

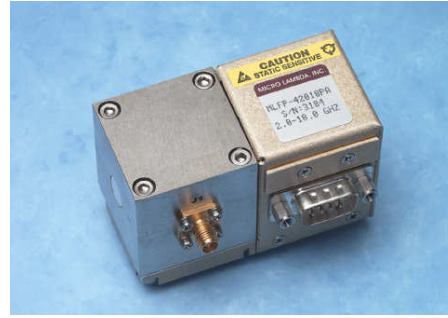


MICRO LAMBDA WIRELESS, INC.

YIG TUNED FILTERS WITH COMMERCIAL ANALOG DRIVERS PA SERIES

FEATURES

- 500 MHz to 50 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, MLFR-Series and MLFRD-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**

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 ±4 Vdc @ 300 to 750 mA surge for 2 seconds, 100 - 150 mA steady state depending on filter type Polarity independent : ±12 Vdc or ±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	#	Frequency	3 dB	Accuracy	Current	Current	Outline
NUMBER	Stages	GHz	Bandwidth (MHz)	(MHz) *	+15V (mA)	-15V (mA)	Drawing
MLFP-20520PA	2	0.50 to 2.0	20	+/- 10	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	1200	50	21-008
MLFP-40520PA	4	0.50 to 2.0	20	+/- 10	350	50	21-008
MLFP-42008PA	4	2.0 to 8.0	20	+/- 20	550	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	1200	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	+/- 25	1050	50	21-008
MLFP-43040PA	4	3.0 to 40.0	30	+/- 50	1450	50	**
MLFP-43044PA	4	3.0 to 44.0	30	+/- 60	1550	50	**
MLFP-43050PA	4	3.0 to 50.0	30	+/- 90	2100	50	**
MLFP-47040PA	4	7.0 to 40.0	35	+/- 50	1450	50	**
MLFP-41840PA	4	18.0 to 40.0	50	+/- 50	1450	50	**
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	1200	50	**
MLFP-66018PA	6	6.0 to 18.0	100	+/- 20	1050	50	21-009-1
MLFP-68018PA	6	8.0 to 18.0	500	+/- 25	1050	50	21-009-1
MLFP-70520PA	7	0.5 to 2.0	20	+/- 10	350	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 26.5	30	+/- 35	1350***	50	**
MLFP-76018PA	7	6.0 to 18.0	500	+/- 45	1050	50	21-009-1
MLFP-78020PA	7	8.0 to 20.0	500	+/- 45	1150	50	21-009-1
MLFP-76018LPA	7-L	6.0 to 18.0	500	+/- 45	1050	50	21-009-1
MLFP-78018LPA	7-L	8.0 to 18.0	500	+/- 45	1050	50	21-009-1
MLFP-78020LPA	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.

** Outline drawing is available from factory.

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



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

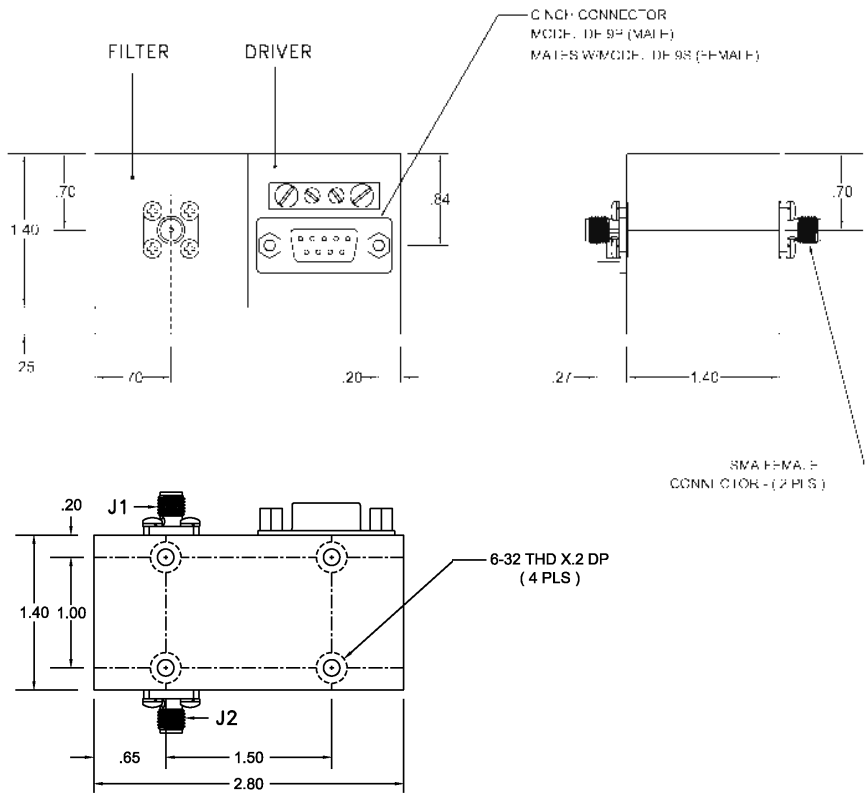
Model Number	Frequency GHz	3 dB Bandwidth (MHz)	40 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15 V (mA)	Current -15 V (mA)	Outline Drawing
MLFR-0102PA	1.0 to 2.0	100	10	+/- 5	250	50	21-021
MLFR-0204PA	2.0 to 4.0	125	15	+/- 7	350	50	21-021
MLFR-0408PA	4.0 to 8.0	150	20	+/- 10	550	50	21-021
MLFR-0812PA	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	0.50 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-0218PA	2.0 to 18.0	150	10	+/- 25	1050	50	21-021
MLFR-0220PA	2.0 to 20.0	150	5	+/- 25	1050	50	21-021
MLFR-0418PA	4.0 to 18.0	150	10	+/- 20	1050	50	21-021
MLFR-160418PA	4.0 to 18.0	150	25	+/- 20	1050	50	21-021
MLFR-0618PA	6.0 to 18.0	150	25	+/- 18	1050	50	21-021
MLFR-160618PA	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
MLFR-160818PA	8.0 to 18.0	150	35	+/- 18	1050	50	21-021

