



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA05G04GA2

Ultra Wide Band Low Noise Amplifier 0.5GHz~4GHz



Features

- Gain: 32dB Typical
- Noise Figure: 0.8dB Typical
- P1dB Output Power: +20dBm Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test & Measurement

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.5		3	3		4	GHz
Gain	30	32		29	31		dB
Gain Flatness		±1.5			±1.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure		0.8	1.1		1.0	1.5	dB
Input VSWR		1.8	3.0		1.8	3.0	: 1
Output VSWR		1.5	2.0		1.5	2.0	: 1
Output 1dB Compression Point (P1dB)	18	20		16	18		dBm
Saturated Output Power (Psat)		21			19		dBm
Output Third Order Intercept (OIP3)		28			26		dBm
Supply Current (VCC=+12V)		160	250		160	250	mA
Isolation S12		-55			-60		dB
Weight	1.06						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Gold or Nickel Plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-10dBm

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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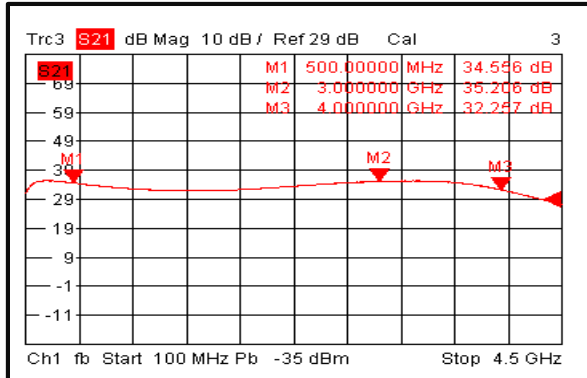
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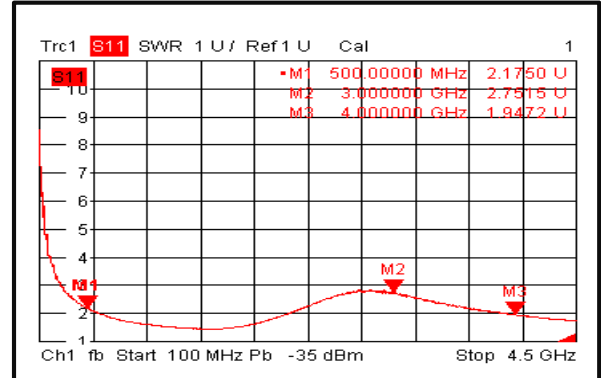
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Typical Performance Plots

