



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA05G04GA3

Ultra Wide Band Low Noise Amplifier 0.5GHz~4GHz



Features

- Gain: 45dB Typical
- Noise Figure: 0.8dB Typical
- Output P1dB : +27dBm Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and 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	40	45		40	45		dB
Gain Flatness		±1.5			±1.5		dB
Gain Variation Over Temperature (-45 °C~ +85°C)		±1.5			±2.5		dB
Noise Figure		0.8	1.1		0.9	1.5	dB
Input VSWR		2.0	3.0		2.2	3.0	:1
Output VSWR		1.2	2.0		1.5	2.5	:1
Output 1dB Compression Point (P1dB)	25	27		24	26		dBm
Saturated Output Power (Psat)		28			27		dBm
Output Third Order Intercept (OIP3)		32			31		dBm
Supply Current (Vcc=+12V)		300	500		300	500	mA
Isolation S12		-55			-55		dB
Weight	2.47						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Nickel Plated						
Material	Aluminum						
Package Seal	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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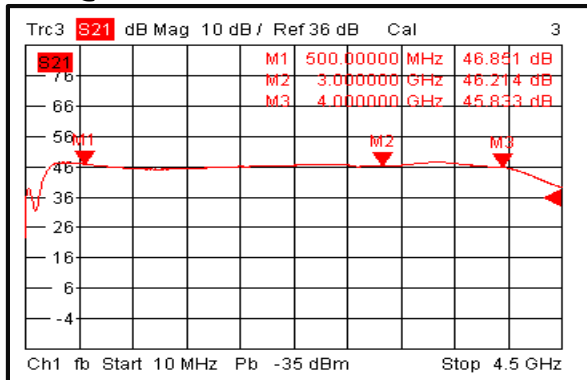
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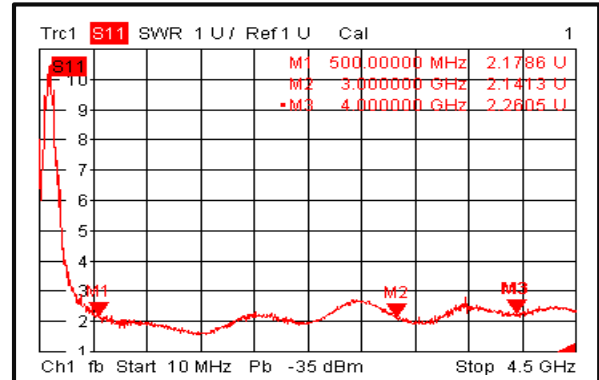
RLNA05G04GA3

