Wide Band Ultra Low Noise Amplifier 2GHz~8GHz

RoHS Compliant

Features

- Gain: 32dB Typical
- Noise Figure: 0.6dB Typical
- Output P1dB: 13dBm Typical
- Supply Voltage: +15V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, TA = +25°C, Vcc = +15V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	2		6	6		8	GHz
Gain	29	32		29	32		dB
Gain Flatness		±0.5	±1.5		±0.5	±1.5	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure	0.4	0.8	1.0	0.4	0.8	1.1	dB
Input VSWR		1.6			2.5		: 1
Output VSWR		1.3	1.8		1.7	2.0	: 1
Output 1dB Compression Point (P1dB)	7	10		10	13		dBm
Saturated Output Power (Psat)		12			15		dBm
Output Third Order Intercept (IP3)		18			20		dBm
Supply Current (Vcc=+15V)		100	130		100	130	mA
Isolation S12		-60			-55		dB
Weight	0.95						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	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15.5V
RF Input Power	-25dBm

Biasing Up Procedure

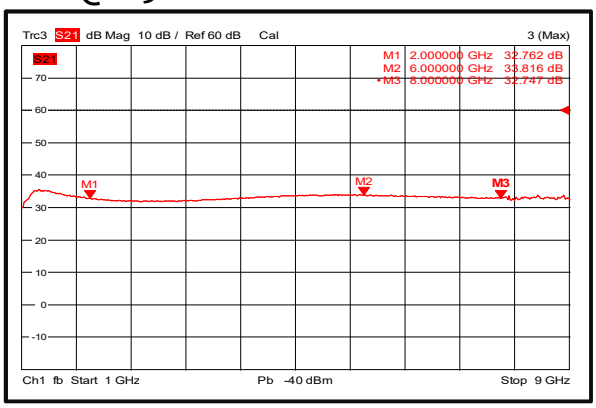
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +15V biasing
Power OFF Procedure	
Step 1	Turn off +15V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

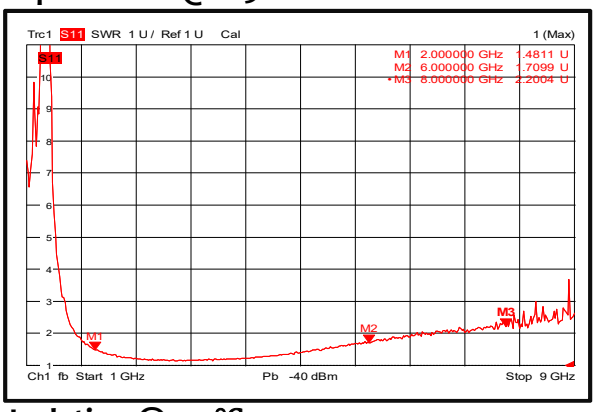
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours
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

