port
- Miniature Size
- High Reliability
- PC Board Mount Compatible

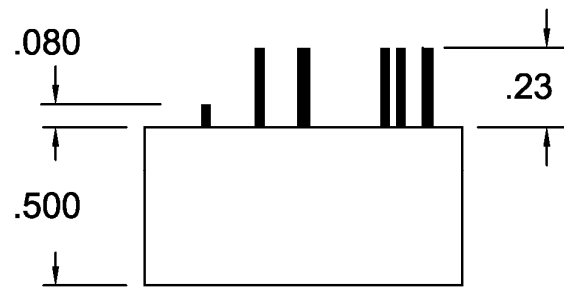
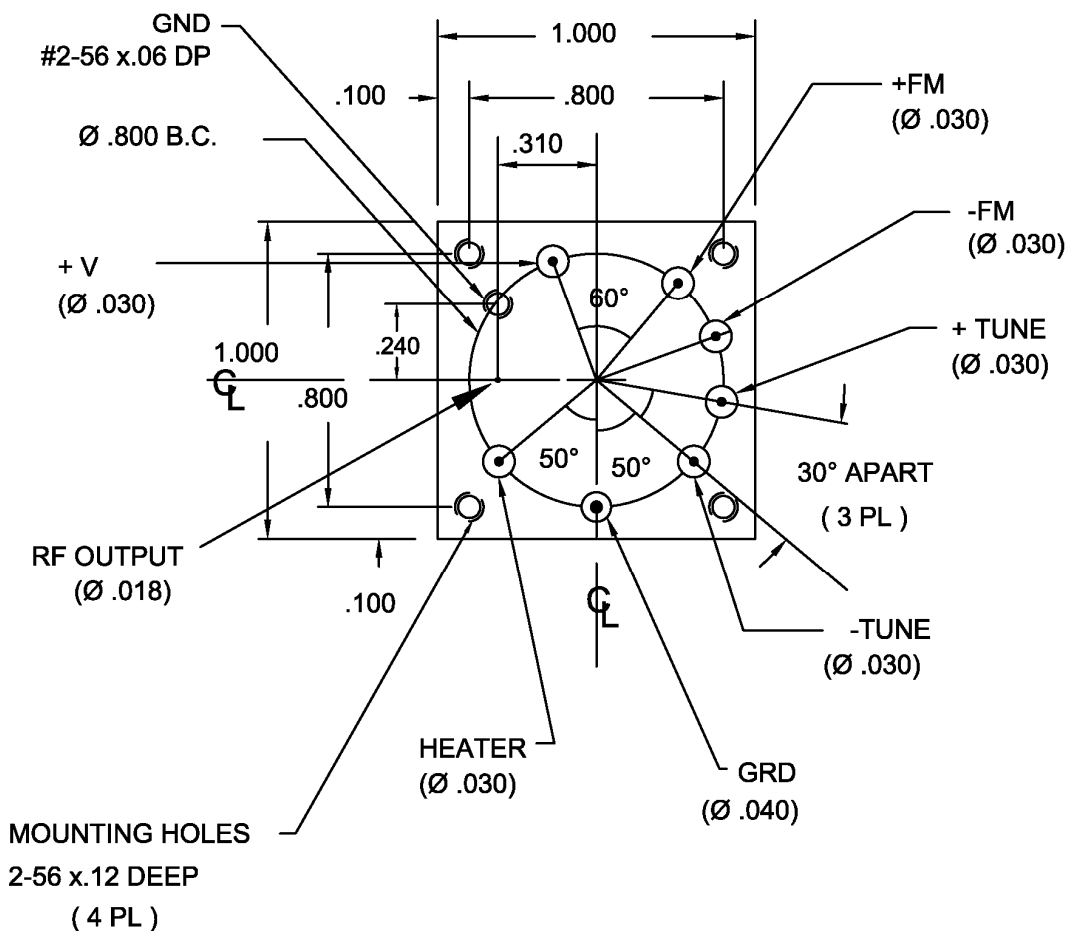

DESCRIPTION

The MICRO LAMBDA MLPB-Series Miniature Permanent Magnet YIG-Tuned oscillators are signal sources covering the frequency range of 2-8 GHz. These oscillators have been designed specifically for commercial applications where small size at low cost is the primary consideration. The oscillator utilizes a bipolar transistor coupled to a YIG sphere in a thin-film oscillator circuit. YIG heaters with low surge currents are used to maintain temperature stability. These oscillators have been designed specifically for mounting to industry standard PC board mediums. Standard size is 1 " x 1 " x .5" and weigh one ounce.


ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at -20° to $+70^{\circ}$ C Case Temperature

| Model No. | MLPB-0204 | MLPB-0305 | MLPB-0406 | MLPB-0507 | MLPB-0608 |
|--|------------------|------------------|------------------|------------------|------------------|
| Frequency Range, Min. | 2-4 GHz | 3-5 GHz | 4-6 GHz | 5-7 GHz | 6-8 GHz |
| Free Run Frequency (w/o Main Coil) | 3 GHz | 4 GHz | 5 GHz | 6 GHz | 7 GHz |
| Power Output, Min. | +15 dBm | +14 dBm | +14 dBm | +14 dBm | +14 dBm |
| Power Output Variation, Max. | +/- 1 dB | +/- 1 dB | +/- 1 dB | +/- 1 dB | +/- 1 dB |
| Frequency Drift over Temperature, Max. | 20 MHz | 20 MHz | 20 MHz | 20 MHz | 20 MHz |
| Pulling Figure (12 dB RL), Typ. | 1 MHz | 1 MHz | 1 MHz | 1 MHz | 1 MHz |
| Pushing Figure +12 Vdc Supply, Typ. | 0.1 MHz/V | 0.1 MHz/V | 0.1 MHz/V | 0.1 MHz/V | 0.1 MHz/V |
| 2nd Harmonic, Min. | -12 dBc | -12 dBc | -12 dBc | -12 dBc | -12 dBc |
| 3rd Harmonic, Min. | -20 dBc | -20 dBc | -20 dBc | -20 dBc | -20 dBc |
| Spurious Output, Min. | -70 dBc | -70 dBc | -70 dBc | -70 dBc | -70 dBc |
| Phase Noise @ 10kHz Offset min | -100 dBc/Hz | -100 dBc/Hz | -100 dBc/Hz | -100 dBc/Hz | -100 dBc/Hz |
| @ 100kHz Offset min | -125 dBc/Hz | -125 dBc/Hz | -125 dBc/Hz | -125 dBc/Hz | -125 dBc/Hz |
| @ 100kHz Offset typ. | -128 dBc/Hz | -128 dBc/Hz | -128 dBc/Hz | -128 dBc/Hz | -128 dBc/Hz |
| Main Coil | | | | | |
| Sensitivity, Typ. | 10 MHz/mA | 10 MHz/mA | 10 MHz/mA | 10 MHz/mA | 10 MHz/mA |
| Linearity, Typ. | 1 MHz | 1 MHz | 1 MHz | 1 MHz | 1 MHz |
| Hysteresis, Typ. | 1 MHz | 1 MHz | 1 MHz | 1 MHz | 1 MHz |
| Input Impedance @ 1 kHz, Typ. | 30 Ohm / 20 mH | 30 Ohm / 20 mH | 30 Ohm / 20 mH | 30 Ohm / 20 mH | 30 Ohm / 20 mH |
| FM Coil | | | | | |
| Sensitivity, Typ. | 310 kHz/ma | 310 kHz/ma | 310 kHz/ma | 310 kHz/ma | 310 kHz/ma |
| 3 dB Bandwidth, Typ. | 400 kHz | 400 kHz | 400 kHz | 400 kHz | 400 kHz |
| Deviation @ 400 kHz Rate, Min. | +/- 50 MHz | +/- 50 MHz | +/- 50 MHz | +/- 50 MHz | +/- 50 MHz |
| Input Impedance @ 1 MHz, Typ. | 1.0 Ohm / 2.0uH | 1.0 Ohm / 2.0uH | 1.0 Ohm / 2.0uH | 1.0 Ohm / 2.0uH | 1.0 Ohm / 2.0uH |
| DC Circuit Power, Max.+12 Vdc +/- 5% | 100 mA | 100 mA | 100 mA | 100 mA | 100 mA |
| YIG Heater Power | | | | | |
| Input Voltage Range | +15 Vdc | +15 Vdc | +15 Vdc | +15 Vdc | +15 Vdc |
| Current Surge/Steady State, Max. | 250 mA / 50 mA | 250 mA / 50 mA | 250 mA / 50 mA | 250 mA / 50 mA | 250 mA / 50 mA |
| Case Style | 61-053 | 61-053 | 61-053 | 61-053 | 61-053 |



WEIGHT: 1 Oz.

| | | | | |
|---|--------------|--------------|-----------|---|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE: | | CONTRACT NO. | |  MICRO LAMBDA, INC. |
| FRACTIONS | DECIMALS | ANGLES | | |
| • | .xx ±.01 | ° | | |
| • | .xxx ±.005 | | | |
| MATERIAL | CARPENTER 49 | APPROVALS | DATE | |
| FINISH | | DRAWN | N. NGUYEN | 10/10/01 |
| | | CHECKED | | |
| | | ISSUED | | |
| DO NOT SCALE DRAWING | | | | PCB MOUNTABLE PMO |
| SIZE | CAGE No | DWG. NO. | REV. | |
| | 0RN63 | 61 - 053 | E | |