Typical Performance Plots

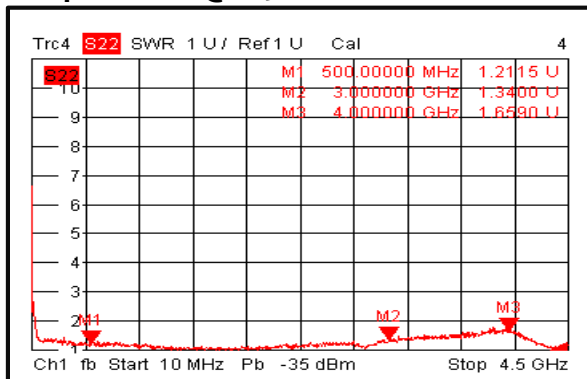
Gain@+25°C



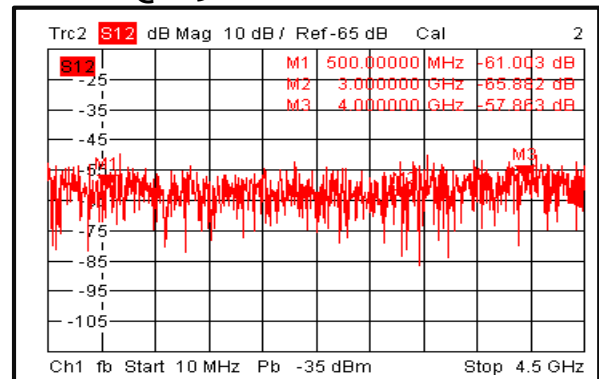
Input VSWR@+25°C



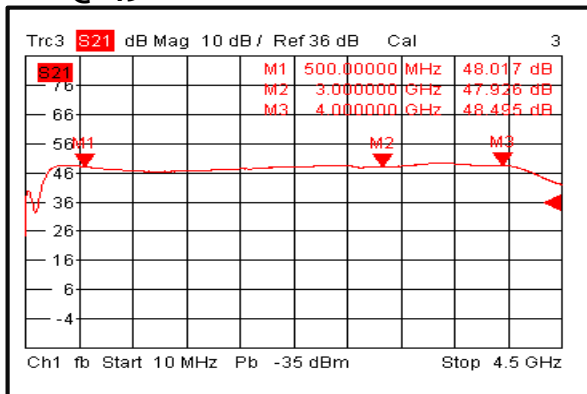
Output VSWR@+25°C



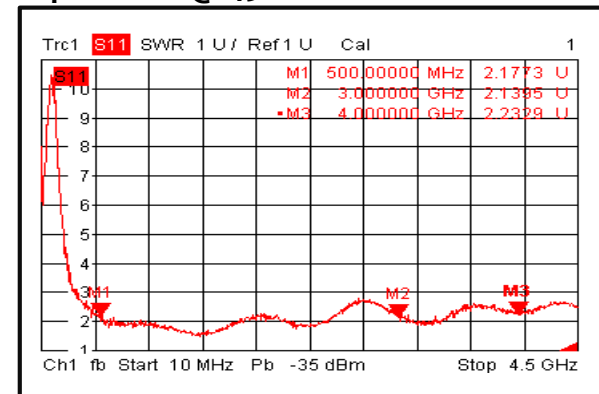
Isolation@+25°C



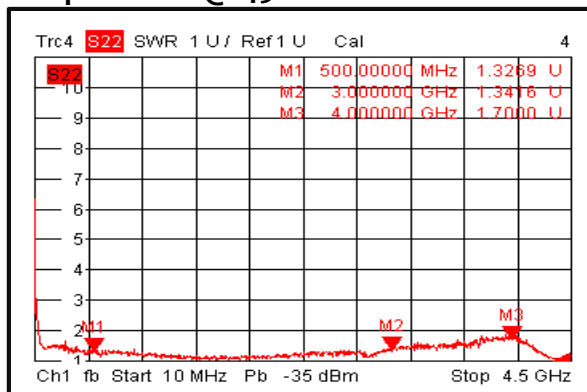
Gain@-45°C



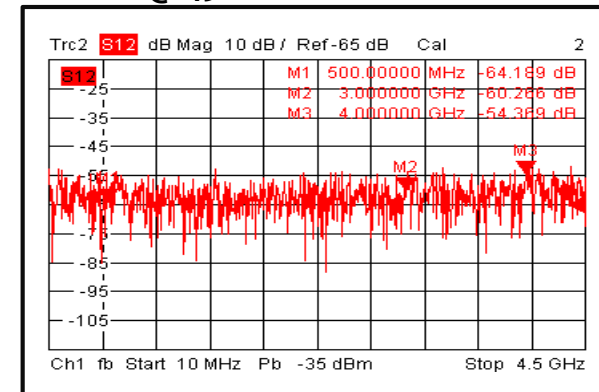
Input VSWR@-45°C



Output VSWR@-45°C



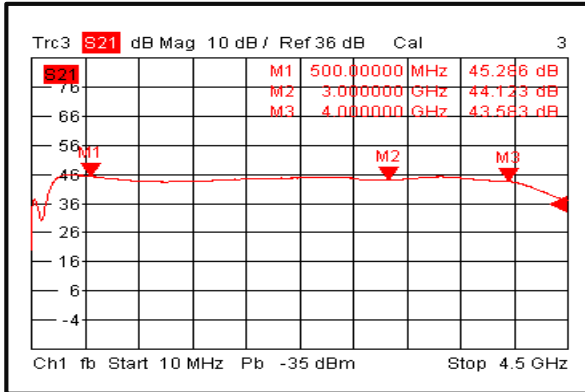
Isolation@-45°C



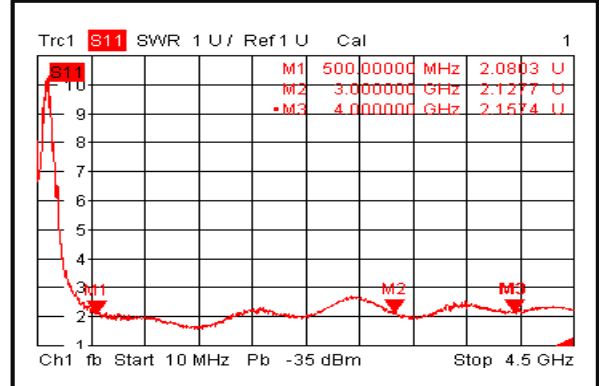
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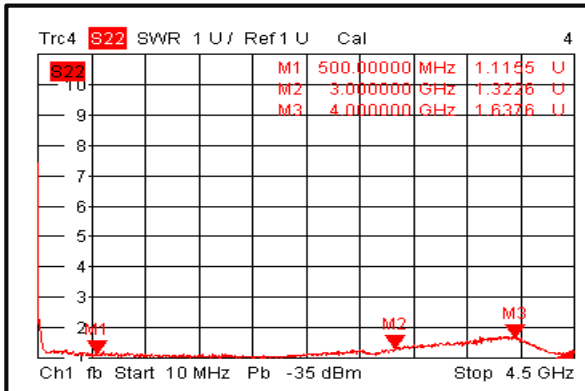
Gain@+85°C



