



### Ultra Wide Band Low Noise Amplifier 0.01GHz~3GHz



#### Features

- Gain: 36dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +12V @ 220mA
- 50 Ohm Matched

#### Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument
- Fiber Optics

Electrical Specifications, TA = +25°C, Vcc=+12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.01		1	1		3	GHz
Gain	34	36		33	35		dB
Gain Flatness		±1.0	±1.5		±1.0	±1.5	dB
Gain Variation Over Temperature(-45 ~ +85)		±0.8			±0.8		dB
Noise Figure		1.5	2.0		1.7	2.5	dB
Input VSWR		1.8	2.2		1.5	2.0	:1
Output VSWR		1.8	2.2		1.5	2.0	:1
Output 1dB Compression Point (P1dB)	20	21		20	21		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (IP3)		35			35		dBm
Supply Current (Vcc=+12V)		220	250		220	250	mA
Isolation S12		-60			-60		dB
Weight	1.06						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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### Absolute Maximum Ratings

Operating Voltage	+13V
RF Input Power	-5dBm

### Biasing Up Procedure

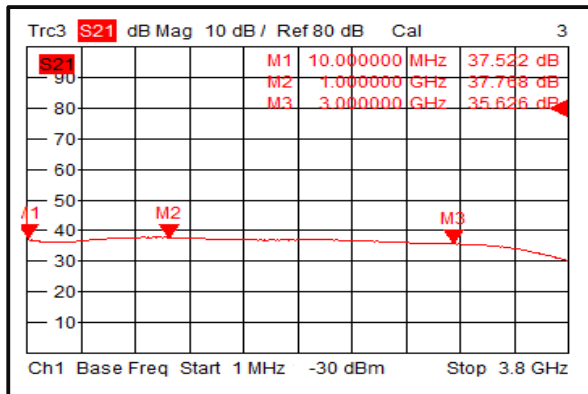
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

### Environmental Specifications

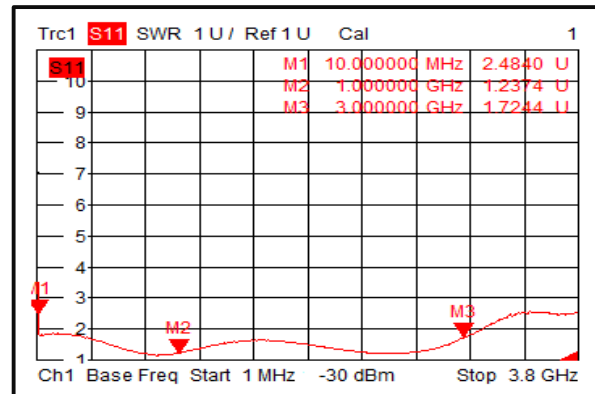
Operational Temperature (°C)	-45 to +85
Storage Temperature (°C)	-55 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msec half sine wave, 3 axis both directions

