



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA01M15GA

Ultra Wide Band Low Noise Amplifier 0.01GHz~15GHz



Features

- Gain: 32dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +26dBm Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military and Aerospace
- Test and Measurement

Ultra Wide Band Low Noise Amplifier 0.01GHz~15GHz

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.01		6	6		15	15		18	GHz
Gain	29	33		30	32		28	32		dB
Gain Flatness		±2.0	±2.5		±0.5	±1.0		±1.0	±1.5	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.5			±1.5		dB
Noise Figure		3.5			2.5	4.0		3.0	4.0	dB
Input VSWR		1.4	1.8		1.4	1.8		1.4	1.8	: 1
Output VSWR		1.6	2.0		1.6	2.0		1.6	2.0	: 1
Output 1dB Compression Point (P1dB)	24	26		22	24		20	23		dBm
Saturated Output Power (Psat)		28			26			25		dBm
Output Third Order Intercept (IP3)		34			32			31		dBm
Isolation S12		-60			-60			-60		dB
Supply Current (Vcc=+12V)		380	450		380	450		380	450	mA
Weight	3.53									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	Copper									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									



Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	+2dB m

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 and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)



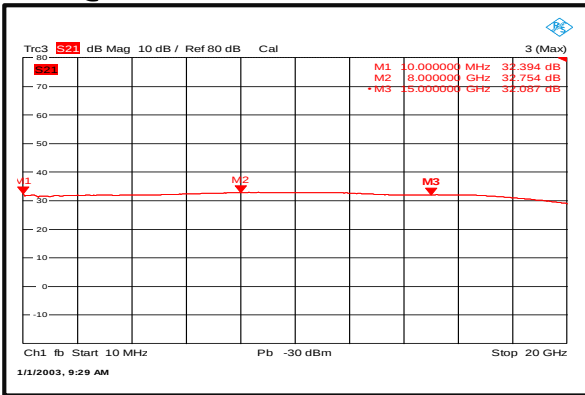
RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

