

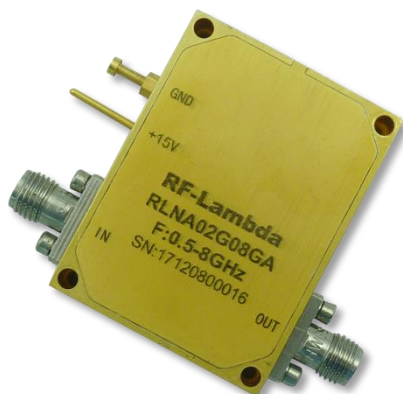


RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA02G08GA

Wide Band Low Noise Amplifier 0.5GHz ~ 8GHz



Features

- Gain: 37dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +28dB m Typical
- Supply Voltage: +15V

Typical Applications

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

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{CC} = +15\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.5		6	6		8	GHz
Gain	35	37		30	35		dB
Gain Flatness		± 1.5			± 1.0		dB
Gain Variation Over Temperature(-45 ~ +85)		± 1.0			± 2.0		dB
Noise Figure		1.5	2.0		1.8	2.5	dB
Input VSWR		2.2			2.6		:1
Output VSWR		1.8			1.5		:1
Output Power for 1 dB Compression (P1dB)	27	29		25.5	26.5		dBm
Saturated Output Power (Psat)		31.5			28.5		dBm
Output Third Order Intercept (IP3)		42			40		dBm
Isolation S12		-60			-60		dB
Supply Current ($V_{CC}=+15\text{V}$)		480	650		480	650	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 Sealing (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+16V
RF Input Power	+2 dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +15V biasing
Power OFF Procedure	
Step 1	Turn off +15V 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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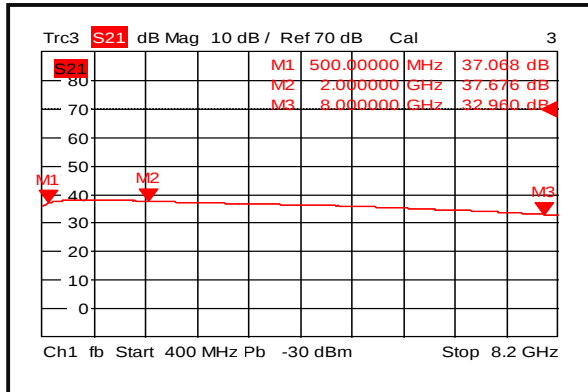
RF-LAMBDA

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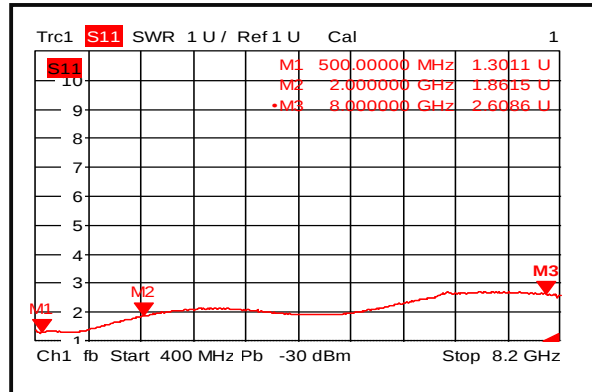
RLNA02G08GA