### Typical Performance Plots

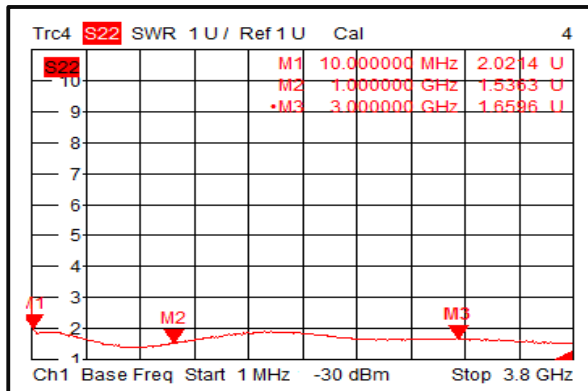
#### Gain @+25°C



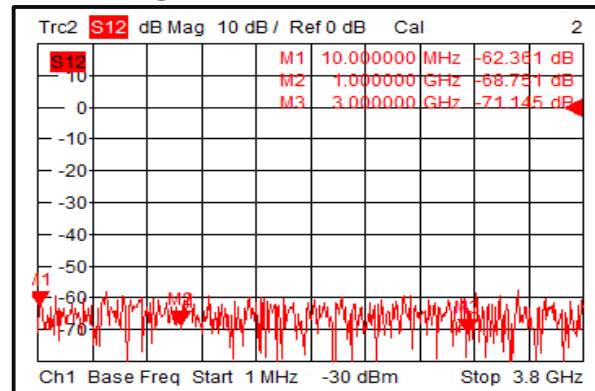
#### Input VSWR @+25°C



#### Output VSWR @+25°C



#### Isolation @+25°C



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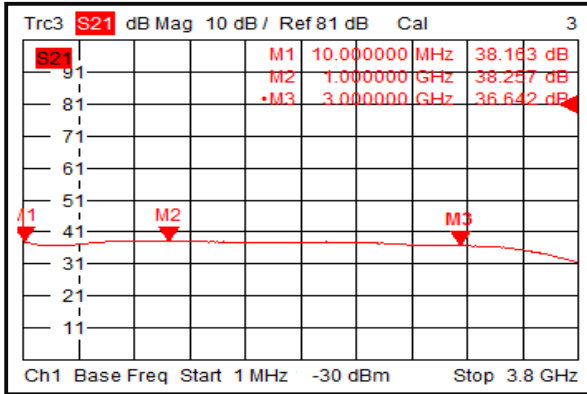


