Wide Band Low Noise Amplifier
4GHz ~ 8GHz

RoHS Compliant

Features

- Gain: 46dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +27dBm Typical

Typical Applications

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

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

Parameter	Min.	Typ.	Max.	Units
Frequency Range	4		8	GHz
Gain	40	46		dB
Gain Flatness		±3.0		dB
Gain Variation Over Temperature (-45 ~ +85)		±2.5		dB
Noise Figure		2.5	3.5	dB
Input VSWR		2.0		: 1
Output VSWR		2.0		: 1
Output 1dB Compression Point (P1dB)	24	27		dBm
Output Third Order Intercept (IP3)		34		dBm
Saturated Output Power (Psat)		29		dBm
Supply Current (Idd)		500	600	mA
Isolation S12		-60		dB
Weight	5.12			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	+15V
RF Input Power	-10dBm

Biasing Up Procedure

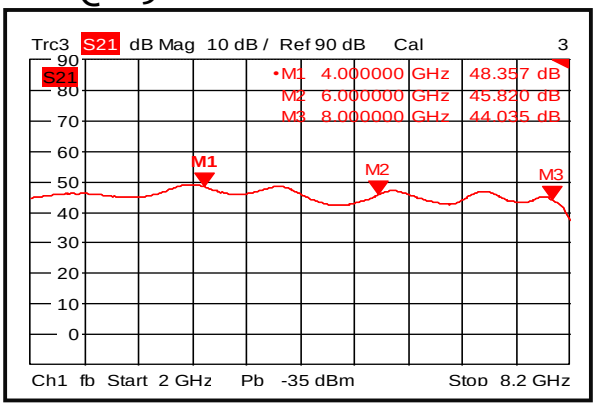
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

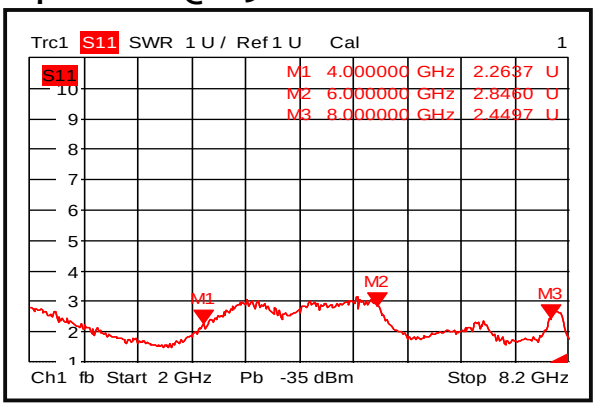
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 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		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Typical Performance Plots