Typical Performance Plots

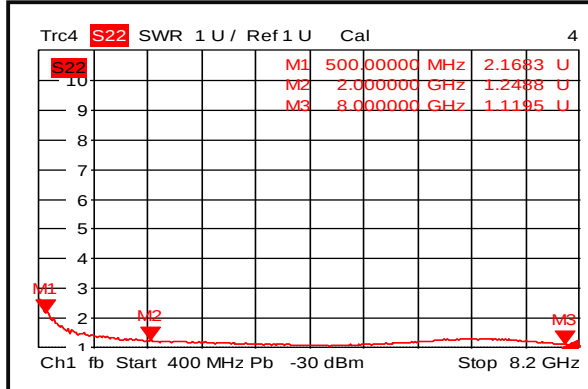
Gain @+25°C



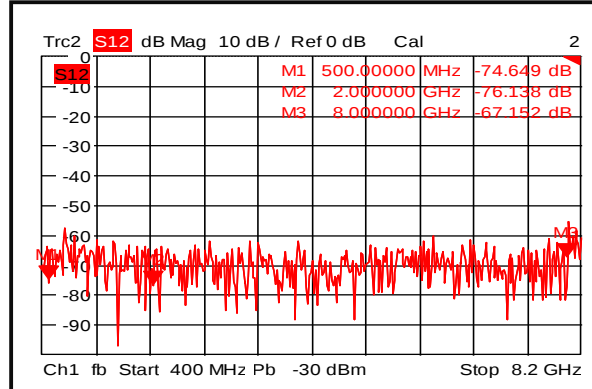
Input VSWR @+25°C



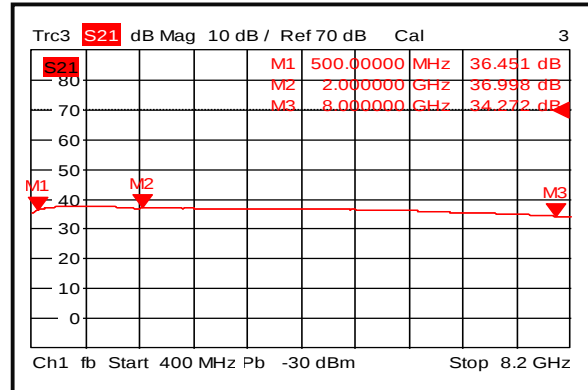
Output VSWR @+25°C



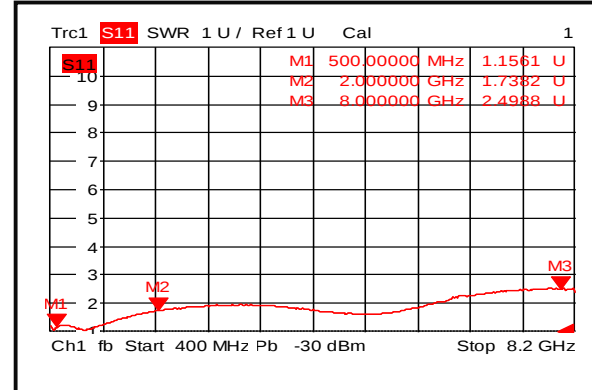
Isolation @+25°C



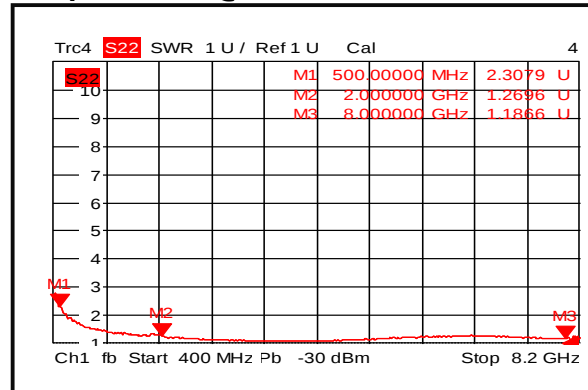
Gain @-45°C



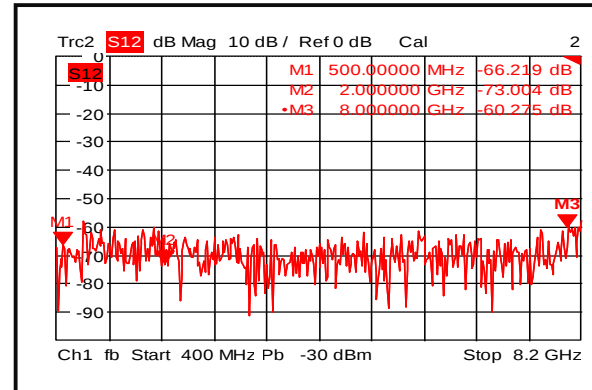
Input VSWR @-45°C



Output VSWR @-45°C



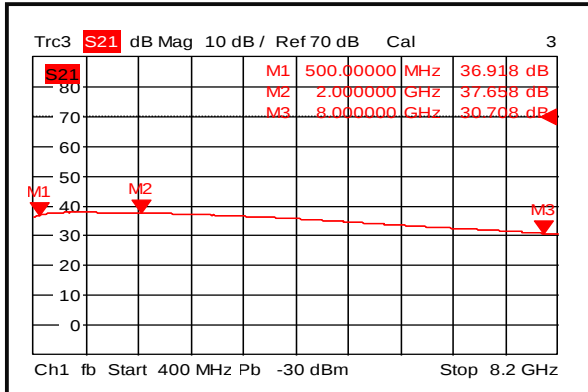
Isolation @-45°C



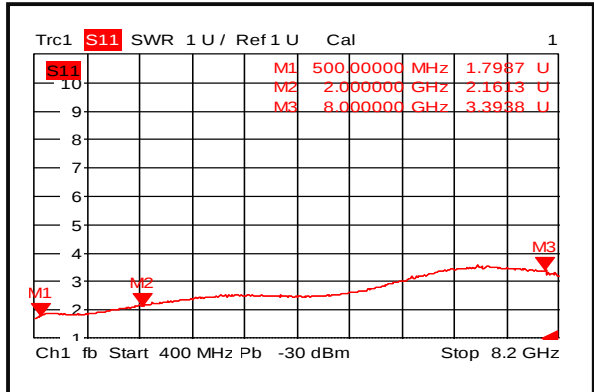
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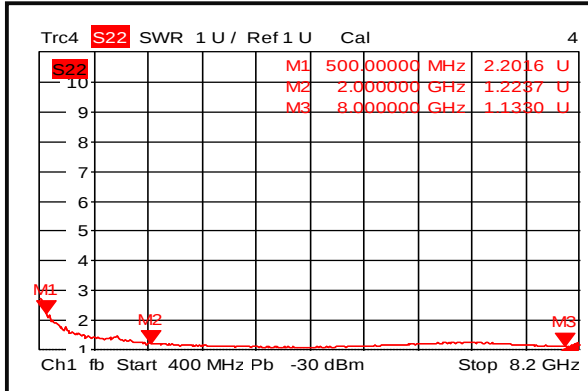
Gain @+85°C