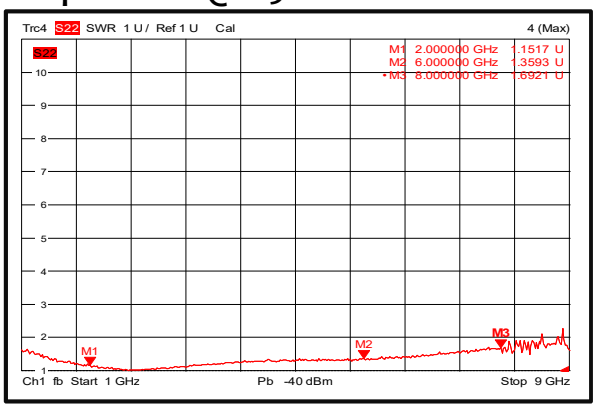
Gain @+25℃



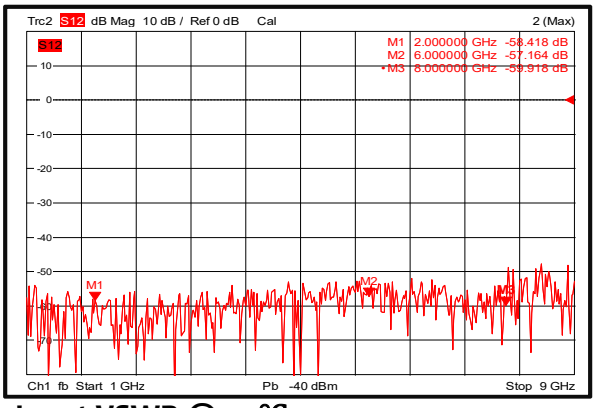
Input VSWR @+25℃



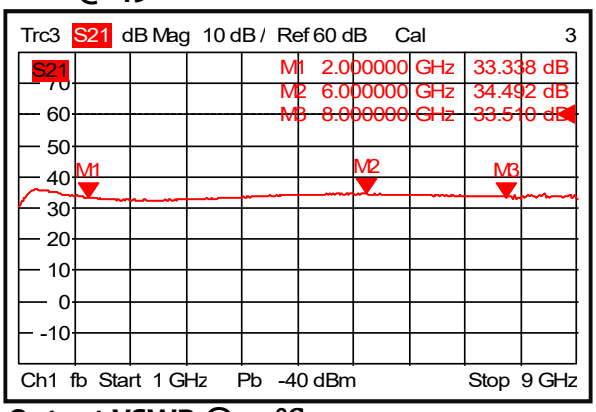
Output VSWR @+25℃



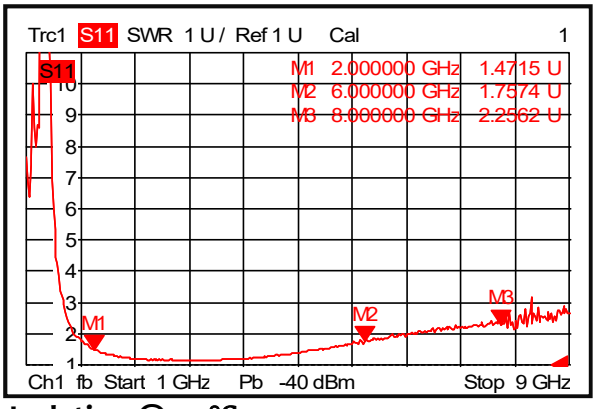
Isolation @+25℃



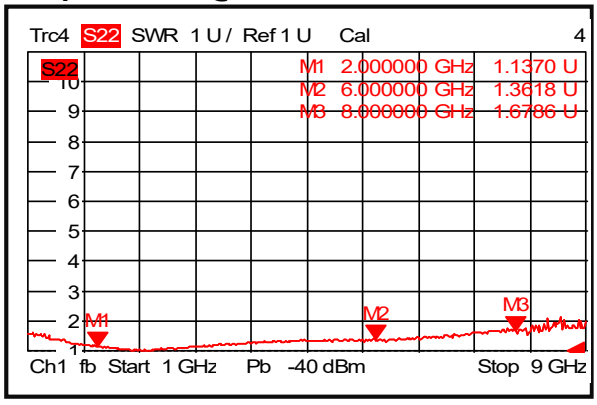
Gain @-45℃



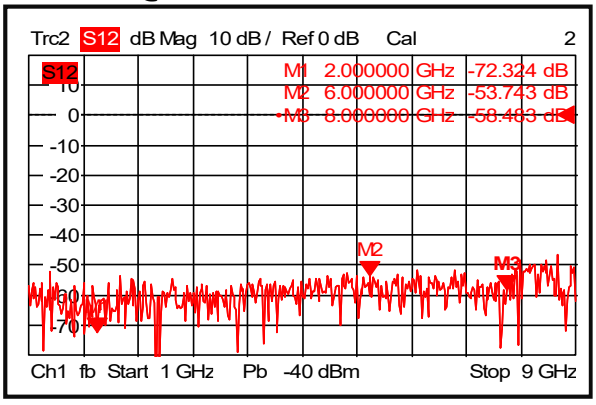
Input VSWR @-45℃