Dual Channel 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
MLFRD-0206PA	2.0 to 6.0	120	5	+/- 10	450	50	**
MLFRD-0208PA	2.0 to 8.0	120	5	+/- 12	550	50	**
MLFRD-0618PA	6.0 to 18.0	100	15	+/- 20	1050	50	**
MLFRD-0818PA	8.0 to 18.0	100	15	+/- 18	1050	50	**

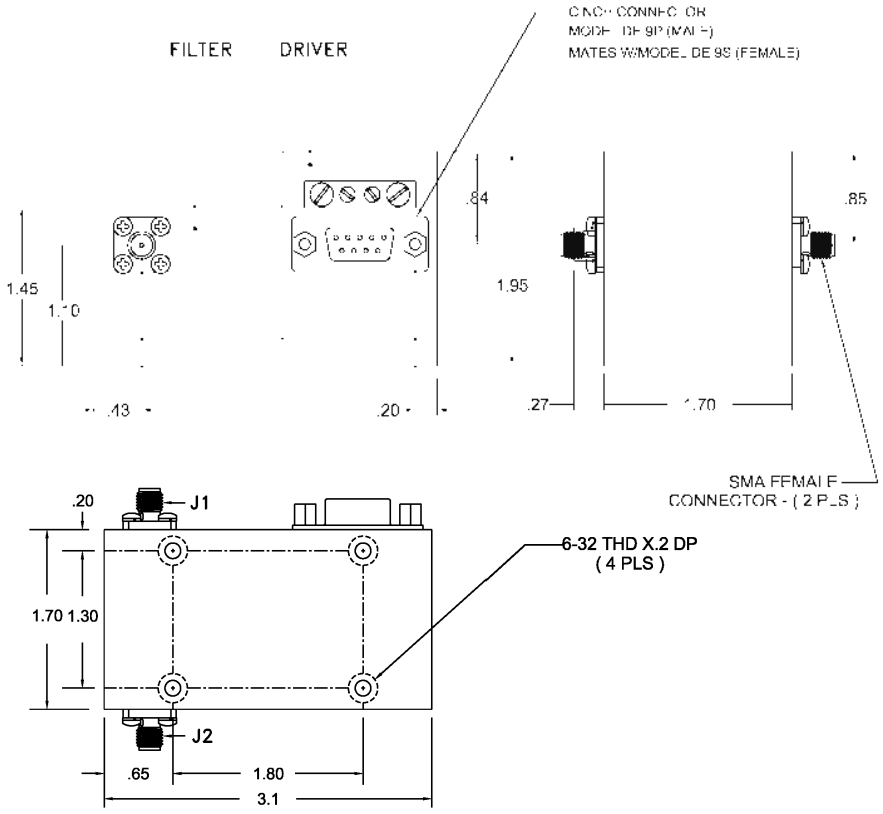
* Accuracy includes frequency drift and linearity errors over the temperature range.
** Outline drawing is available from Factory.