# RF-LAMBDA

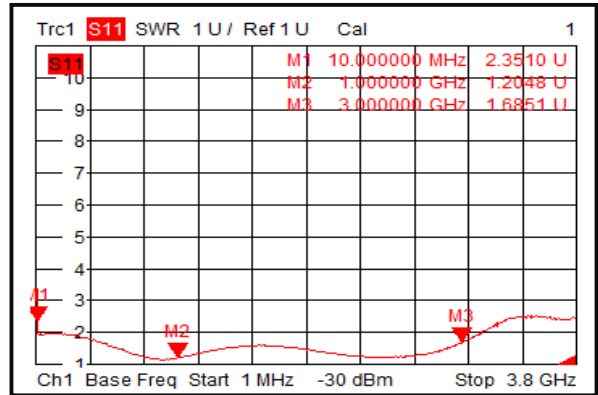
LEADER OF RF BROADBAND SOLUTIONS

## RLNA01M03GA

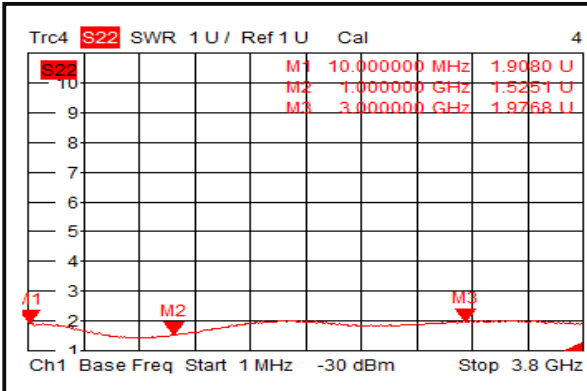
### Gain @-45°C



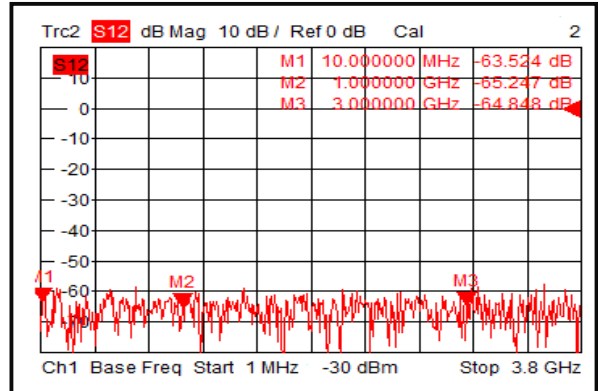
### Input VSWR @-45°C



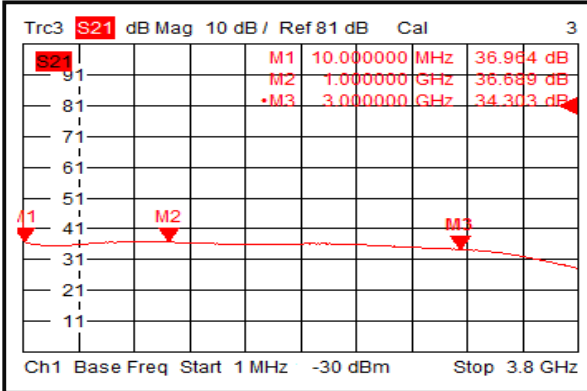
### Output VSWR @-45°C



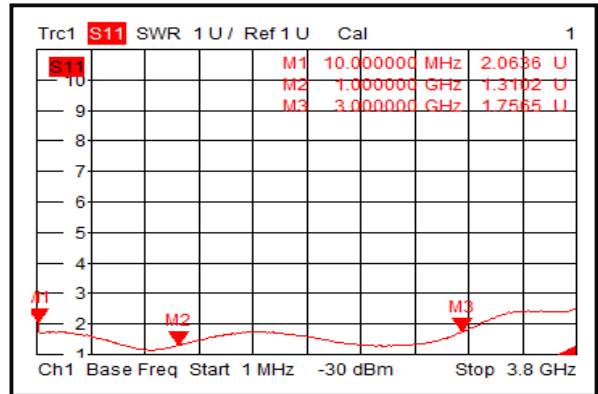
### Isolation @-45°C



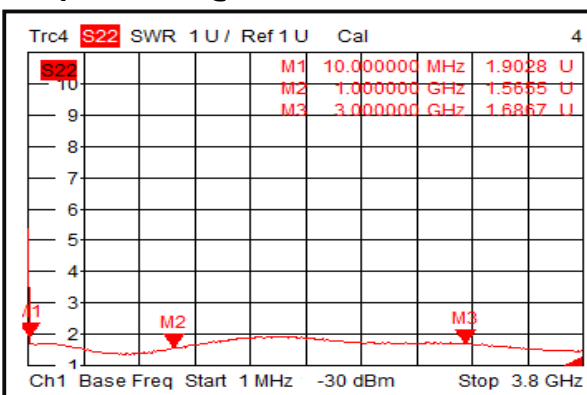