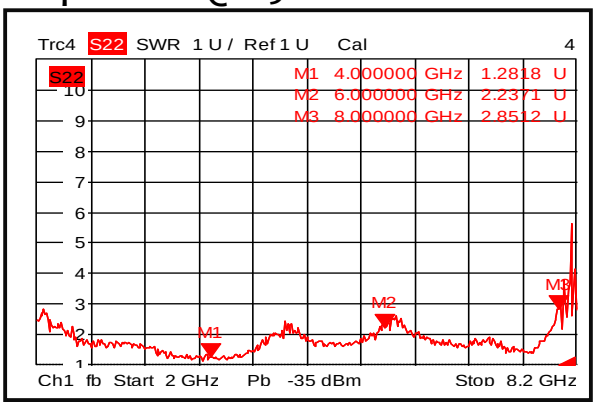
Gain @+25℃



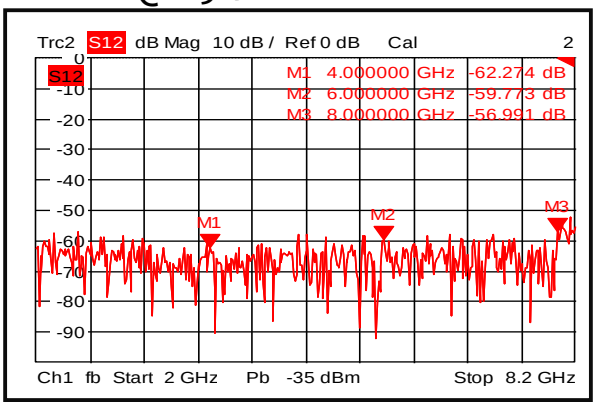
Input VSWR @+25℃



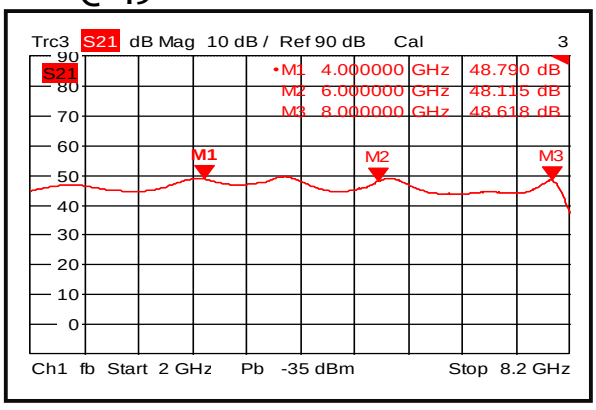
Output VSWR @+25℃



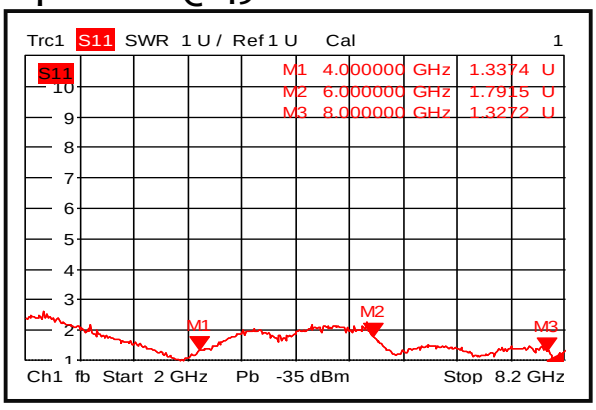
Isolation @+25℃



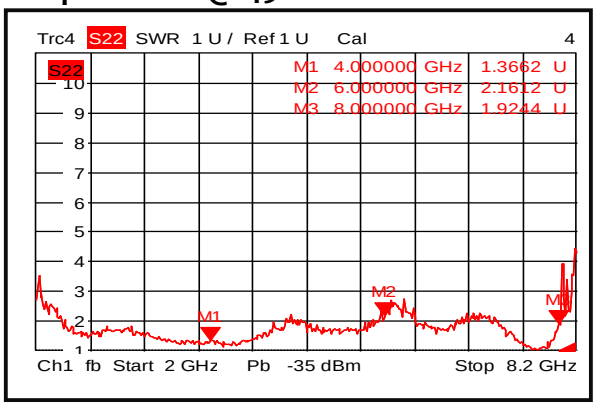
Gain @-45℃