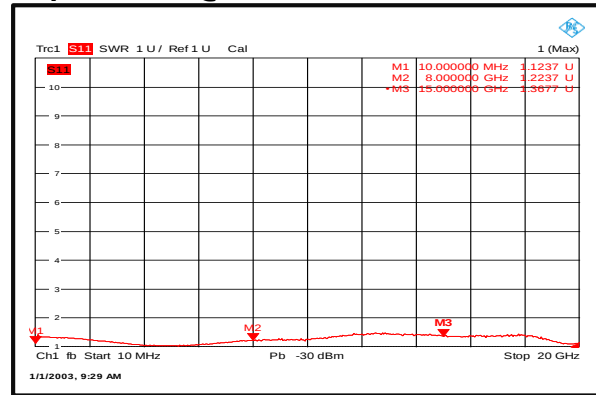
RLNA01M15GA

Typical Performance Plots

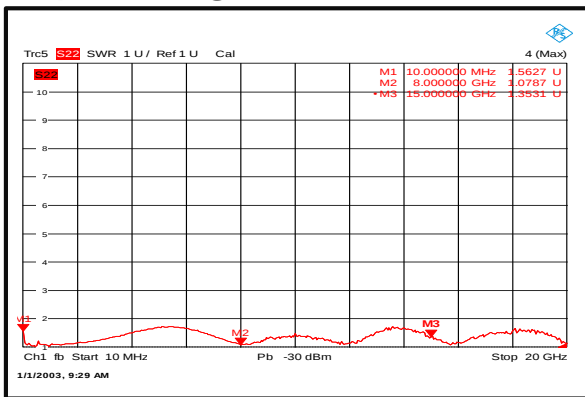
Gain @+25°C



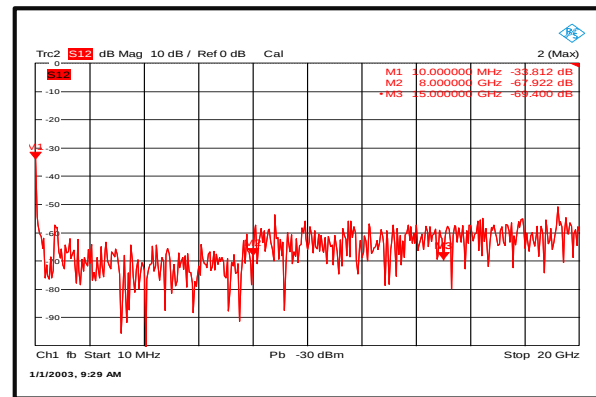
Input VSWR @+25°C



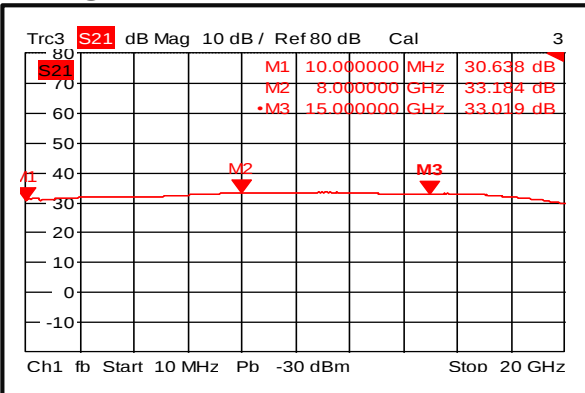
Output VSWR @+25°C



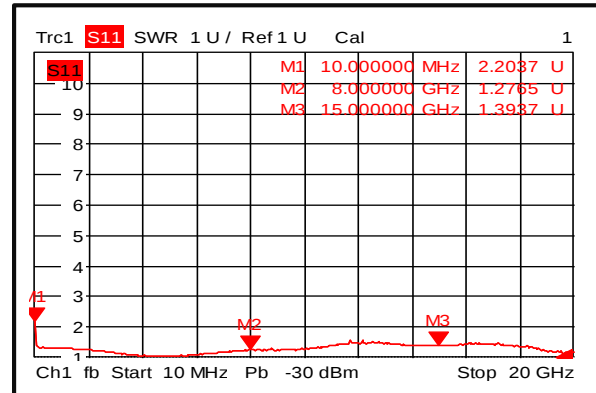
Isolation @+25°C



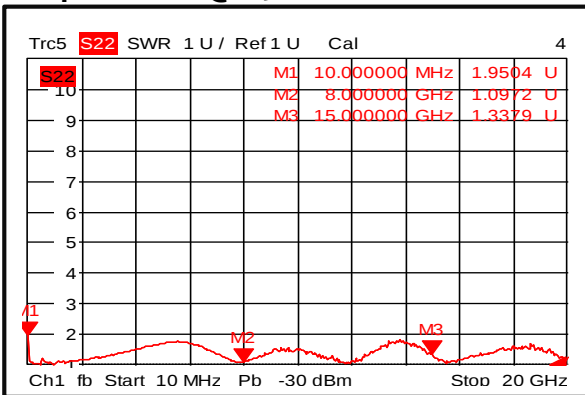
Gain @-45°C



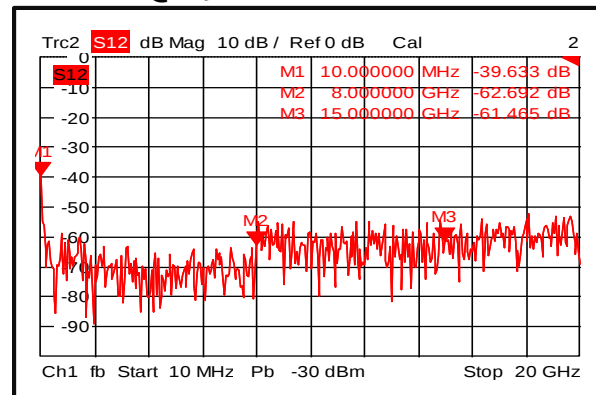
Input VSWR @-45°C



