



FEATURES

- 9-20 GHz Frequency Coverage
- Tunable in 2 GHz wide frequency bands
- FM/Phase-Lock Port
- Miniature Size
- High Reliability
- **FET Circuits**



DESCRIPTION

The MICRO LAMBDA MLPM-Series Permanent Magnet YIG-Tuned Oscillators cover the frequency range of 9-20 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.

FET technology is provided across 920 GHz for cost effective fundamental and frequency applications. 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

Model No. (FET)	MLPM-0911F	MLPM-1012F	MLPM-1113F	MLPM-1214F	MLPM-1315F
Frequency Range, Min.	9-11 GHz	10-12 GHz	11-13 GHz	12-14 GHz	13-15 GHz
Free Run Frequency	10 GHz	11 GHz	12 GHz	13 GHz	14 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	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz
@ 100kHz Offset	-115 dBc/Hz	-115 dBc/Hz	-115 dBc/Hz	-115 dBc/Hz	-115 dBc/Hz
Main Coil					
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
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, Min.	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz	+/- 50 MHz
Impedance @ 1 MHz, Typ.	1.0Ohm/2.0 uH	1.0Ohm/2.0 uH	1.0Ohm/2.0 uH	1.0Ohm/2.0 uH	1.0Ohm/2.0 uH
DC Power, Max. +12 Vdc	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	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

MLPM SERIES - CONTINUED

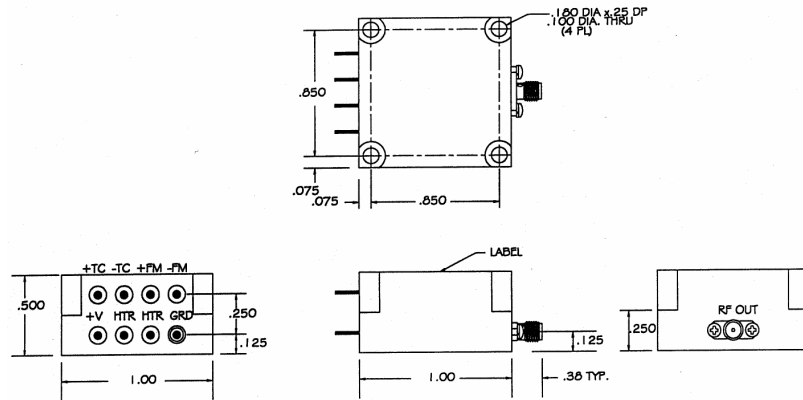
ELECTRICAL AND PERFORMANCE SPECIFICATIONS

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

Model No. (FET)	MLPM-1416F	MLPM-1517F	MLPM-1618F	MLPM-1719F	MLPM-1820F
Frequency Range, Min.	14-16 GHz	15-17 GHz	16-18 GHz	17-19 GHz	18-20 GHz
Free Run Frequency	15 GHz	16 GHz	17 GHz	18 GHz	19 GHz
Power Output, Min.	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+10 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	-85 dBc/Hz	-85 dBc/Hz	-85 dBc/Hz	-80 dBc/Hz	-80 dBc/Hz
@ 100kHz Offset	-110 dBc/Hz	-110 dBc/Hz	-110 dBc/Hz	-105 dBc/Hz	-105 dBc/Hz
Main Coil					
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/70 mH	70 Ohm/70 mH	70 Ohm/70 mH	70 Ohm/70 mH	70 Ohm/70 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
Impedance @ 1 MHz, Typ.	1.0 Ohm/2.0 uH	1.0 Ohm/2.0 uH	1.0 Ohm/2.0 uH	1.0 Ohm/2.0 uH	1.0 Ohm/2.0 uH
DC Circuit Power, Max.+12 Vdc	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	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA	250 mA/50 mA
Case Style	61-052-1	61-052-1	61-052-1	61-052-1	61-052-1

**Outline Drawing
61-040-4**

Weight: 1 Ounce



**Outline Drawing
61-052-1**

Weight: 2 Ounce