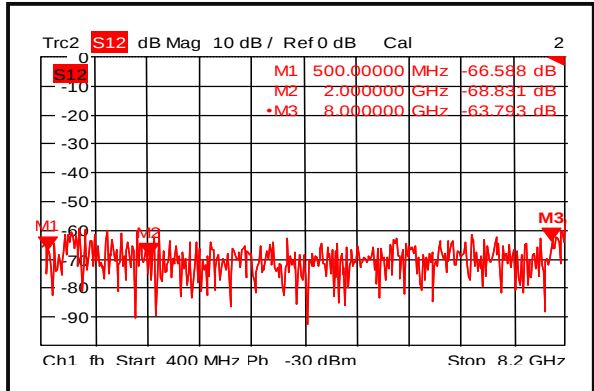
Input VSWR @+85°C



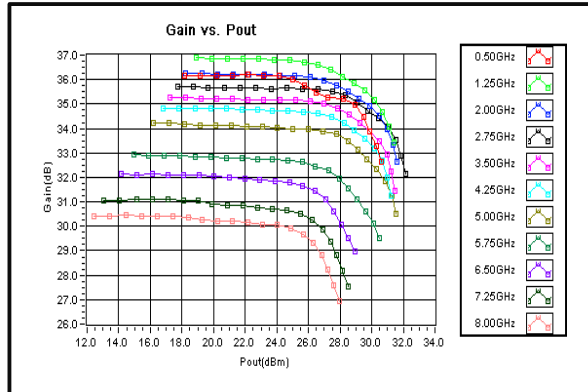
Output VSWR @+85°C



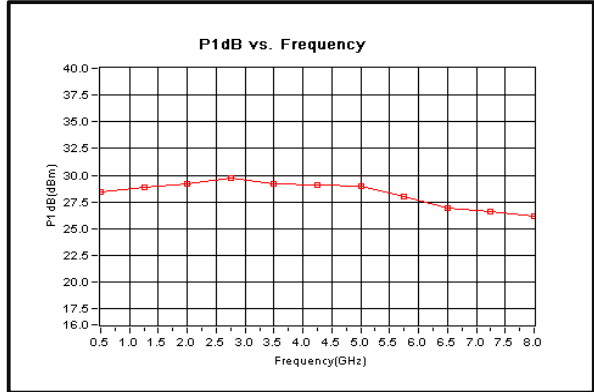
Isolation @+85°C



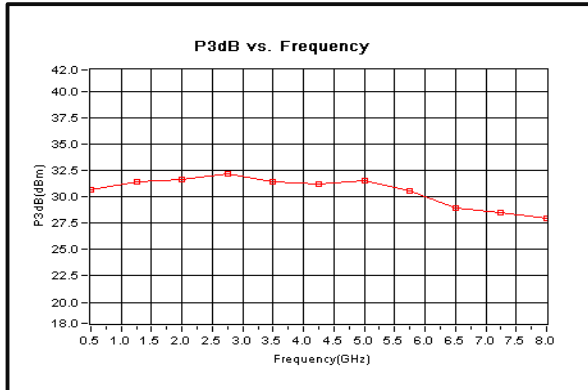
Gain vs. Output Power



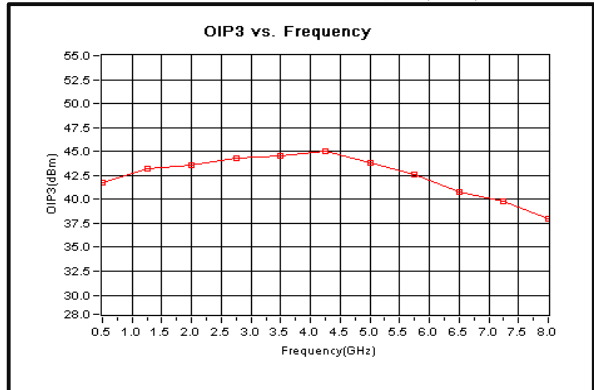
