MICRO LAMBDA WIRELESS, INC.

MLPF SERIES
PERMANENT MAGNET YTO's
FIXED FREQUENCY VXI/VME

FEATURES

- 2-20 GHz Frequency Coverage
- Customer Selected Fixed Frequency
- FM/Phase-Lock Port
- Miniature Size
- High Reliability
- Bi-Polar & FET Circuits

DESCRIPTION

The MICRO LAMBDA ***MLPF***-Series Permanent Magnet YIG-Tuned Oscillators cover the frequency range of 2-20 GHz. They are available at customer selected fixed frequencies and are fitted with a FM coil for phase locking. All units operate from a single +12 Volt supply and operate over the -20º to + 70ºC temperature range. Units are compliant with ANSI/ETSI thermal, shock and vibration requirements. They are ideal for local oscillators where low phase noise is the prime consideration.

Bi-Polar technology is available 2-14 GHz for superior fundamental and frequency multiplied phase noise. FET technology is available 8-20 GHz for cost effective fundamental 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 –20º to +70º C Case Temperature

Model No. (Bi-Polar)	**MLPF-0400**	**MLPF-0600**	**MLPF-0800**	**MLPF-1000**	**MLPF-1200**	**MLPF-1400**
Free Run Frequency	4 GHz	6 GHz	8 GHz	10 GHz	12 GHz	14 GHz
Free Run Frequency Accuracy	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz
Power Output, Min.	+14 dBm	+14 dBm	+13 dBm	+13 dBm	+13 dBm	+13 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	-103 dBc/Hz	-100 dBc/Hz	-98 dBc/Hz	-98 dBc/Hz	-95 dBc/Hz	-95 dBc/Hz
@ 100kHz Offset	-125 dBc/Hz	-123 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz
FM Coil						
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.	1 Ohm/2 uH	1 Ohm/2 uH	1 Ohm/2 uH	1 Ohm/2 uH	1 Ohm/2 uH	1 Ohm/2 uH
DC Power, Max. +12 Vdc	100 mA	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	+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	61-040-6	61-040-6	61-040-6	61-040-6	61-040-6	61-040-6

Micro Lambda Wireless, Inc. - 46515 Landing Parkway, Fremont California 94538 * Phone (510) 770-9221* Fax (510) 770-9213

ELECTRICAL AND PERFORMANCE SPECIFICATIONS

Guaranteed Specifications at –20º to +70º C Case Temperature

Model No. (FET)	MLPF-1000F	MLPF-1200F	MLPF-1400F	MLPF-1600F	MLPF-1800F	MLPF-2000F
Free Run Frequency	10 GHz	12 GHz	14 GHz	16 GHz	18 GHz	20 GHz
Free Run Frequency Accuracy	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz	+/- 20 MHz
Power Output, Min.	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+10 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	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz	-85 dBc/Hz	-80 dBc/Hz
@ 100kHz Offset	-115 dBc/Hz	-115 dBc/Hz	-115 dBc/Hz	-115 dBc/Hz	-110 dBc/Hz	-105 dBc/Hz
FM Coil						
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 Rate, Min.	+/- 50 MHz	+/- 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	1.0 Ohm/2.0 uH
DC Circuit Power, Max.+12 Vdc	100 mA	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	+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	61-040-6	61-040-6	61-040-6	61-040-6	61-040-6	61-040-6

Outline Drawing
61-040-6

Weight: 1 Ounce