

## FEATURES

- 2-14 GHz Frequency Coverage
- Tunable in 2 GHz wide frequency bands
- FM/Phase-Lock Port
- Miniature Size
- High Reliability
- **Bi-Polar Circuits**



## DESCRIPTION

The MICRO LAMBDA MLPM-Series Permanent Magnet YIG-Tuned Oscillators cover the frequency range of 2-14 GHz. They are available in customer selected 2 GHz tuning bandwidths and are fitted with a low power main coil, and FM coil for phase locking. All units operate from a single +12 Volt supply and operate over the -20° to +70°C temperature range. Units are compliant with ANSI/ETSI thermal, shock and vibration requirements. They are ideal for QAM modulated digital radios where microphonics and phase-hits are not tolerated.

Bi-Polar technology is provided across 2-14 GHz for superior fundamental and frequency multiplied phase noise. Units are available in a standard 1" x 1" x .5" configuration with a field replaceable RF connector and weigh one ounce.

## ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at -20° to +70° C Case Temperature

<b>Model No. ( Bi-Polar )</b>	<b>MLPM-0204</b>	<b>MLPM-0305</b>	<b>MLPM-0406</b>	<b>MLPM-0507</b>	<b>MLPM-0608</b>	<b>MLPM-0709</b>
Frequency Range, Min.	2-4 GHz	3-5 GHz	4-6 GHz	5-7 GHz	6-8 GHz	7-9 GHz
Free Run Frequency	3 GHz	4 GHz	5 GHz	6 GHz	7 GHz	8 GHz
Power Output, Min.	+14 dBm	+14 dBm	+14 dBm	+14 dBm	+13 dBm	+14 dBm
Power Output Variation, Max.	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB
Freq. Drift over Temp., Max.	20 MHz	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	1 MHz
Pushing Figure +12 Vdc, Typ.	0.1 MHz/V	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	-12 dBc
3rd Harmonic, Min.	-20 dBc	-20 dBc	-20 dBc	-20 dBc	-20 dBc	-20 dBc
Spurious Output, Min.	-70 dBc	-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	-100 dBc/Hz
@ 100kHz Offset min	-125 dBc/Hz	-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	-128 dBc/Hz
<b>Main Coil</b>						
Sensitivity, Typ.	9 MHz/mA	9 MHz/mA	9 MHz/mA	9 MHz/mA	9 MHz/mA	9 MHz/mA
Linearity, Typ.	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz
Hysteresis, Typ.	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz
Impedance @ 1 kHz, Typ.	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH
<b>FM Coil</b>						
Sensitivity, Typ.	310 kHz/ma	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	400 kHz
Deviation @ 400 kHz, Min.	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz
Impedance @ 1 MHz, Typ.	10hm/2 uH	10hm/2 uH	10hm/2 uH	10hm/2 uH	10hm/2 uH	10hm/2 uH
DC Power, Max. +12 Vdc	100 mA	100 mA	100 mA	100 mA	100 mA	100 mA
-5 Vdc	-	-	-	-	-	-
<b>YIG Heater Power</b>						
Input Voltage Range	+15 Vdc	+15 Vdc	+15 Vdc	+15 Vdc	+15 Vdc	+15 Vdc
Current Surge/Steady State	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA
Case Style	61-040-4	61-040-4	61-040-4	61-040-4	61-040-4	61-040-4

# MLPM SERIES - CONTINUED

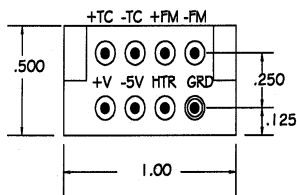
## ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at -20° to +70° C Case Temperature

Model No. (Bi-Polar)	MLPM-0810	MLPM-0911	MLPM-1012	MLPM-1113	MLPM-1214
Frequency Range, Min.	8-10 GHz	9-11 GHz	10-12 GHz	11-13 GHz	12-14 GHz
Free Run Frequency	9 GHz	10 GHz	11 GHz	12 GHz	13 GHz
Power Output, Min.	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+13 dBm
Power Output Variation, Max.	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB
Freq. Drift over Temp., 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, 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
<b>Main Coil</b>					
Sensitivity, Typ.	9 MHz/ma	9 MHz/ma	9 MHz/ma	9 MHz/ma	9 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
Impedance @ 1 kHz, Typ.	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH	70 Ohm/15 mH
<b>FM Coil</b>					
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
Impedance @ 1 MHz, Typ.	10hm/2 uH	10hm/2 uH	10hm/2 uH	10hm/2 uH	10hm/2 uH
DC Circuit Power, Max. +12 Vdc	100 mA	100 mA	120 mA	120 mA	120 mA
-5 Vdc	-	35 mA	35 mA	35 mA	35 mA
<b>YIG Heater Power</b>					
Input Voltage Range	+15 Vdc	+15 Vdc	+15 Vdc	+15 Vdc	+15 Vdc
Current Surge/Steady State	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA
Case Style	61-040-4	61-040-3	61-040-3	61-040-3	61-040-3

**Outline Drawing  
61-040-3**

**Weight: 1 Ounce**



**Outline Drawing  
61-040-4**

**Weight: 1 Ounce**

