DESCRIPTION

The Micro Lambda low noise, extreme wide band Fundamental YIG Tuned Oscillators cover the frequency band of 2-20 GHz. This oscillator series offers SUPERIOR PHASE NOISE performance of –120 dBc/Hz @ 100 kHz offset at 18 GHz and –110 dBc/Hz at 20 GHz. They make ideal local oscillators for synthesizers, receivers, sweep generators and other specialized test equipment.

ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at 0º to +65º C Case Temperature (Note 1)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>MLXB-0220P</th>
<th>MLXB-0220</th>
<th>MLXS-0220P</th>
<th>MLXS-0220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range, Min.</td>
<td>2-20 GHz</td>
<td>2-20 GHz</td>
<td>2-20 GHz</td>
<td>2-20 GHz</td>
</tr>
<tr>
<td>Power Output, Min.</td>
<td>+9 dBm</td>
<td>+12 dBm</td>
<td>+9 dBm</td>
<td>+12 dBm</td>
</tr>
<tr>
<td>Power Output Variation, Max.</td>
<td>+/- 3 dB</td>
<td>+/- 3 dB</td>
<td>+/- 3 dB</td>
<td>+/- 3 dB</td>
</tr>
<tr>
<td>Frequency Drift over Temperature, Max.</td>
<td>25 MHz</td>
<td>25 MHz</td>
<td>25 MHz</td>
<td>25 MHz</td>
</tr>
<tr>
<td>Pulling Figure (12 dB RL), Typ.</td>
<td>1 MHz</td>
<td>1 MHz</td>
<td>1 MHz</td>
<td>1 MHz</td>
</tr>
<tr>
<td>Pushing Figure +15 Vdc Supply, Typ.</td>
<td>0.1 MHz/V</td>
<td>0.1 MHz/V</td>
<td>0.1 MHz/V</td>
<td>0.1 MHz/V</td>
</tr>
<tr>
<td>Magnetic Susceptibility @ 60 Hz, Typ.</td>
<td>50 kHz/ gauss</td>
<td>50 kHz/ gauss</td>
<td>50 kHz/ gauss</td>
<td>50 kHz/ gauss</td>
</tr>
<tr>
<td>2nd Harmonic, Min. @ 25ºC</td>
<td>-12 dBc</td>
<td>-12 dBc</td>
<td>-12 dBc</td>
<td>-12 dBc</td>
</tr>
<tr>
<td>3rd Harmonic, Min. @ 25ºC</td>
<td>-15 dBc</td>
<td>-15 dBc</td>
<td>-15 dBc</td>
<td>-15 dBc</td>
</tr>
<tr>
<td>Spurious Output, Min.</td>
<td>-70 dBc</td>
<td>-70 dBc</td>
<td>-70 dBc</td>
<td>-70 dBc</td>
</tr>
<tr>
<td>Phase Noise @ 100kHz Offset</td>
<td>From 2-12 GHz</td>
<td>-123 dBc/Hz</td>
<td>-120 dBc/Hz</td>
<td>-123 dBc/Hz</td>
</tr>
<tr>
<td></td>
<td>From 12-18 GHz</td>
<td>-120 dBc/Hz</td>
<td>-112 dBc/Hz</td>
<td>-120 dBc/Hz</td>
</tr>
<tr>
<td></td>
<td>From 18-20 GHz</td>
<td>-110 dBc/Hz</td>
<td>-107 dBc/Hz</td>
<td>-110 dBc/Hz</td>
</tr>
<tr>
<td>Main Coil</td>
<td>Sensitivity, Typ.</td>
<td>18 MHz/mA</td>
<td>18 MHz/mA</td>
<td>20 MHz/mA</td>
</tr>
<tr>
<td></td>
<td>3 dB Bandwidth, Typ.</td>
<td>5 kHz</td>
<td>5 kHz</td>
<td>5 kHz</td>
</tr>
<tr>
<td></td>
<td>Linearity, Typ.</td>
<td>+/- 0.1 %</td>
<td>+/- 0.1 %</td>
<td>+/- 0.1 %</td>
</tr>
<tr>
<td></td>
<td>Hysteresis, Typ.</td>
<td>14 MHz</td>
<td>16 MHz</td>
<td>14 MHz</td>
</tr>
<tr>
<td></td>
<td>Input Impedance @ 1 kHz, Typ.</td>
<td>7 Ohm /40 mH</td>
<td>7 Ohm /40 mH</td>
<td>6 Ohm /60 mH</td>
</tr>
<tr>
<td>FM Coil</td>
<td>Sensitivity, Typ.</td>
<td>410 kHz/ma</td>
<td>410 kHz/ma</td>
<td>410 kHz/ma</td>
</tr>
<tr>
<td></td>
<td>3 dB Bandwidth, Typ.</td>
<td>1 MHz</td>
<td>1 MHz</td>
<td>1 MHz</td>
</tr>
<tr>
<td></td>
<td>Deviation @ 400 kHz Rate, Min.</td>
<td>40 MHz</td>
<td>40 MHz</td>
<td>40 MHz</td>
</tr>
<tr>
<td></td>
<td>@ 1 MHz Rate, Min.</td>
<td>20 MHz</td>
<td>20 MHz</td>
<td>20 MHz</td>
</tr>
<tr>
<td></td>
<td>Input Impedance @ 1 MHz, Typ.</td>
<td>1.0 Ohm /2uH</td>
<td>1.0 Ohm /2uH</td>
<td>1.0 Ohm /2uH</td>
</tr>
<tr>
<td></td>
<td>DC Circuit Power, +15 Vdc Supply, Max.</td>
<td>100 mA</td>
<td>100 mA</td>
<td>100 mA</td>
</tr>
<tr>
<td></td>
<td>-5 Vdc Supply, Max.</td>
<td>20 mA</td>
<td>20 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td>YIG Heater Power</td>
<td>Input Voltage Range</td>
<td>+24 +/- 4 Vdc</td>
<td>+24 +/- 4 Vdc</td>
<td>+24 +/- 4 Vdc</td>
</tr>
<tr>
<td></td>
<td>Current Surge/Steady State, Max.</td>
<td>250 mA / 25 mA</td>
<td>250 mA / 25 mA</td>
<td>250 mA / 25 mA</td>
</tr>
<tr>
<td></td>
<td>Case Style</td>
<td>11-023-1</td>
<td>11-023-1</td>
<td>11-137</td>
</tr>
</tbody>
</table>

Note: 1. –40 to +85 ºC is available.

MICRO LAMBDA WIRELESS, INC.

LOW NOISE FUNDAMENTAL BAND
YIG TUNED OSCILLATORS 2-20 GHz
EXTREME WIDE BAND SERIES

FEATURES

- 2-20 GHz Continuous Coverage
- Excellent Phase Noise
- FM/Phase Lock Port
- Excellent Linearity
- High Reliability
Outline Drawing: 11-023-1

Outline Drawing: 11-137