Outline Drawing: 21-008

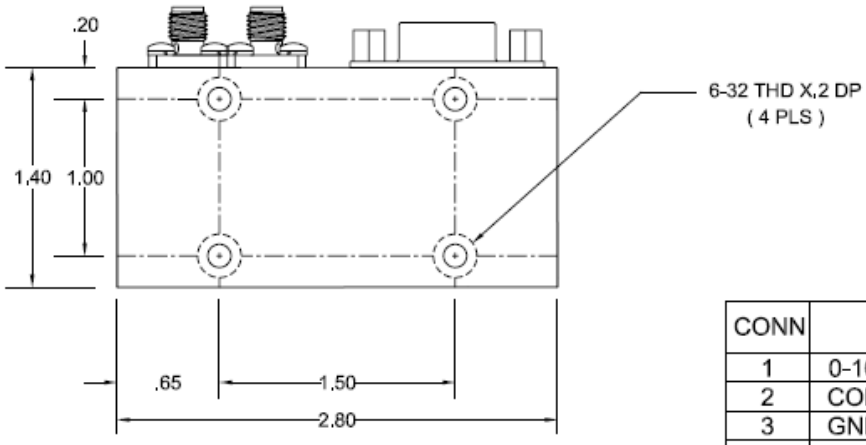
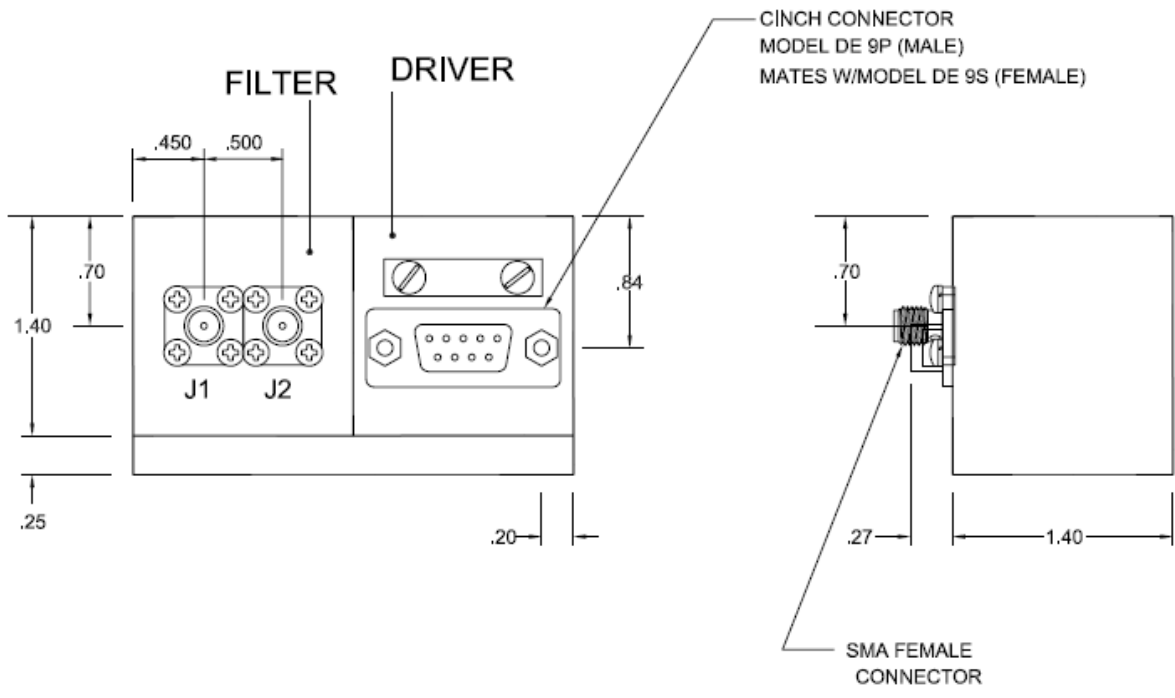


CONN	FUNCTIONS
1	0-10V DRV CONT.
2	CONT. RETURN
3	GND
4	- SUPPLIES VOLTAGE
5	- SUPPLIES VOLTAGE
6	20-30 V HTR SUPPLY
7	HEATER RETURN
8	N/C
9	N/C
J1	FILTER RF INPUT
J2	FILTER RF OUTPUT

Outline Drawing: 21-009-1



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



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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE: FRACTIONS DECIMALS ANGLES ± .010 ± .005	CONTRACT NO.	
	APPROVALS	DATE
	DRAWN N. NGUYEN	9/07/05
	CHECKED	
MATERIAL CARPENTER 49	ISSUED	
FINISH		
DO NOT SCALE DRAWING		



MICRO LAMBDA WIRELESS, INC.

BRF WITH ANALOG DRIVER, 1.4" STANDARD

SIZE	CAGE No ORN63	DWG. No. 21 - 021	REV. A
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