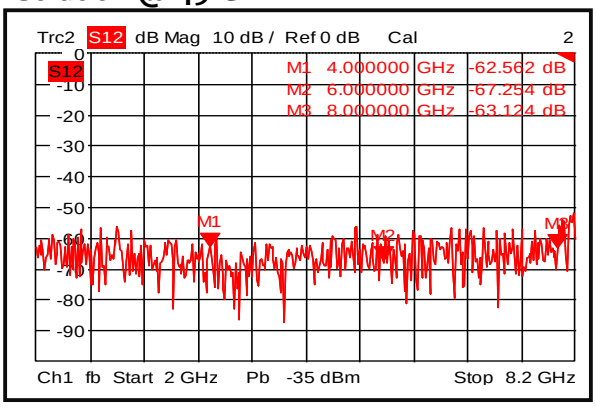
Input VSWR @-45℃



Output VSWR @-45℃



Isolation @-45℃



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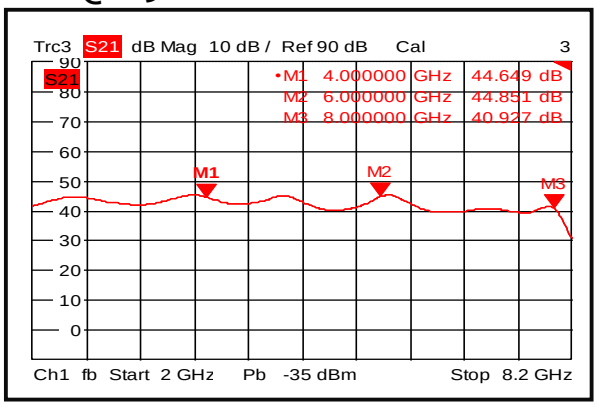
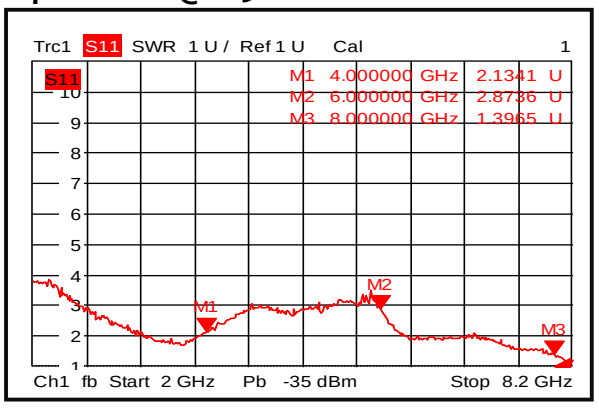
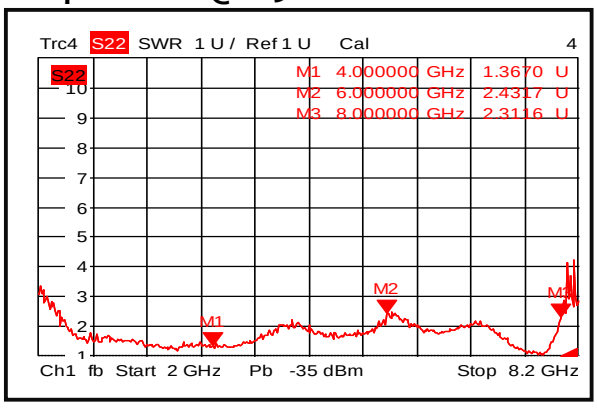
Gain @+85℃