Output VSWR @-45℃

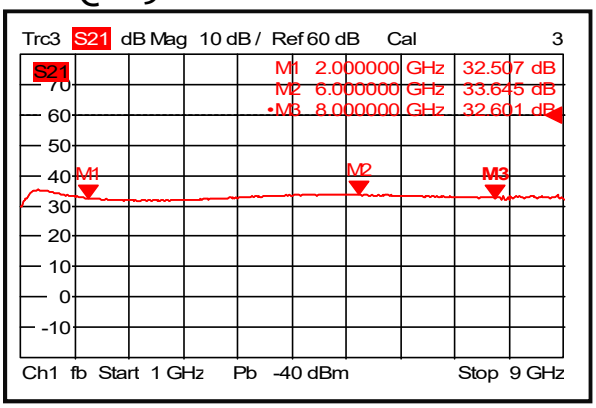


Isolation @-45℃

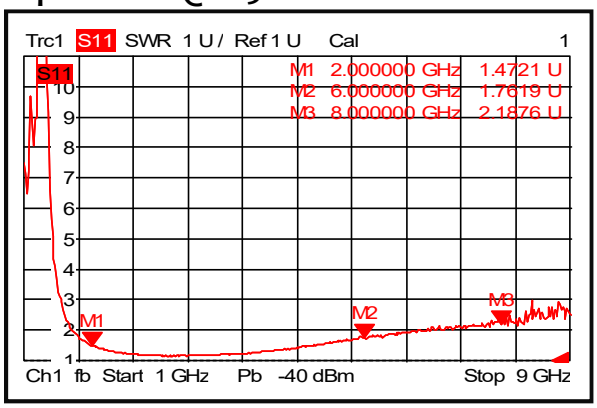


Wide Band Ultra Low Noise Amplifier 2GHz~8GHz

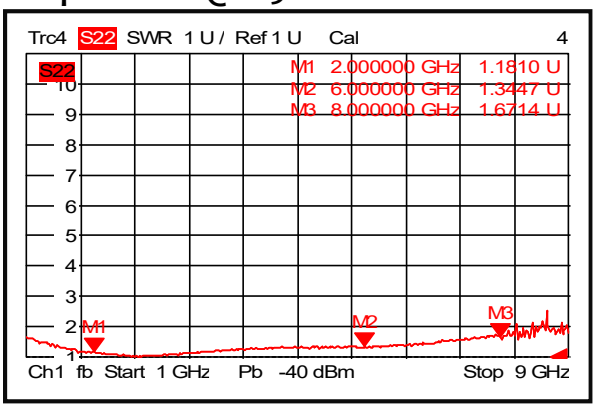
Gain @+85℃



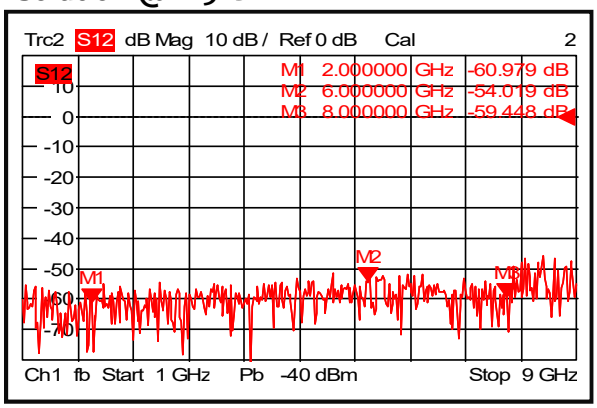
Input VSWR @+85℃



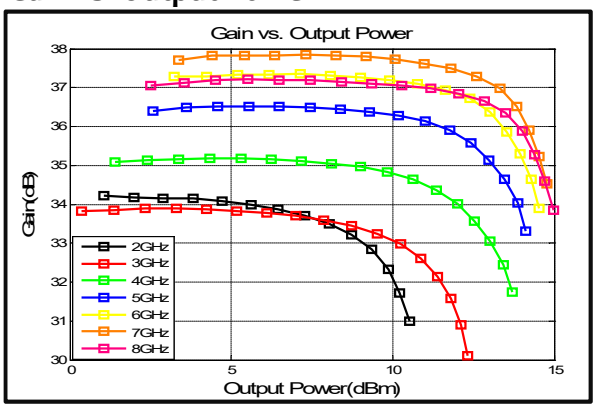
Output VSWR @+85℃