### Gain @+85°C



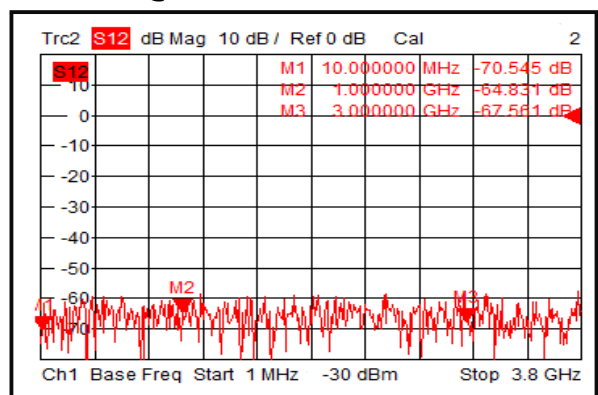
### Input VSWR @+85°C



### Output VSWR @+85°C



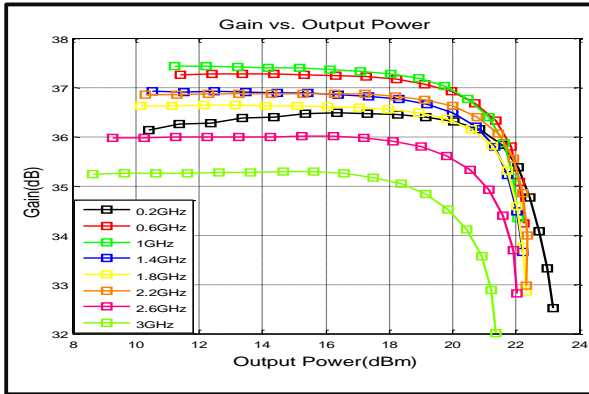
### Isolation @+85°C



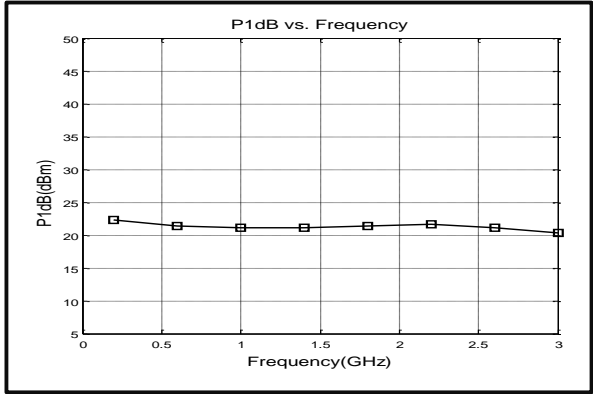
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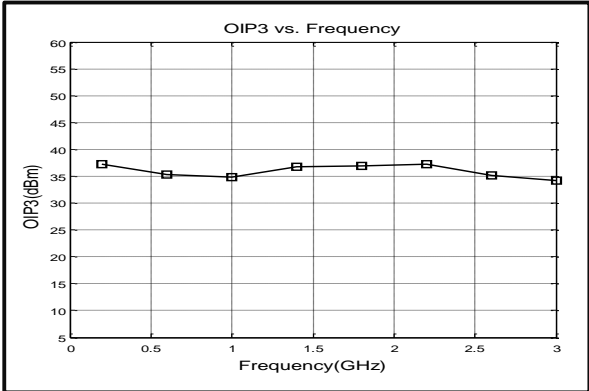
**Gain vs. Output Power**



