



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA01M03GC

Ultra Wide Band Low Noise Amplifier 0.1GHz~3GHz



Features

- Gain: 33dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +22dBm Typical
- Supply Voltage: +12V

Typical Applications

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

Electrical Specifications, $T_A=25^{\circ}\text{C}$, $V_{CC} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		1.5	1.5		3	GHz
Gain	31	33		31	33		dB
Gain Flatness		± 0.8	± 1.5		± 0.8	± 1.5	dB
Gain Variation Over Temperature ($-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$)		± 0.8			± 1.0		dB
Noise Figure		1.8	2.5		2.0	2.5	dB
Input VSWR		1.6			1.6		: 1
Output VSWR		1.5			1.8		: 1
Output 1dB Compression Point (P1dB)	20	22		20	22		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (IP3)		36			34		dBm
Isolation S12		-60			-55		dB
Supply Current ($V_{CC}=+12\text{V}$)		310	360		310	360	mA
Weight	3.53						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA - Female						
Finish	Nickel plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+13.5V
RF Input Power (RFIN)(Vcc= +12V)	-6dB 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	-45°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)



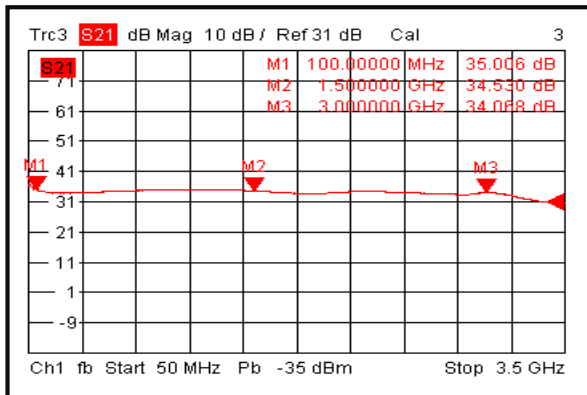
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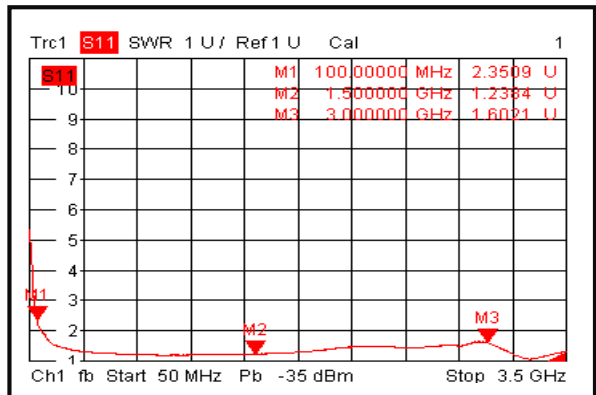
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Typical Performance Plots