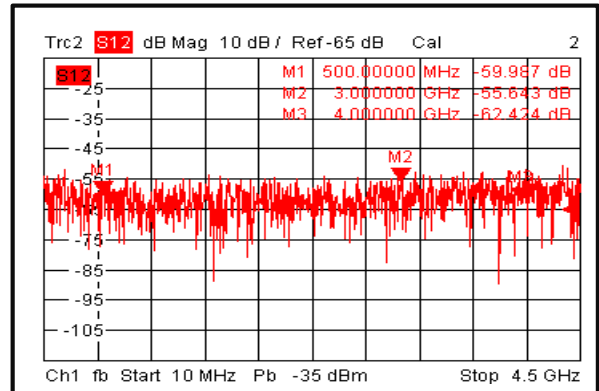
Input VSWR@+85°C



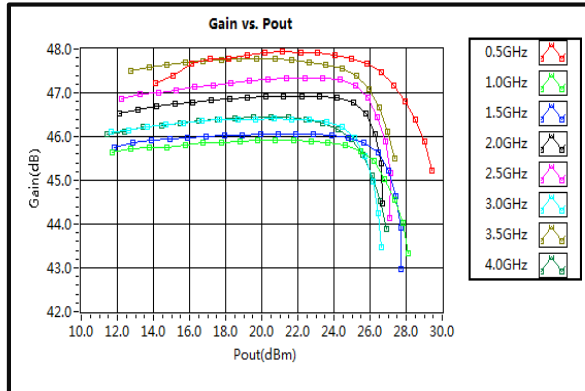
Output VSWR@+85°C



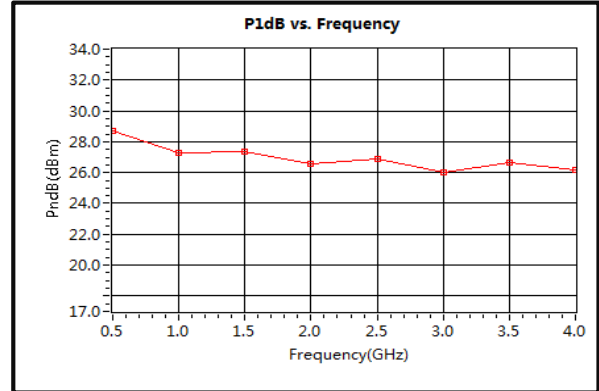
Isolation@+85°C



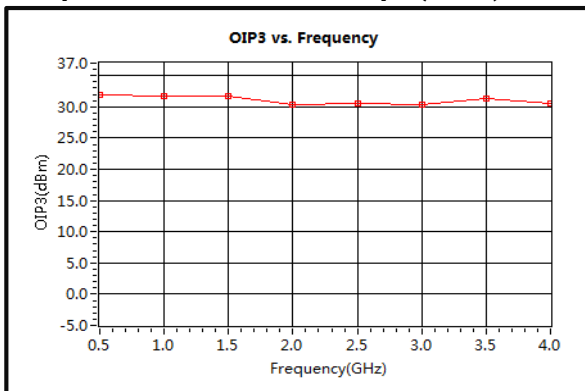
Gain vs. Output Power



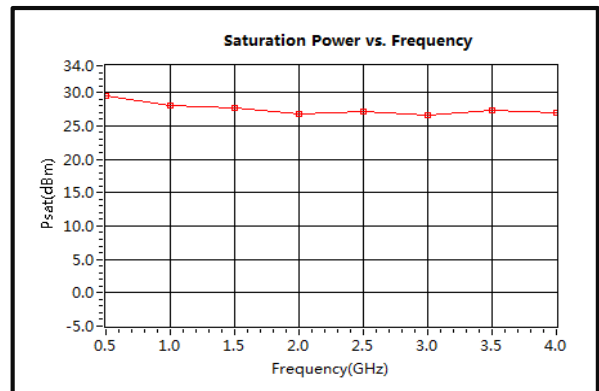
P1dB vs. Frequency



Output Third Order Intercept (OIP3)