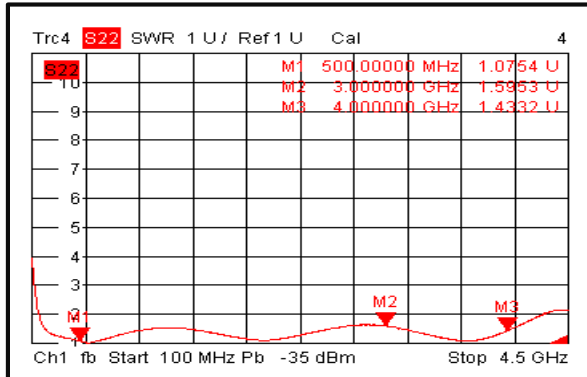
Gain@+25°C



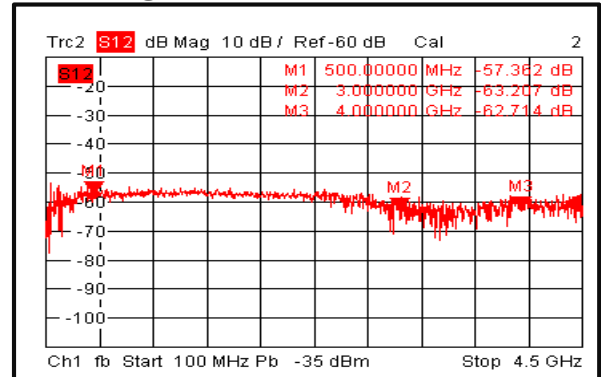
Input VSWR@+25°C



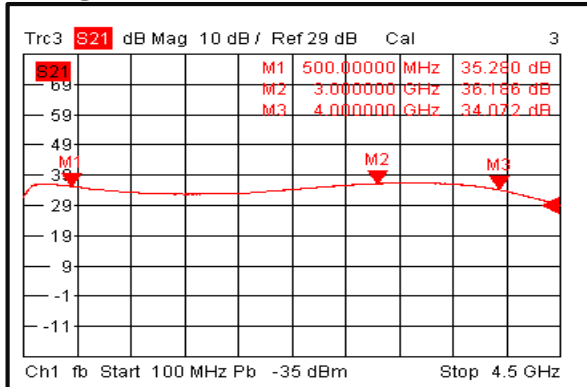
Output VSWR@+25°C



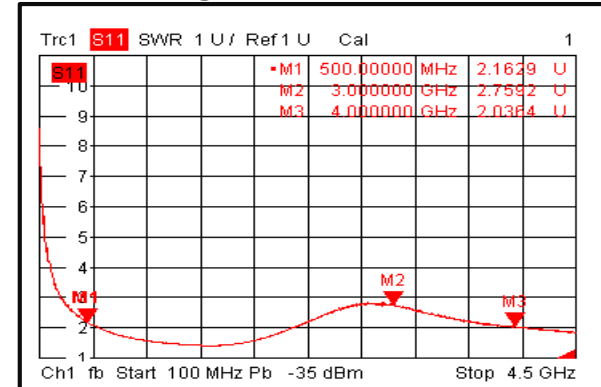
Isolation@+25°C



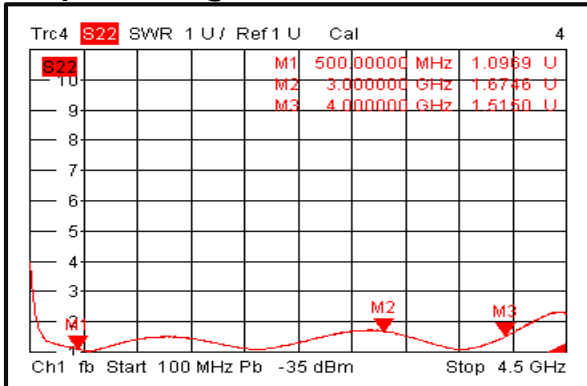
Gain@-45°C



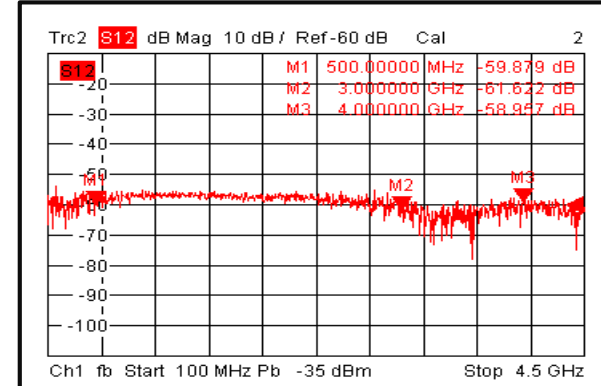
Input VSWR@-45°C



Output VSWR@-45°C



Isolation@-45°C



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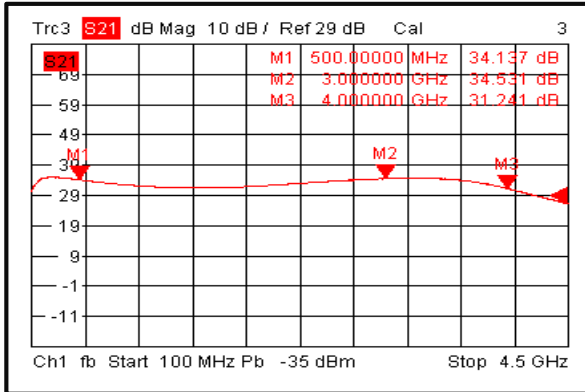