Output VSWR @-45°C



Isolation @-45°C



Ultra Wide Band Low Noise Amplifier 0.01GHz~15GHz

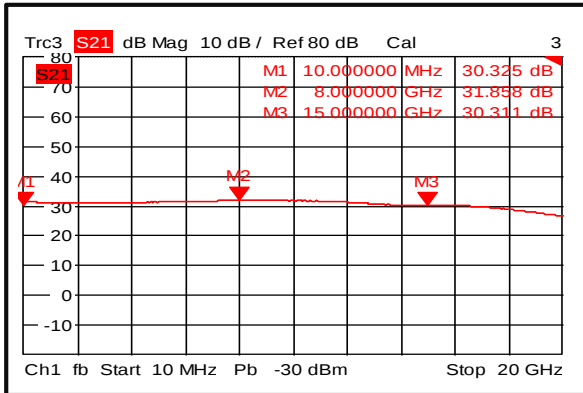


RF-LAMBDA

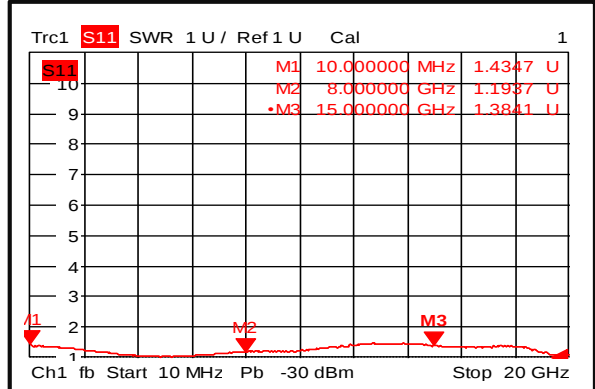
LEADER OF RF BROADBAND SOLUTIONS

RLNA01M15GA

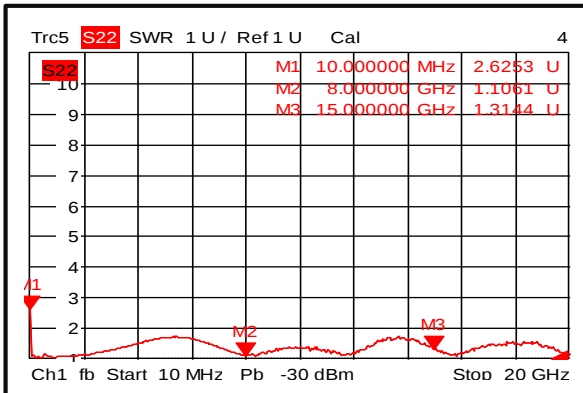
Gain @+85°C



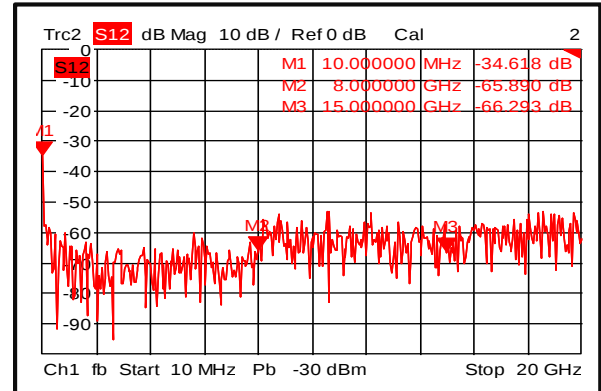
Input VSWR @+85°C



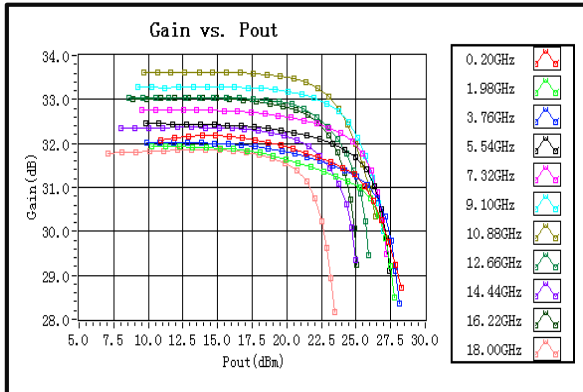
Output VSWR @+85°C