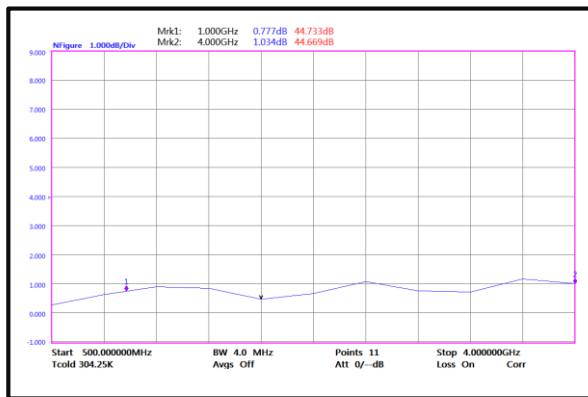


Saturation Power vs. Frequency

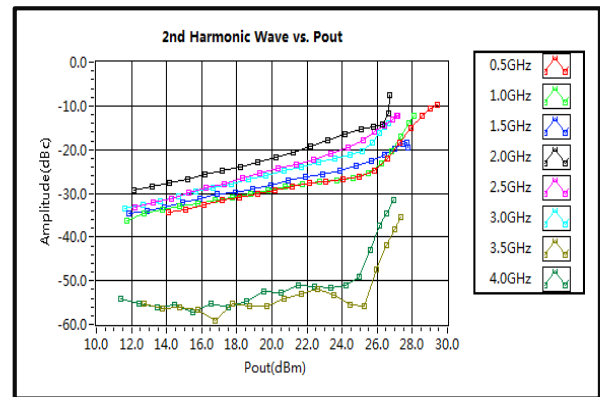




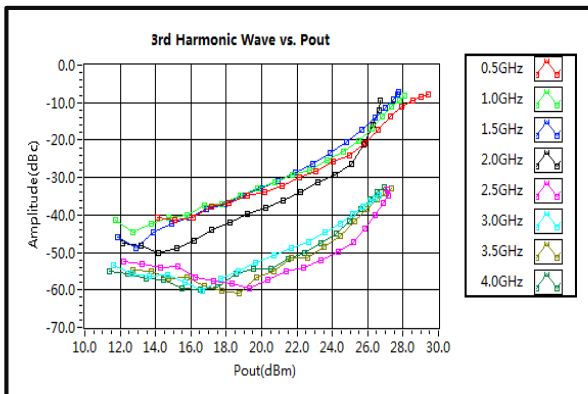
Noise Figure



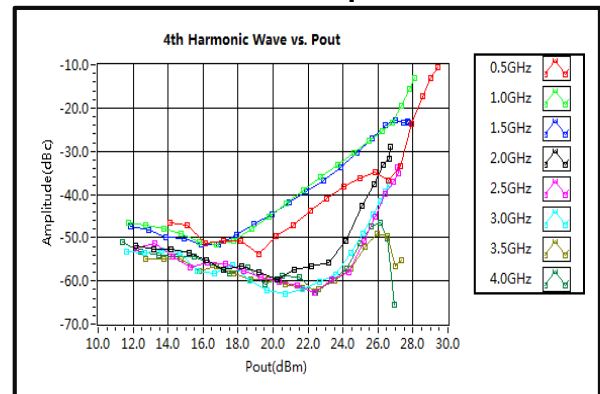
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



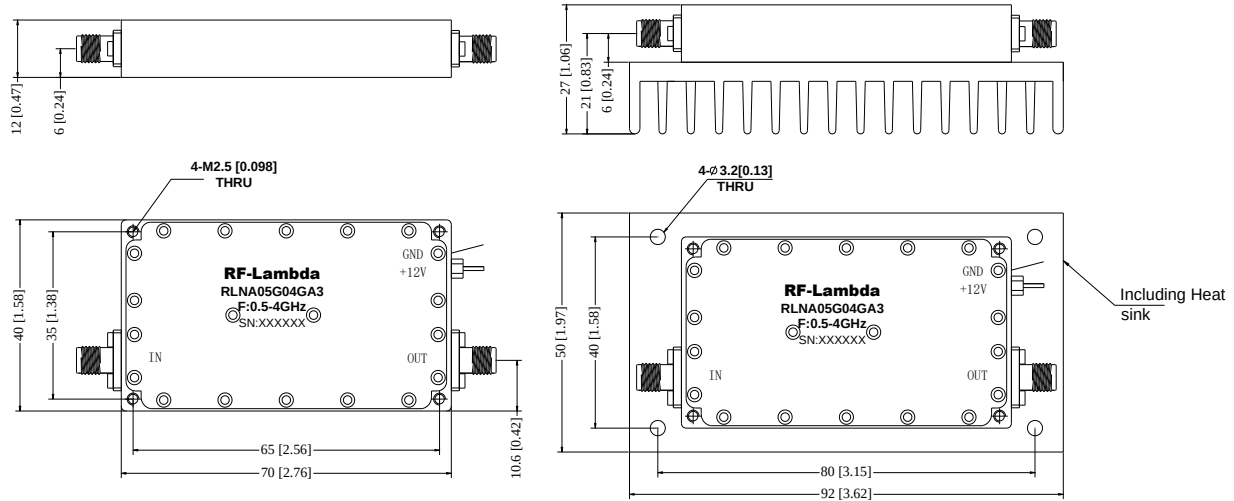
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA05G04GA3	EAR99	0.5-4GHz Low Noise Amplifier

Important Notice

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