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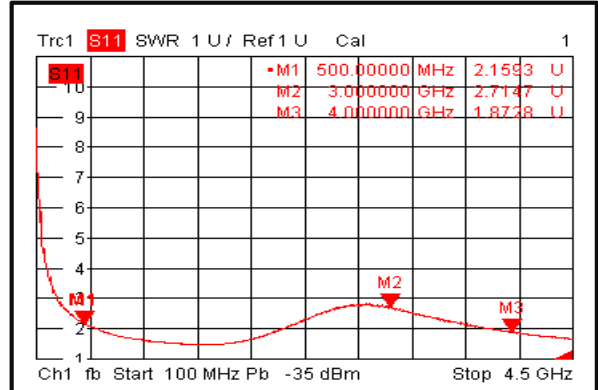
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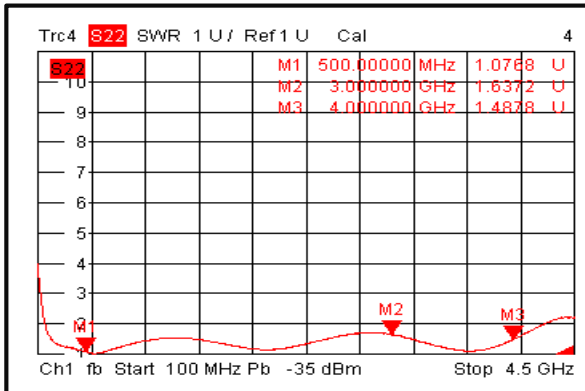
Gain@+85°C