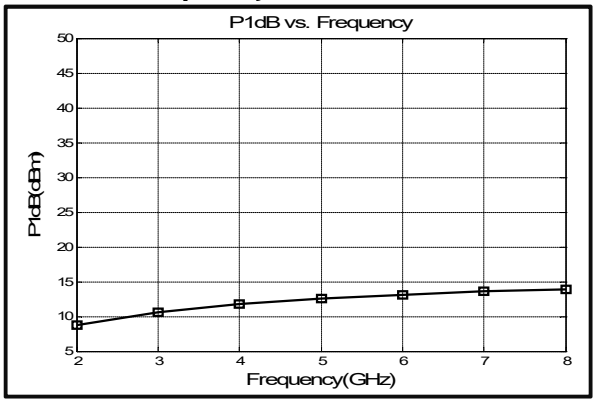
Isolation @+85℃



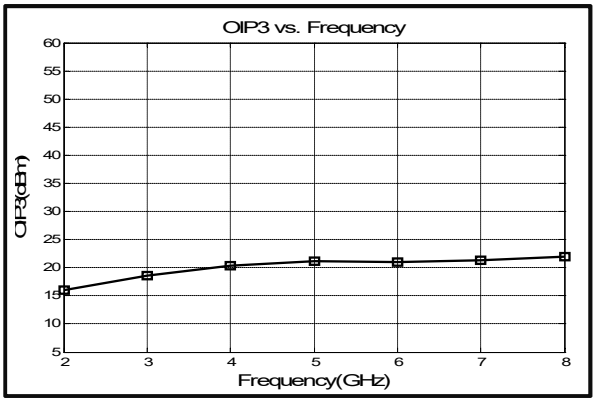
Gain vs. Output Power



P1dB vs. Frequency



Output Third Order Intercept (IP3)



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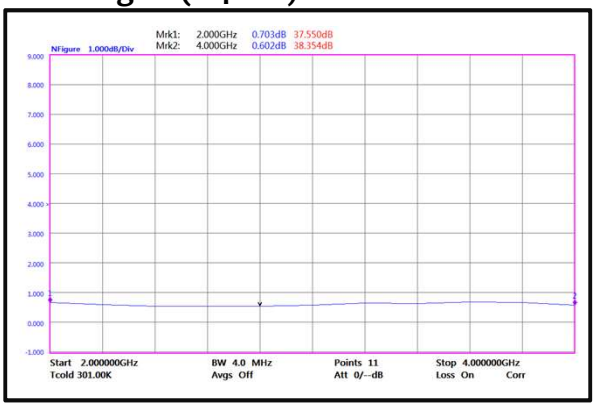
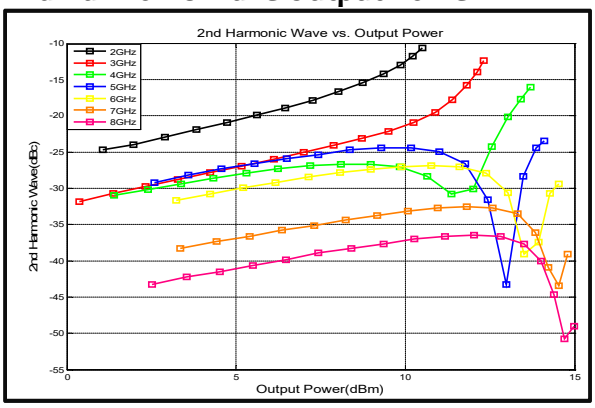
Noise Figure(2-4GHz)