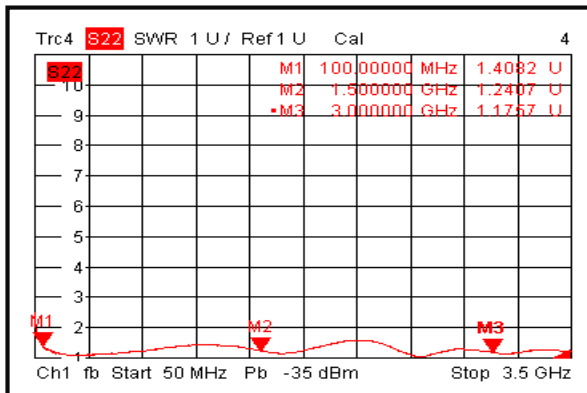
Gain @+25°C



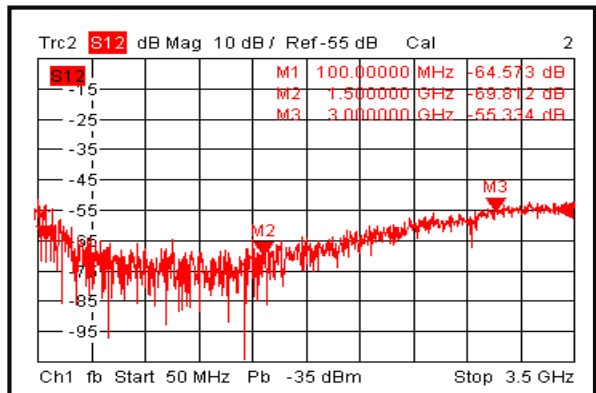
Input VSWR @+25°C



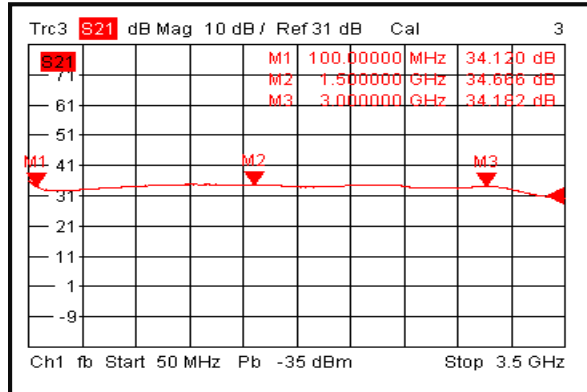
Output VSWR @+25°C



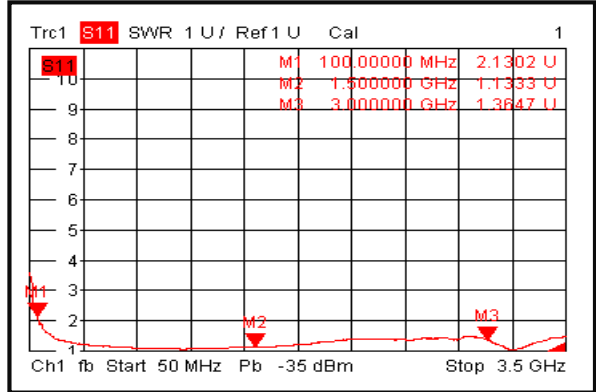
Isolation @+25°C



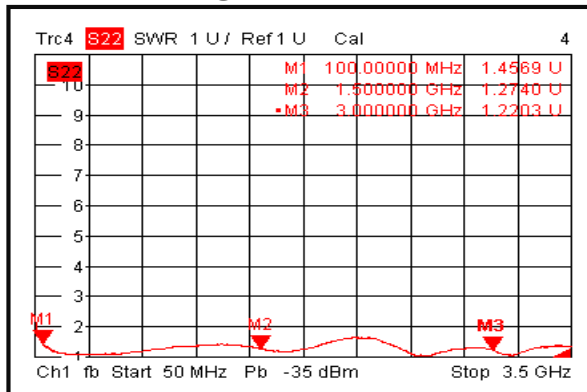
Gain @-45°C



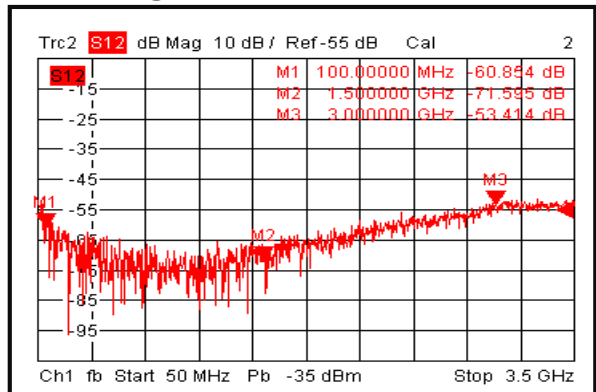
Input VSWR @-45°C



Output VSWR @-45°C



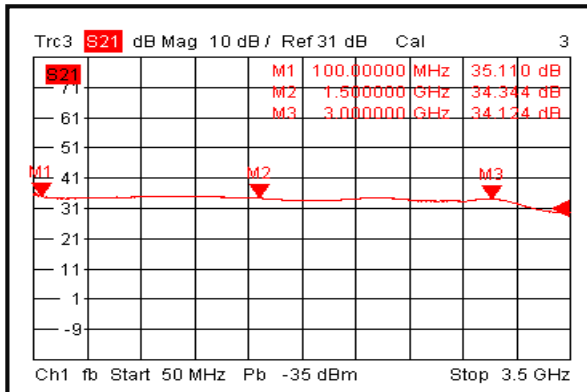
Isolation @-45°C