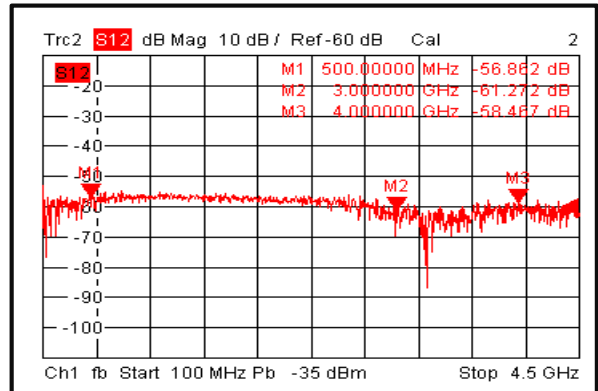
Input VSWR@+85°C



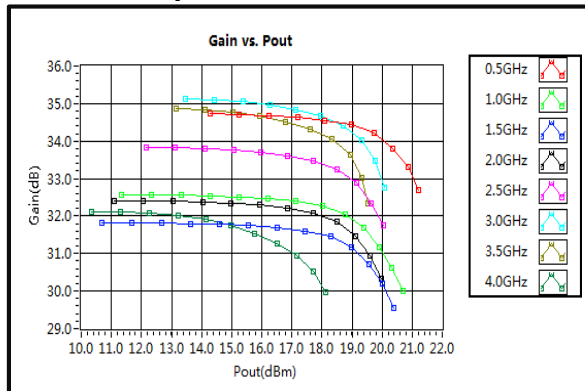
Output VSWR@+85°C



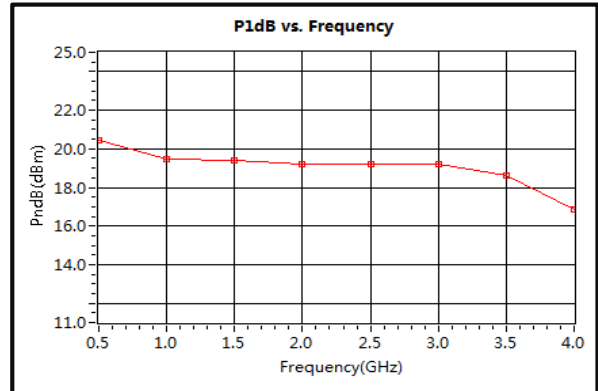
Isolation@+85°C



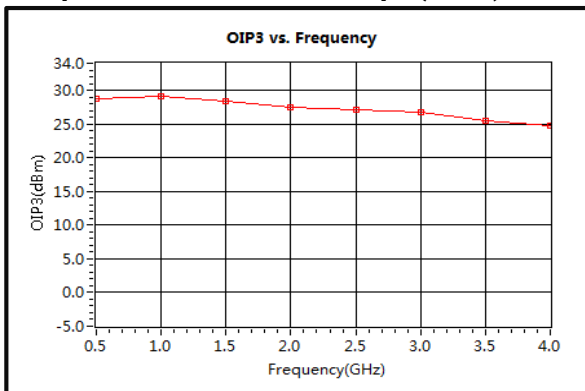
Gain vs. Output Power



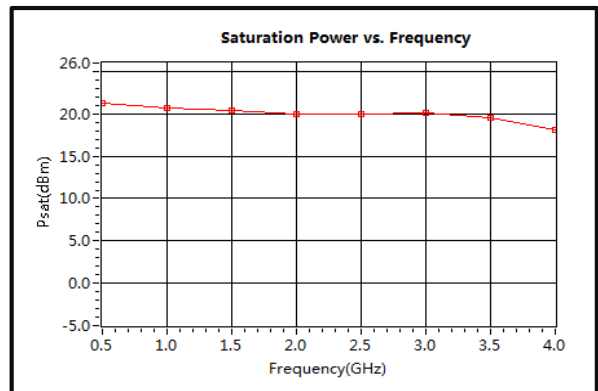
P1dB vs. Frequency



Output Third Order Intercept (OIP3)



Saturation Power vs. Frequency



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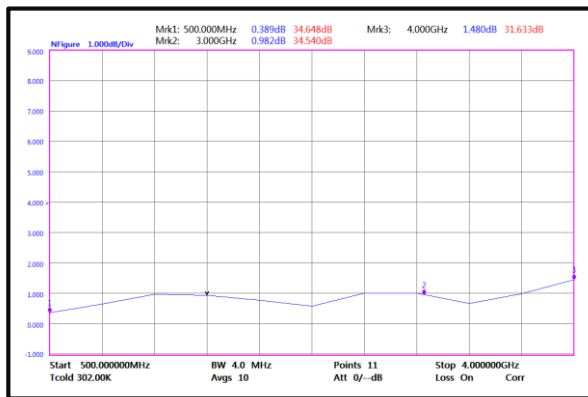


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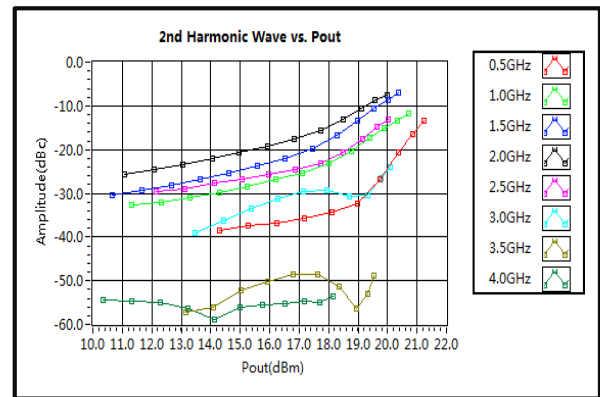
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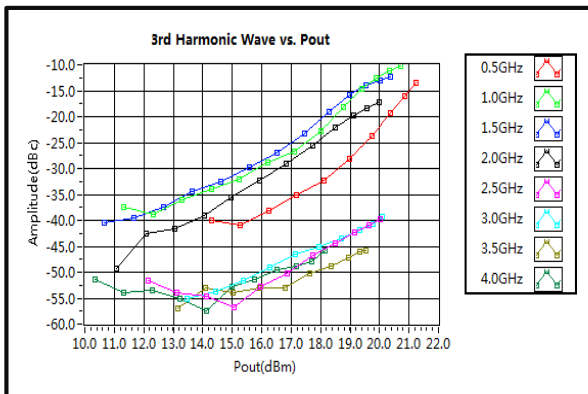
Noise Figure



