Ultra Low Noise Amplifier
0.8GHz ~ 2.5GHz

RoHS Compliant

Features

- Gain: 60dB Typical
- Noise Figure: 0.8dB Typical
- P1dB Output Power: +19dBm Typical
- Supply Voltage: +15V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test Instrument

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

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.8		2.5	GHz
Gain	58	60		dB
Gain Flatness		±1.5	±2.5	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0		dB
Noise Figure	0.65	0.8	1.0	dB
Input VSWR		1.4	3.5	: 1
Output VSWR		1.8	2.5	: 1
Output 1dB Compression Point (P1dB)	16	19		dBm
Saturated Output Power (Psat)		21		dBm
Output Third Order Intercept (IP3)		32		dBm
Supply Current (Vcc=+15V)		175	200	mA
Isolation S12		-75		dB
Weight	1.06			Ounces
Impedance	50			Ohms
Input / Output Connectors	SMA-Female			
Finish	Gold Plated			
Material	Aluminum			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

Ultra Low Noise Amplifier 0.8GHz ~ 2.5GHz

Absolute Maximum Ratings

Operating Voltage	+15.5V
RF Input Power	-40dBm

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.

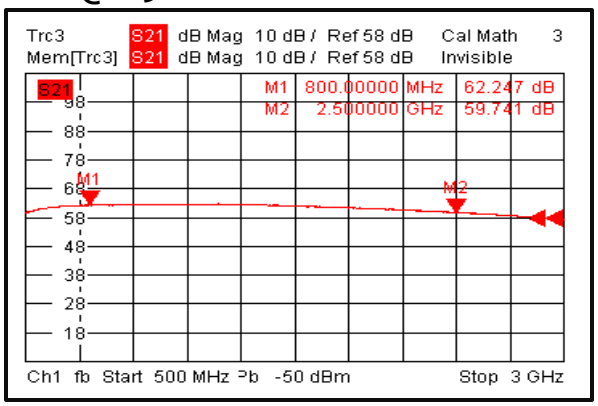
Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+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)

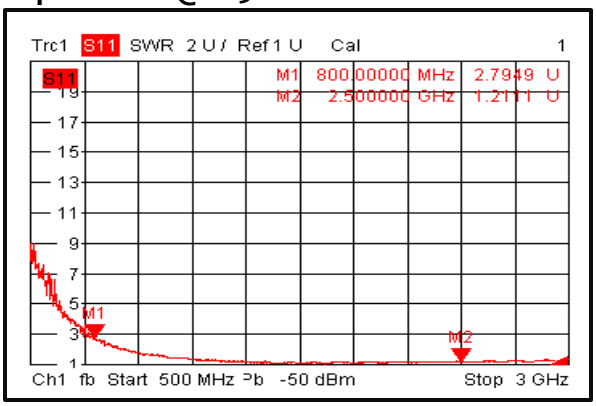
Ultra Low Noise Amplifier 0.8GHz ~ 2.5GHz

