



MICRO LAMBDA WIRELESS, INC.

YIG TUNED FILTERS WITH COMMERCIAL ANALOG DRIVERS PA SERIES

FEATURES

- 500 MHz to 26 GHz
- Compensation for Temperature Drift
- Input Regulators for Improved Stability
 - Versus Power Supply Variations
- 0 to 10 Volt Tuning
- 0° C to +65° C Temperature Range



DESCRIPTION

MICRO LAMBDA YIG Filters, model types MLFP Series and MLFR-series are available with integrated analog driver circuits.

MICRO LAMBDA drivers eliminate the need for customers to design or develop their own driver circuits and sophisticated test and alignment procedures. Integrating a driver at MICRO LAMBDA's factory ensures that peak performance will be achieved at the time of manufacture. Alignment and compensation with the particular YIG filter can be maximized down to the component level.

All drivers in this series provide input voltage regulators, and compensation circuits to improve frequency drift.

YIG drivers act as Voltage-To-Current converters, converting standard 0-10 Volts numbers into mA of current to tune a magnetic tuning coil.

POSITIVE INPUT ANALOG DRIVERS PA Series

MICRO LAMBDA positive analog drivers are available for [commercial](#) environments. Standard products provide 0-10 Volt tuning input and operate over the 0° to 65° temperature range.

The PA series of analog driver provide the main coil current from the +15 volt input line. Current increases linearly from 0 mA = 0 GHz at a rate of approximately 50 mA per 1 GHz. A 2-8 GHz filter will require 100 mA @ 2 GHz and 400 mA @ 8 GHz.

Negative input drives which provide the main coil current on the -15 volt input line, are available as an option.

Frequency drift performance can be optimized with the inclusive temperature compensation circuits within the driver. This yields filter/driver combinations set at the factory with excellent frequency accuracy performance.

In special cases, speed-up circuits like those used to improve the tuning speed of YIG oscillators can also be included to provide both fast-tuned filters and with good accuracy. Filter parameters can be maximized during factory alignment to meet customer specific requirements.

AVAILABLE OPTIONS FOR PA-SERIES COMMERCIAL ANALOG DRIVERS

- **Optional Tuning Speeds**
- **Optional Sweep Speeds**
- **Negative Input Drivers**



STANDARD POSITIVE INPUT ANALOG DRIVER SELECTION GUIDE: PA SERIES

YIG TUNED FILTERS WITH

COMMERCIAL ANALOG DRIVERS

.5-26 GHz YTOs, PA SERIES

DRIVER INPUT & RESPONSE

SPECIFICATION (0 to +65 deg. C)

Main Coil Driver Function

Tuning Command

0 Volts = Lowest Frequency
+10 Volts = Highest Frequency

Tuning Accuracy
(excluding hysteresis)

See Table

Tuning Speed (Note 1)

2 mS for 1 GHz step to within +/-10 MHz.

Sweep Speed (Note 2)
(0-10 Volt Ramp)

50 mS up / 10 mS retrace for 1 GHz, Linearity @ 0.1%

Main Driver Inputs

Supply Voltage & Current

+15 V +/- .5 V @ Filter Tuning Current + 50 mA, Max.
-15 V +/- .5 V @ 50 mA, Max.

Supply Voltage Pushing

+/- 100 kHz, Max. @ +/- .5 Vdc

Supply Voltage Ripple

10 mV Ripple Pk-Pk from 2 kHz to 3 MHz

Ground

Chassis Ground

YIG Heater Voltage & Current

+24 Vdc $\pm$ 4 Vdc @ 750 mA surge for 2 seconds, 150 mA steady state

Polarity independent : $\pm$ 12 Vdc or $\pm$ 15 Vdc acceptable

Input Impedance

> 10 k-Ohms

Common Rejection Mode

> 40 dB

Note 1: Optional .5 mS Tuning Speeds Available

2: Optional 5 mS Sweep Speed Available



Bandpass Filters with Positive Input Analog Drivers (0° C to +65° C)