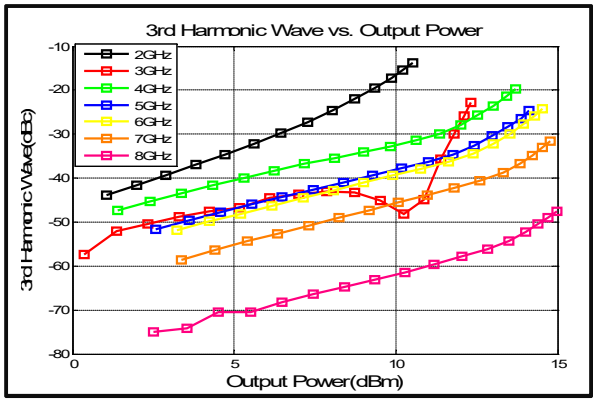


Noise Figure(4-8GHz)

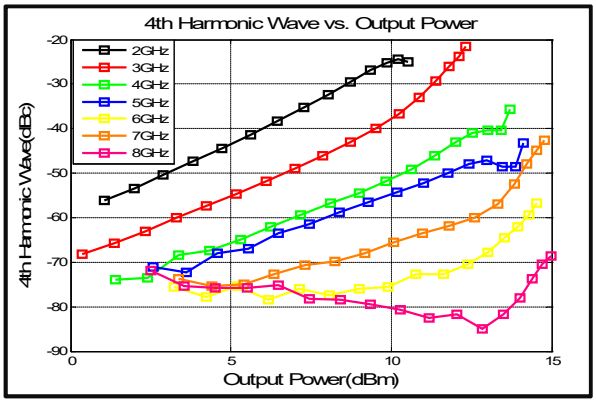
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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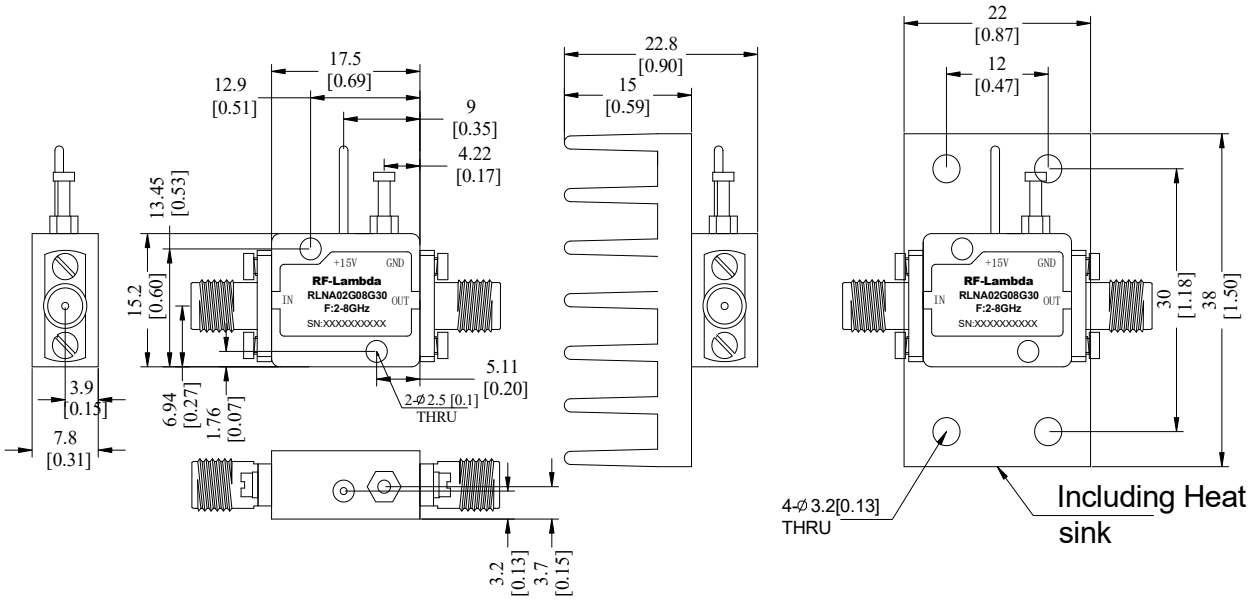
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	Description
RLNA02G08G30	2-8GHzWide Band Ultra Low Noise Amplifier

Important Notice

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