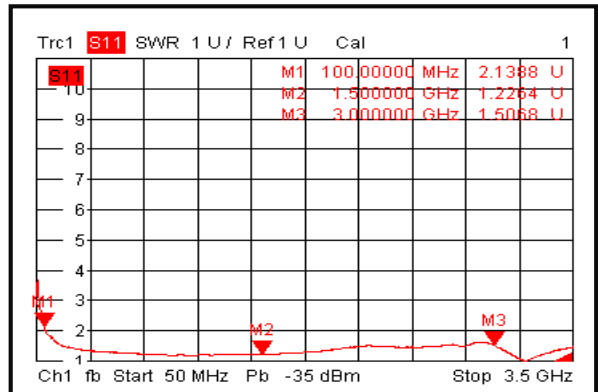
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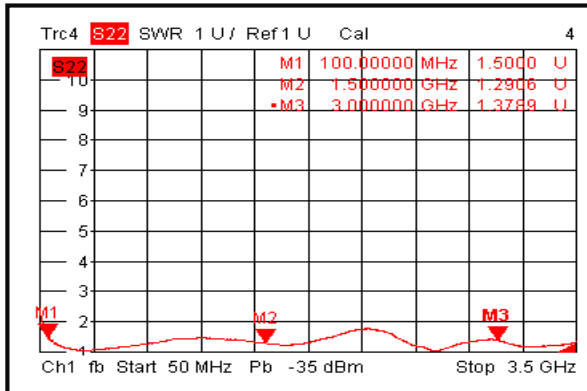
Gain @+85°C



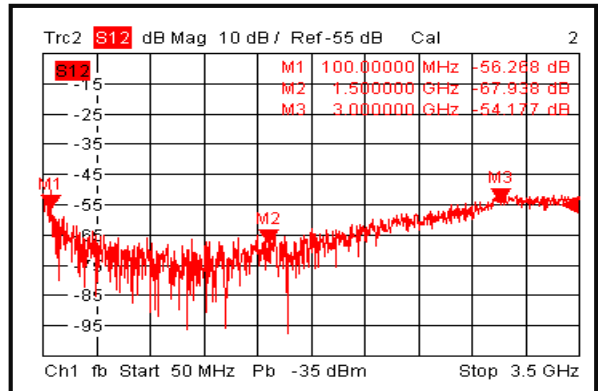
Input VSWR @+85°C



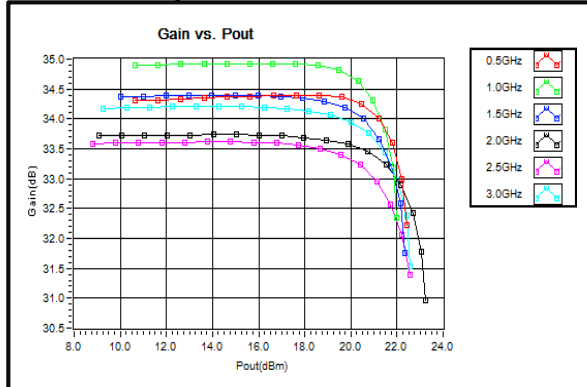
Output VSWR @+85°C



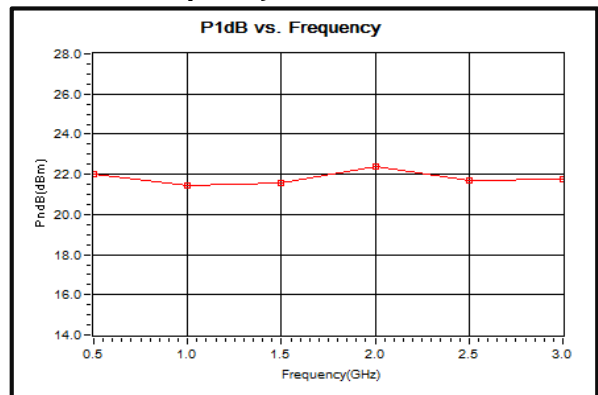
Isolation @+85°C



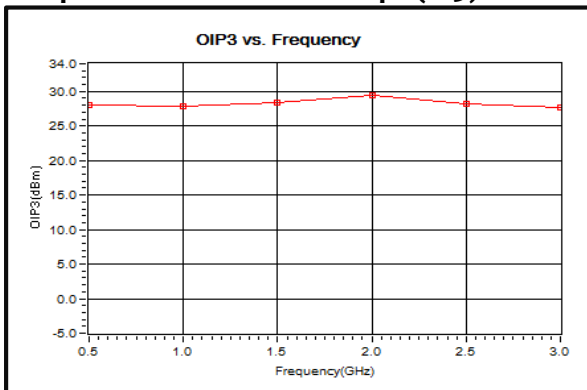
Gain vs. Output Power



P1dB vs. Frequency



Output Third Order Intercept (IP3)