MODEL NUMBER	# Stages	Frequency GHz	3 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15V (mA)	Current -15V (mA)	Outline Drawing
MLFP-20520PA	2	.50 to 2.0	20	+/- 5	350	50	21-008
MLFP-22018PA	2	2.0 to 18.0	25	+/- 20	1050	50	21-008
MLFP-22026PA	2	2.0 to 26.5	20	+/- 35	950	50	21-008
MLFP-40520PA	4	.50 to 2.0	20	+/- 5	350	50	21-008
MLFP-42018PA	4	2.0 to 18.0	40	+/- 20	1050	50	21-008
MLFP-42026PA	4	2.0 to 26.5	25	+/- 35	950	50	21-008
MLFP-46018PA	4	6.0 to 18.0	100	+/- 20	1050	50	21-008
MLFP-48018PA	4	8.0 to 18.0	400	+/- 50	1050	50	21-008
MLFP-62018PA	6	2.0 to 18.0	40	+/- 20	1050	50	21-009-1
MLFP-62026PA	6	2.0 to 26.5	30	+/- 35	950	50	21-009-1
MLFP-66018PA	6	6.0 to 18.0	100	+/- 20	1050	50	21-009-1
MLFP-68018PA	6	8.0 to 18.0	500	+/- 50	1050	50	21-009-1
MLFP-72018PA	7	2.0 to 18.0	40	+/- 35	1050	50	21-009-1
MLFP-72026PA	7	2.0 to 26.6	30	+/- 60	1350***	50	21-009-1
MLFP-76018PA	7-L	6.0 to 18.0	500	+/- 45	1050	50	21-009-1
MLFP-78018PA	7-L	8.0 to 18.0	500	+/- 45	1050	50	21-009-1
MLFP-78020PA	7-L	8.0 to 20.0	500	+/- 45	1150	50	21-009-1

* Accuracy includes frequency drift and linearity errors over the temperature range.

*** Requires +18 to +24 Vdc on Positive supply.

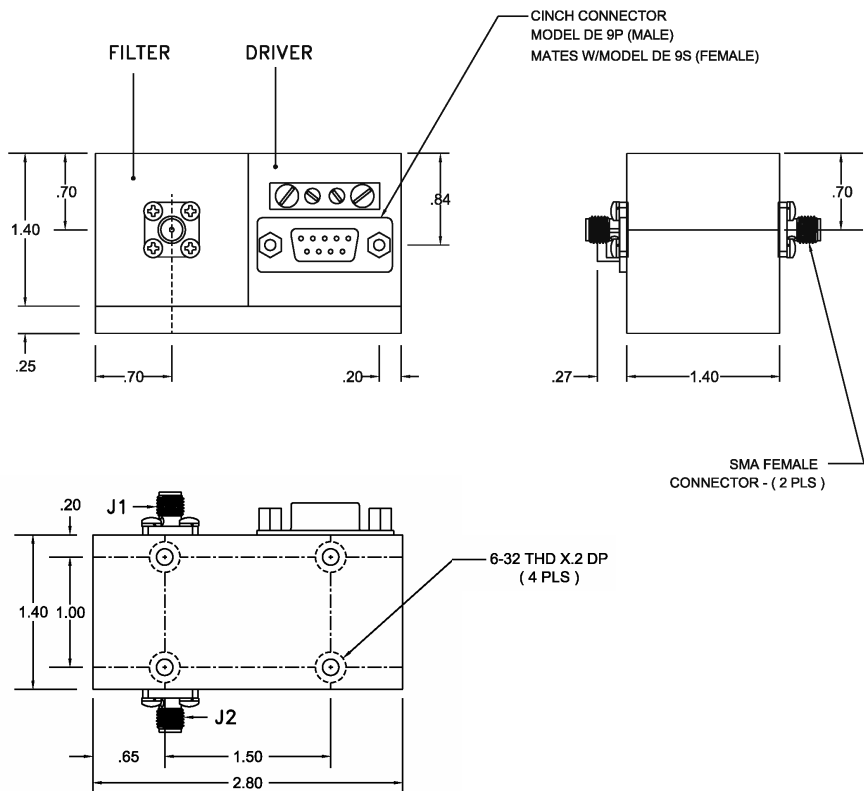
Band Reject Filters with Positive Input Analog Drivers (0° C to +65° C)