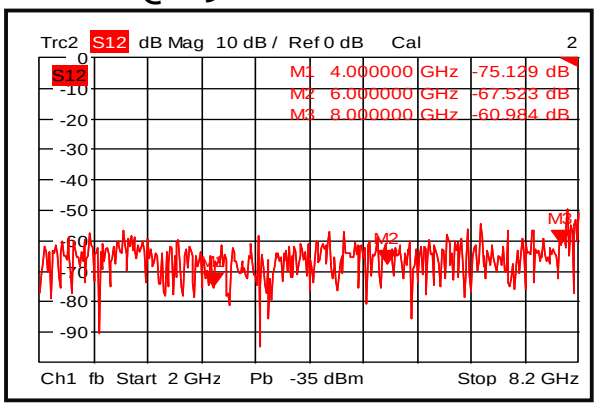
Input VSWR @+85℃



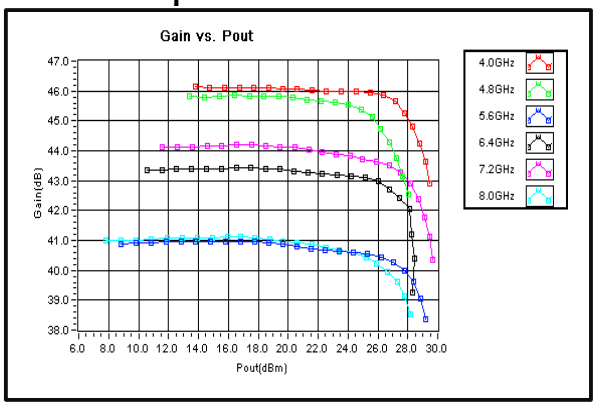
Output VSWR @+85℃



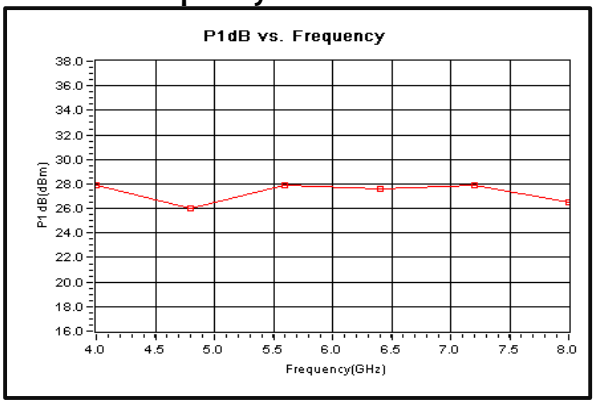
Isolation @+85℃



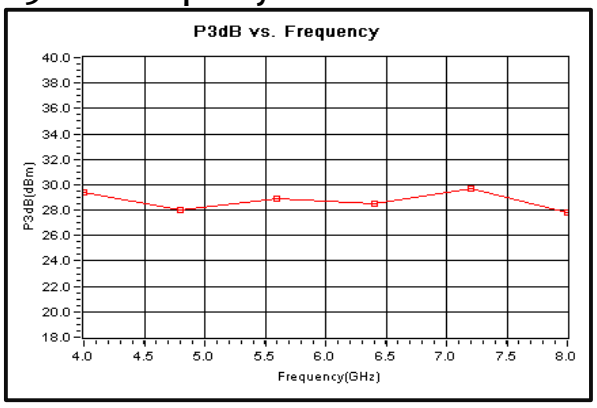
Gain vs. Output Power



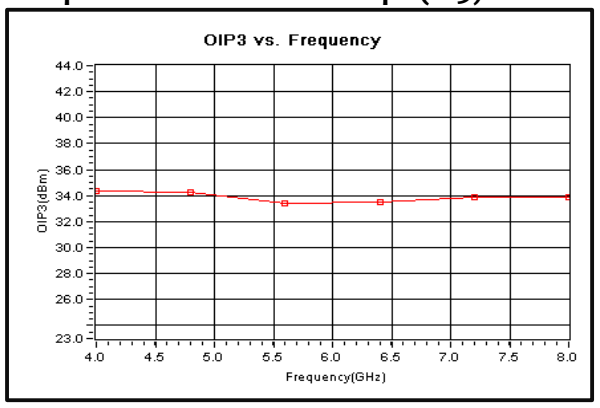
P1dB vs. Frequency



P3dB vs. Frequency



Output Third Order Intercept (IP3)



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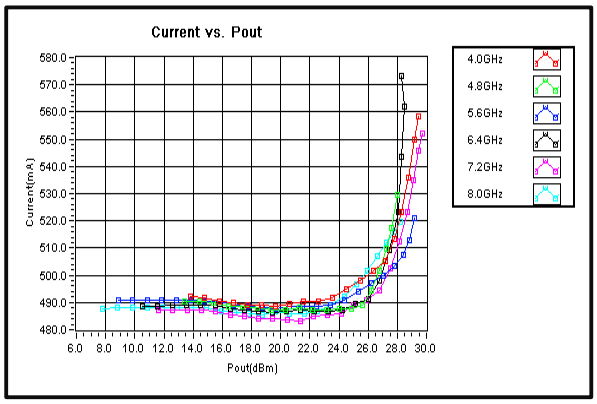
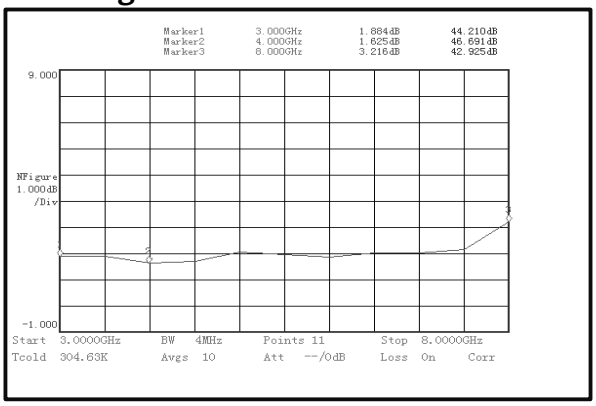
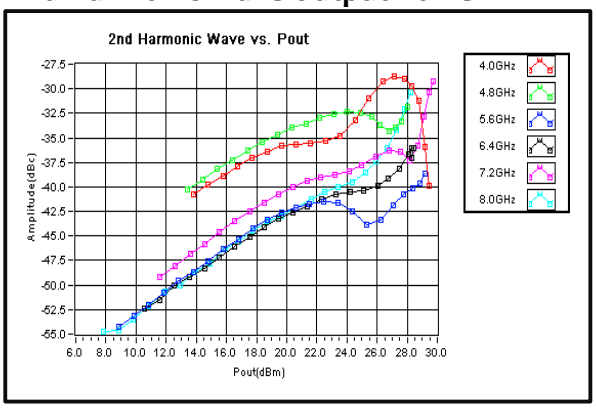
Current