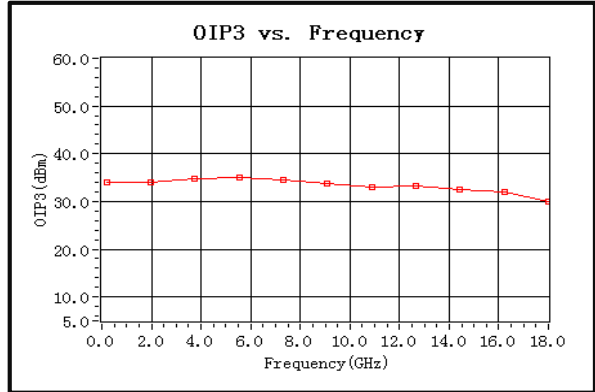
Isolation @+85°C



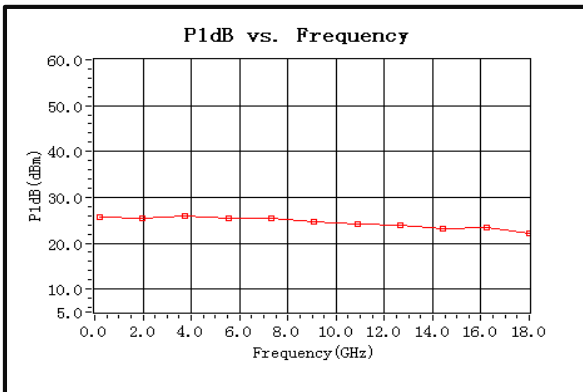
Gain vs. Output Power



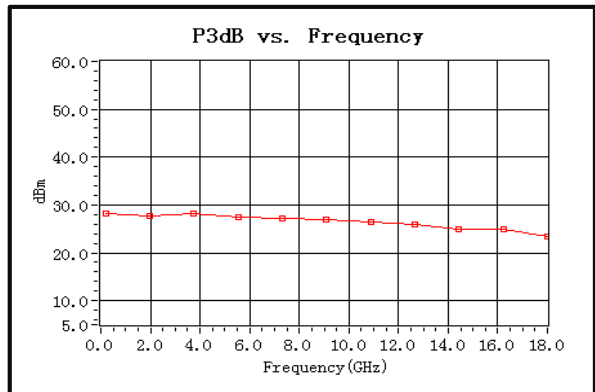
Output Third Order Intercept (IP3)



P1dB vs. Frequency



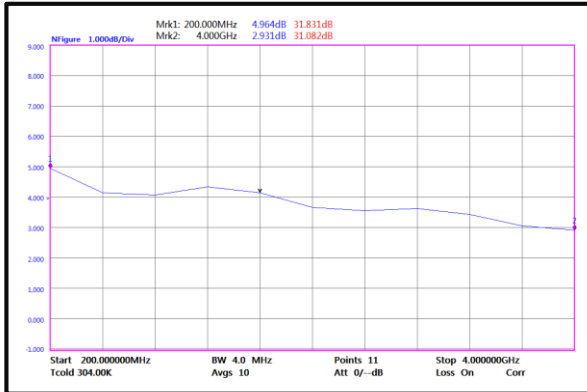
P3dB vs. Frequency



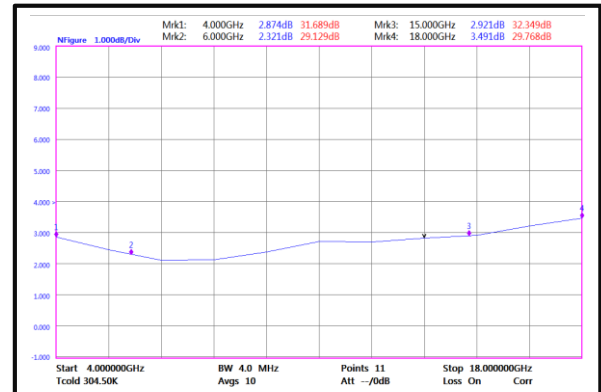
Ultra Wide Band Low Noise Amplifier 0.01GHz~15GHz



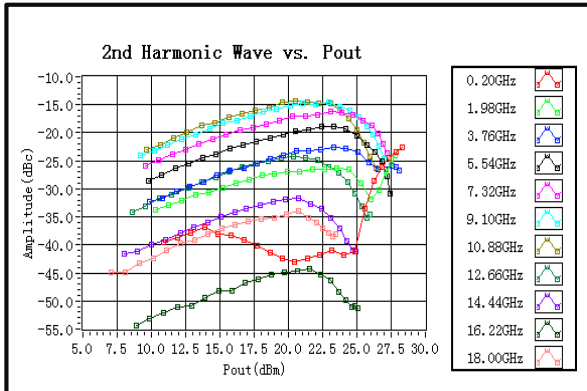
Noise Figure (200MHz to 4GHz)