Model Number	Frequency GHz	3 dB Bandwidth (MHz)	40 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15 V (mA)	Current -15 V (mA)	Outline Drawing
MLFR-0102PA	1.0 to 2.0	100	10	+/- 5	250	50	21-021**
MLFR-0204PA	2.0 to 4.0	125	15	+/- 7	350	50	21-021**
MLFR-0408PA	4.0 to 8.0	150	20	+/- 10	550	50	21-021**
MLFR-0812PA	8.0 to 12.4	150	25	+/- 12	750	50	21-021**
MLFR-1218PA	12.4 to 18.0	150	25	+/- 12	1050	50	21-021**
MLFR-0502PA	.50 to 2.0	150	5	+/- 5	250	50	21-021**
MLFR-0206PA	2.0 to 6.0	150	20	+/- 10	450	50	21-021**
MLFR-0208PA	2.0 to 8.0	150	15	+/- 14	550	50	21-021**
MLFR-0212PA	2.0 to 12.0	150	10	+/- 15	750	50	21-021**
MLFR-0418PA	4.0 to 18.0	150	10	+/- 20	1050	50	21-021**
MLFR-0618PA	6.0 to 18.0	150	25	+/- 18	1050	50	21-021**
MLFR-0818PA	8.0 to 18.0	150	35	+/- 18	1050	50	21-021**

* Accuracy includes frequency drift and linearity errors over the temperature range.

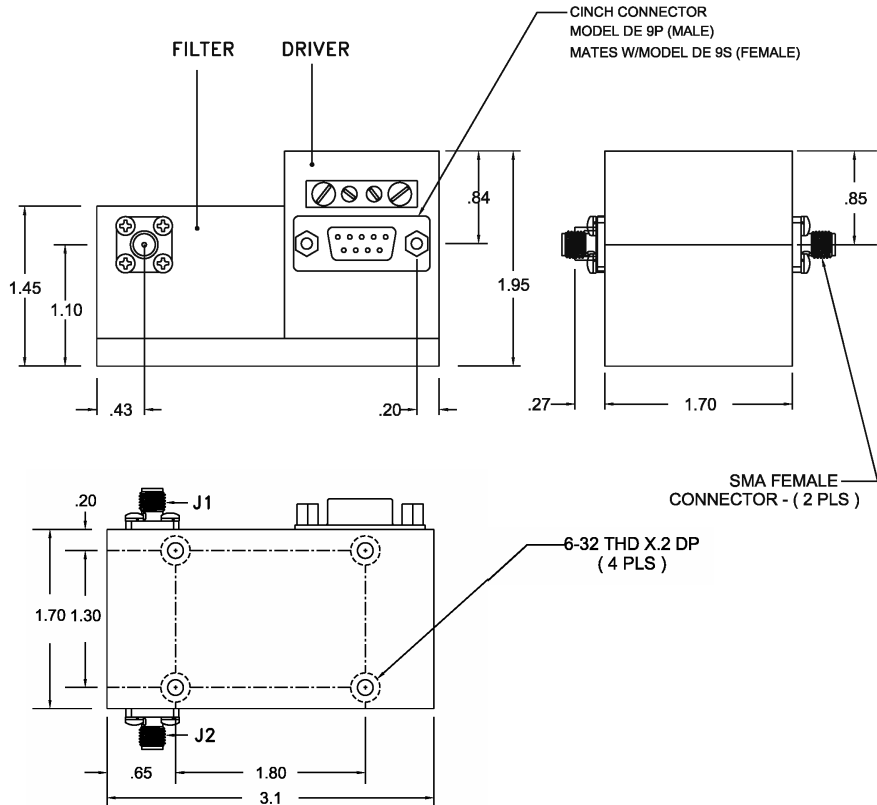
** Outline drawing is available from Factory or from website.

Outline Drawing: 21-008



CONN	FUNCTIONS
1	0-10V DRV CONT.
2	CONT. RETURN
3	GND
4	- SUPPLIES VOLTAGE
5	+ SUPPLIES VOLTAGE
6	20-30 V HTR SUPPLY
7	HEATER RETURN
8	N/C
9	N/C
J1	FILTER RF INPUT
J2	FILTER RF OUTPUT

Outline Drawing: 21-009-1



CONN	FUNCTIONS
1	0-10V DRV CONT.
2	CONT. RETURN
3	GND
4	- SUPPLIES VOLTAGE
5	+ SUPPLIES VOLTAGE
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