P1dB vs. Frequency



P3dB vs. Frequency

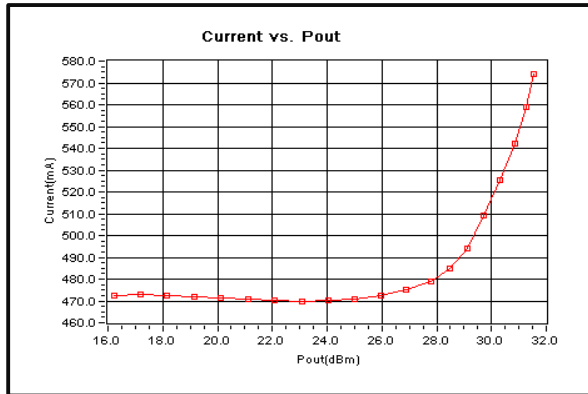


Output Third Order Intercept (IP3)

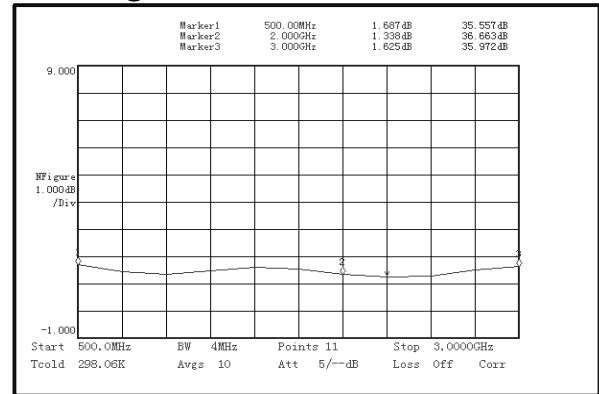




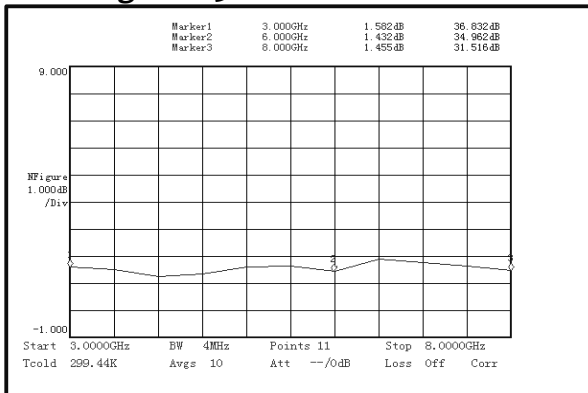
Current



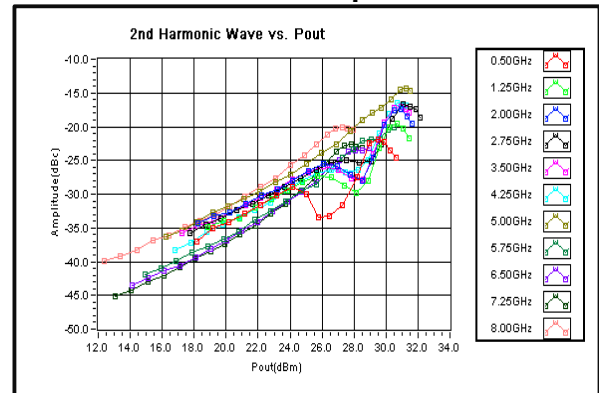
Noise Figure (0.5-3GHz)