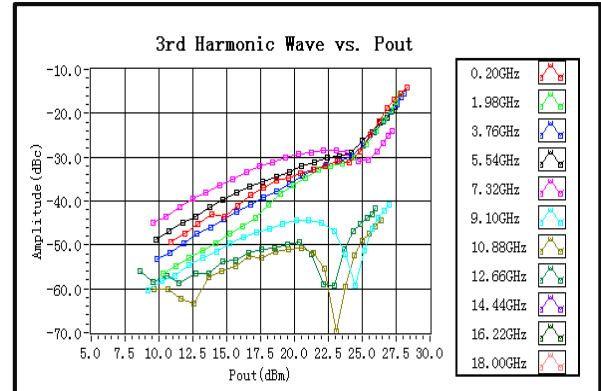
Noise Figure (4GHz to 18GHz)



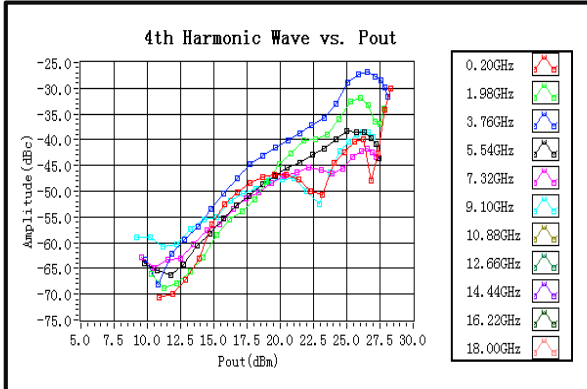
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



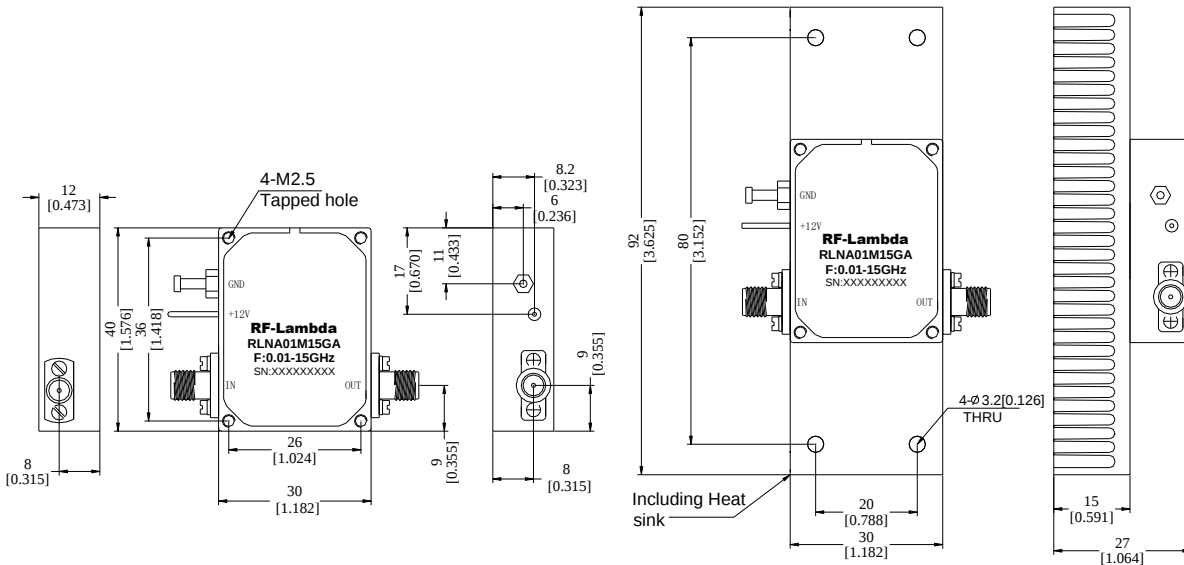
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA01M15GA	EAR99	0.01-15GHz Ultra Wide Band Low Noise Amplifier

Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.