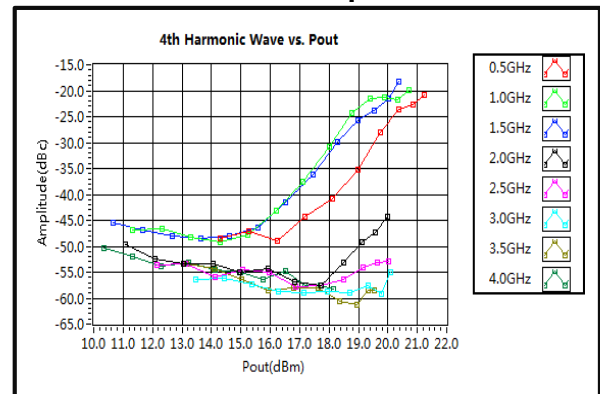
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

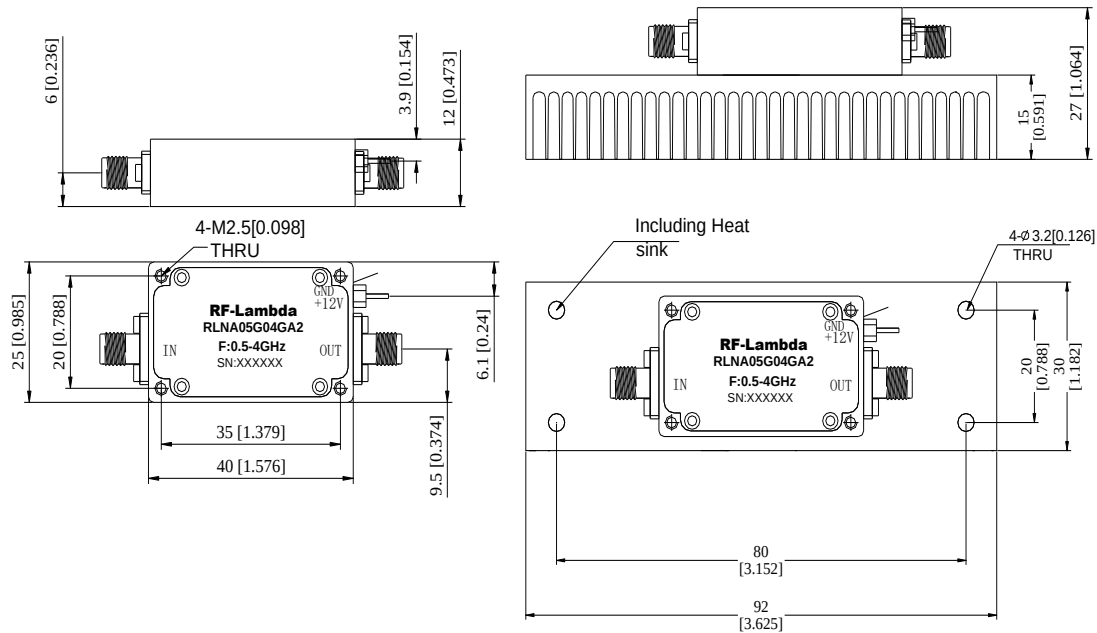


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Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA05G04GA2	EAR99	0.5-4GHz Low Noise Amplifier

Important Notice

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