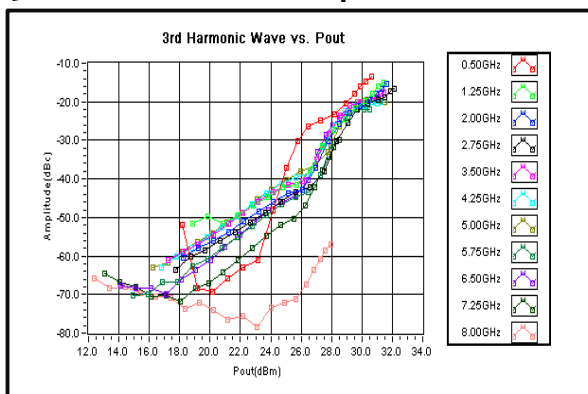
Noise Figure (3-8GHz)



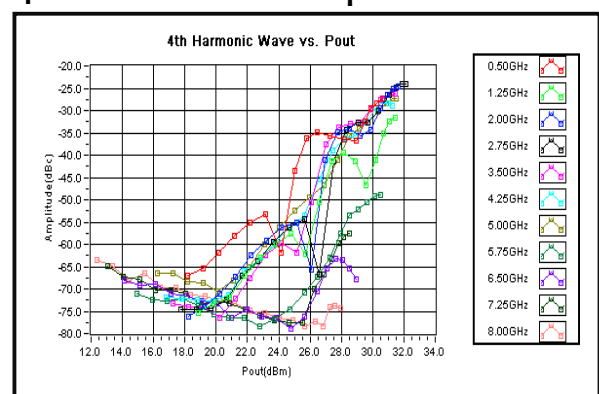
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



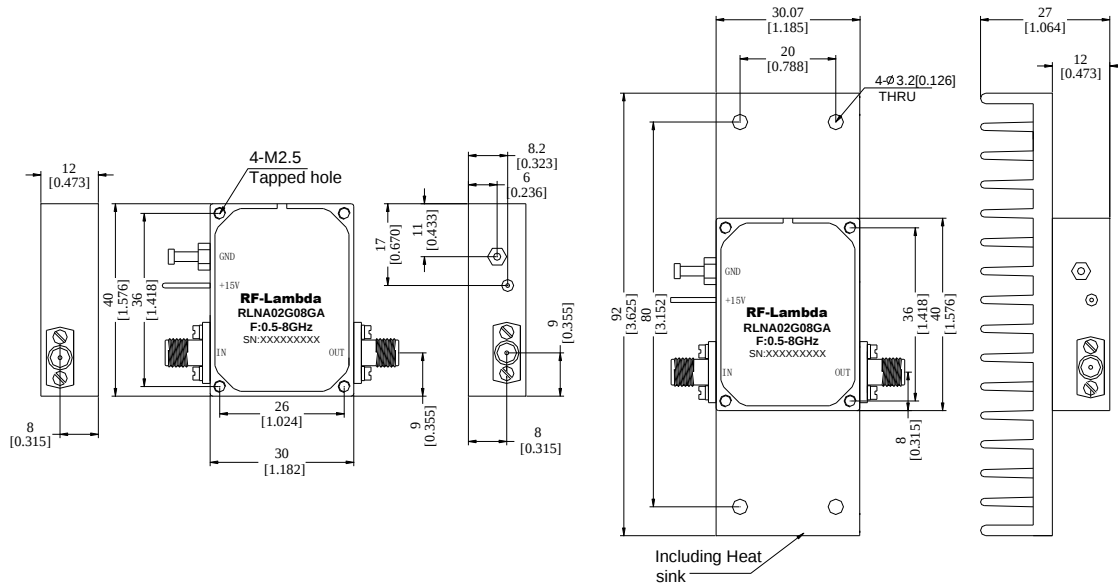
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA02G08GA	EAR99	0.5-8GHz Low Noise Amplifier

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