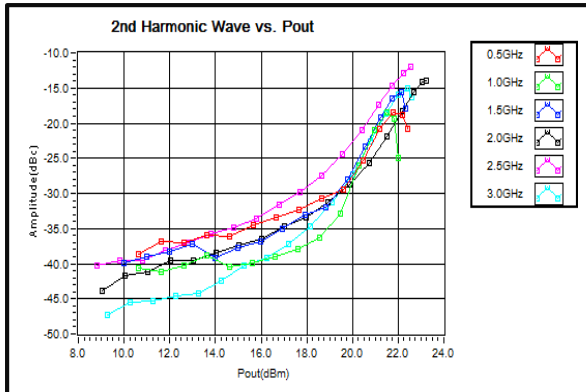


Noise Figure

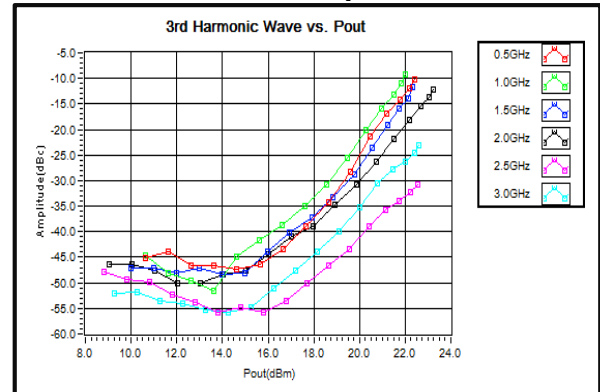




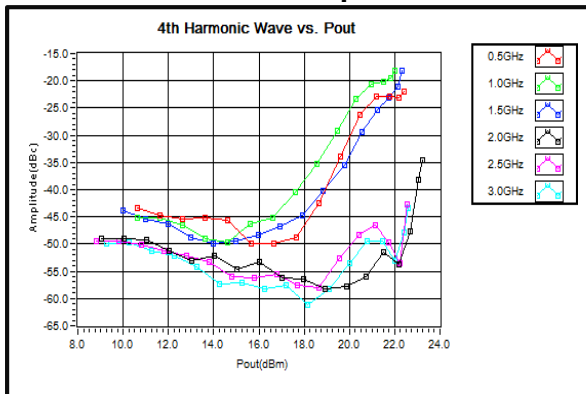
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



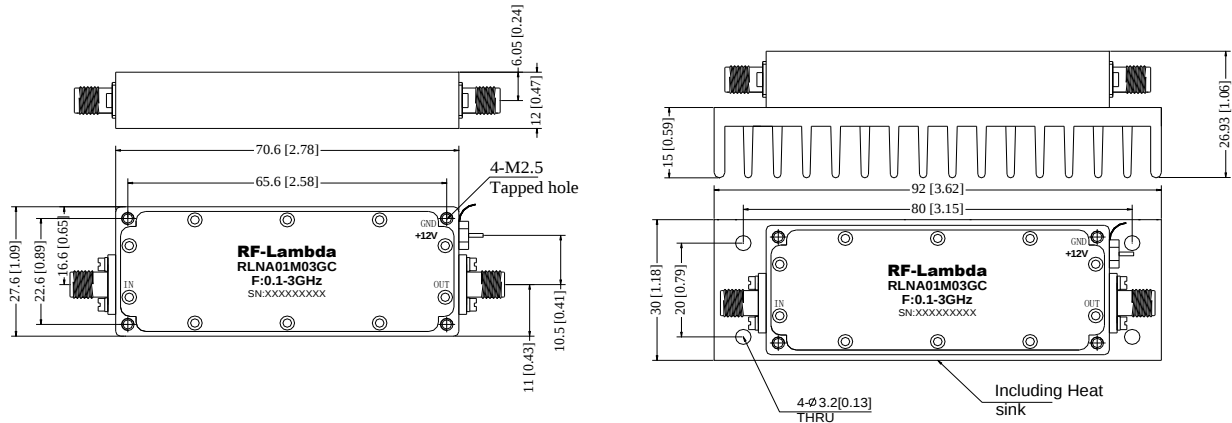
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	Description
RLNA01M03GC	0.1-3GHz Ultra Wide Band Low Noise Amplifier

Important Notice

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