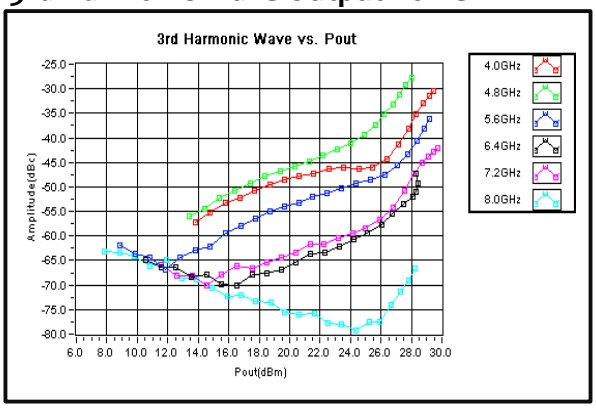
Noise Figure



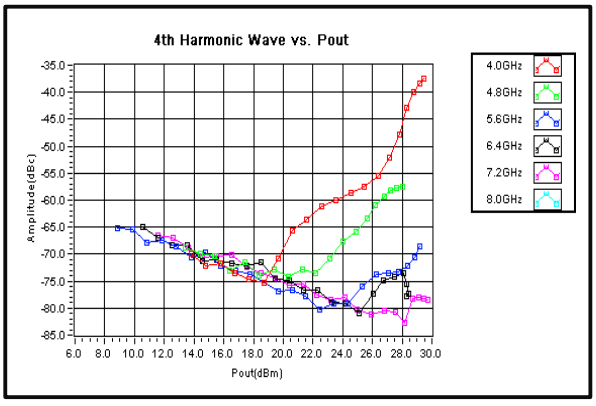
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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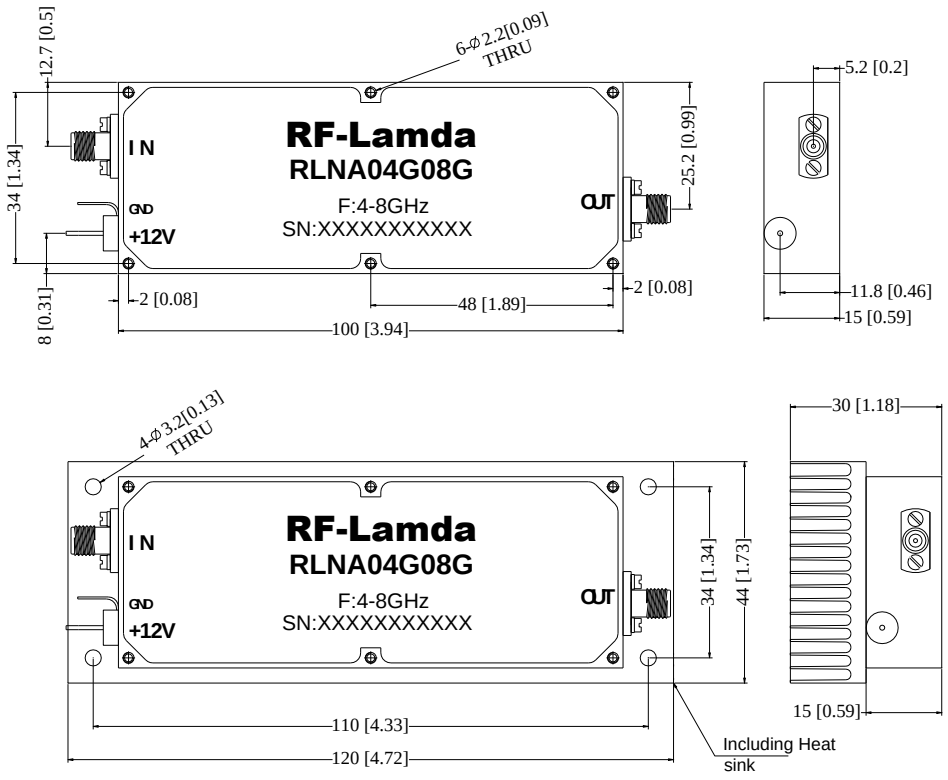
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA04G08G	EAR99	4-8GHz Low Noise Amplifier

Important Notice

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