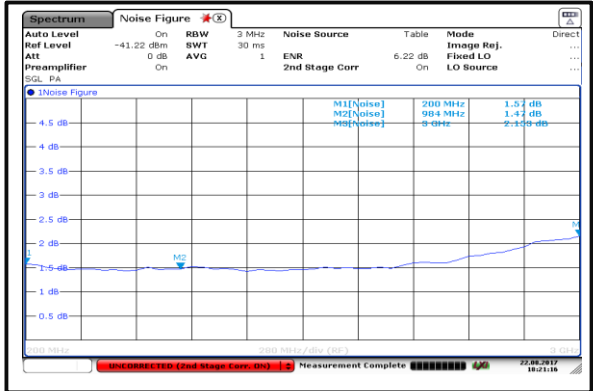
**P1dB vs. Frequency**



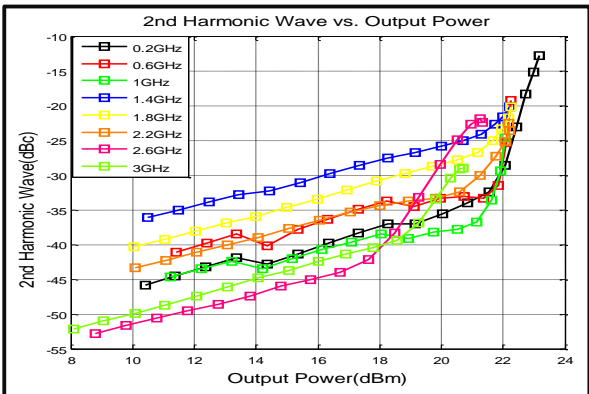
**Output Third Order Intercept (IP3)**



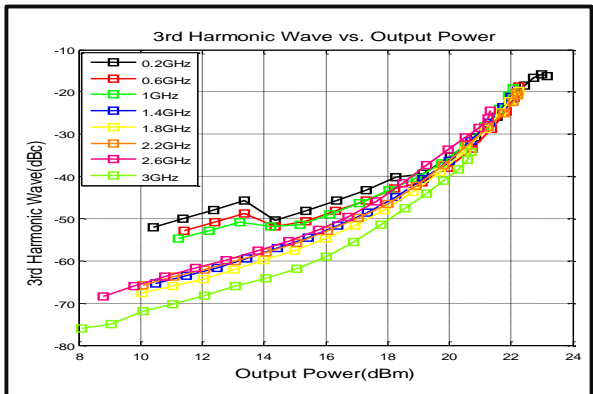
**Noise Figure**



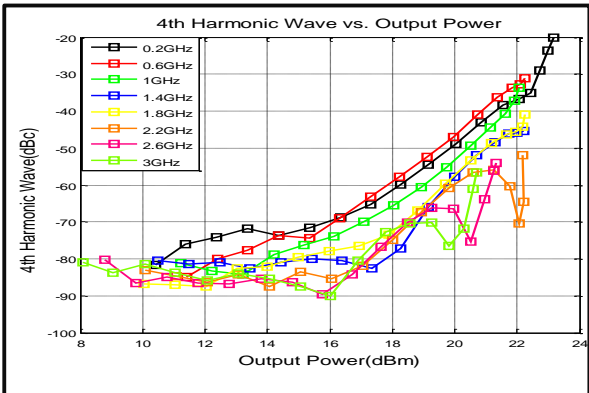
**2nd Harmonic Wave Output Power**



**3rd Harmonic Wave Output Power**



**4th Harmonic Wave Output Power**

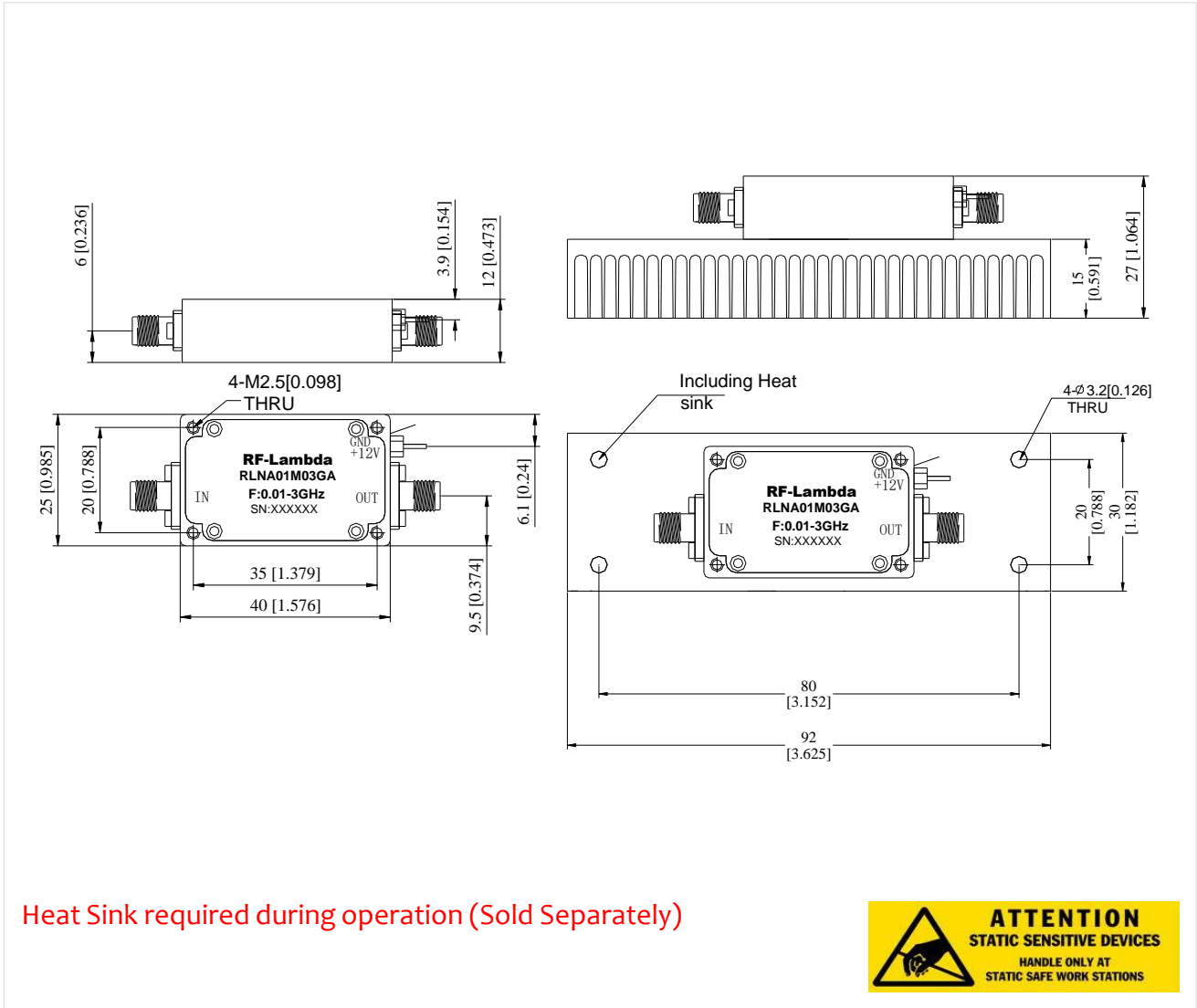


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**Outline Drawing:**

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



**Ordering Information**

Part No.	ECCN	Description
RLNA01M03GA	EAR99	0.01-3GHz Low Noise Amplifier

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