Typical Performance Plots

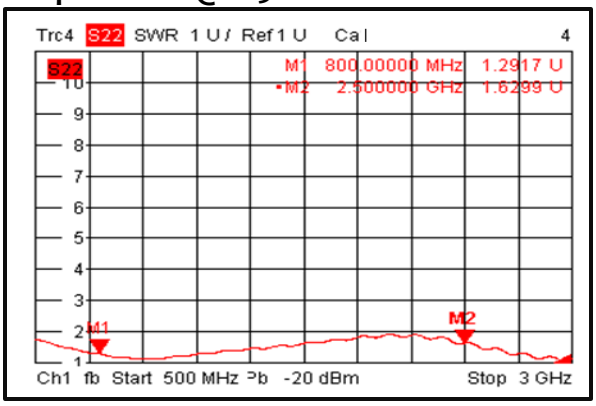
Gain @+25℃



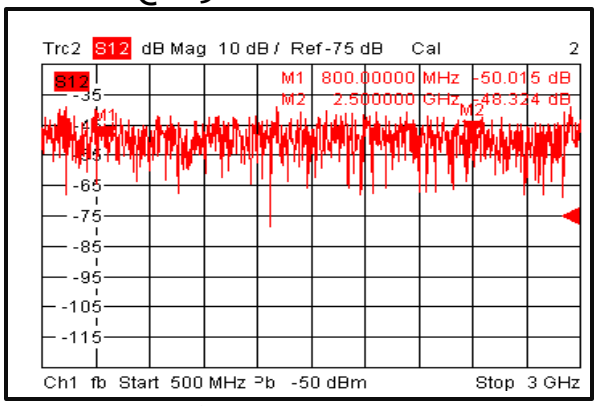
Input VSWR@+25℃



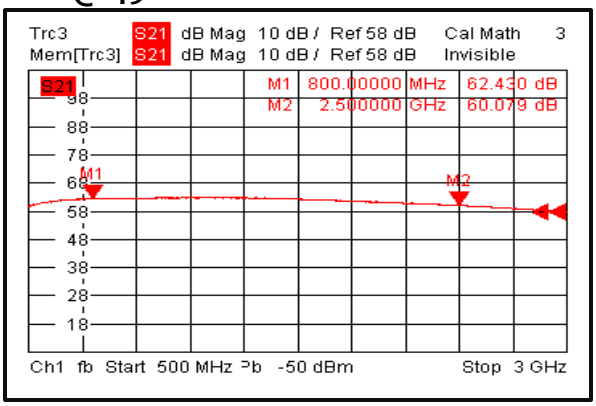
Output VSWR@+25℃



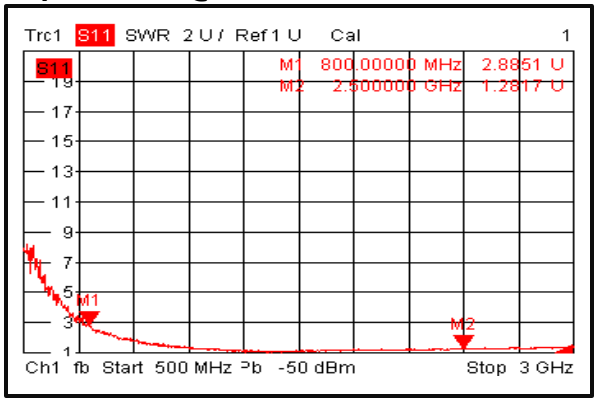
Isolation@+25℃



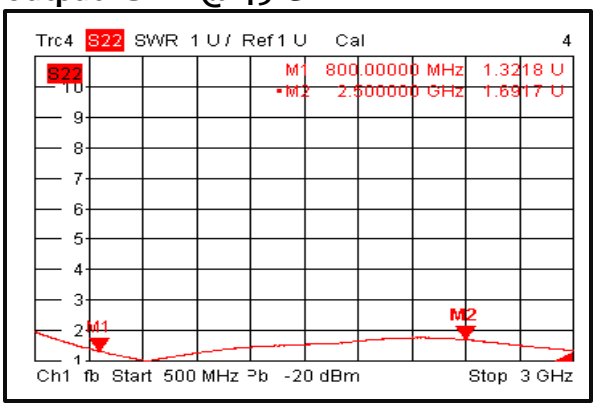
Gain @-45℃



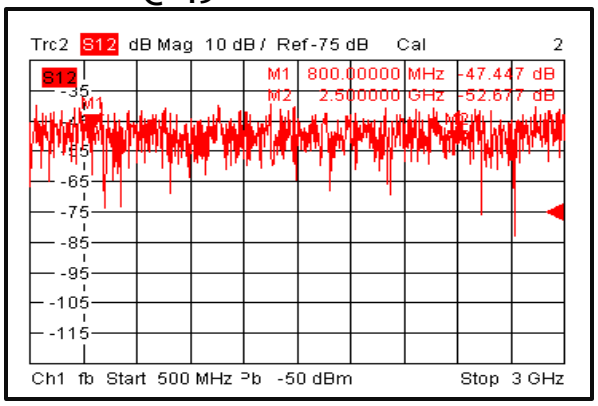
Input VSWR @-45℃



Output VSWR @-45℃

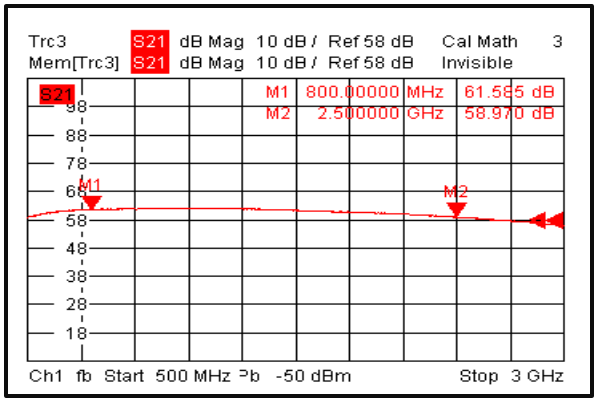


Isolation @-45℃

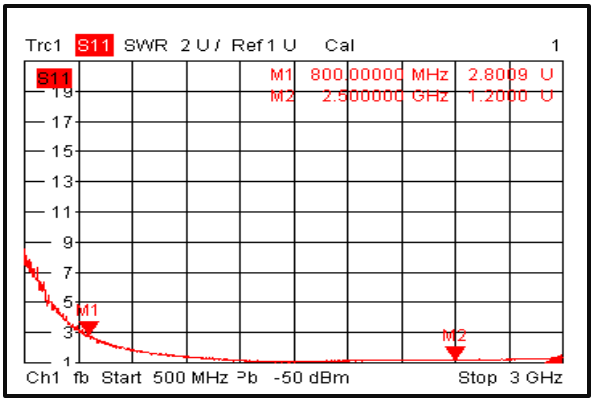


Ultra Low Noise Amplifier 0.8GHz ~ 2.5GHz

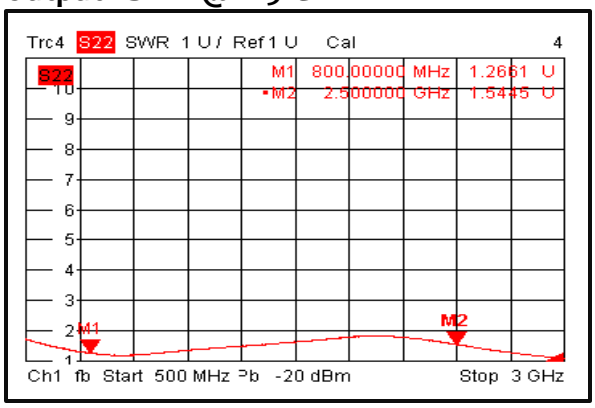
Gain @+85℃



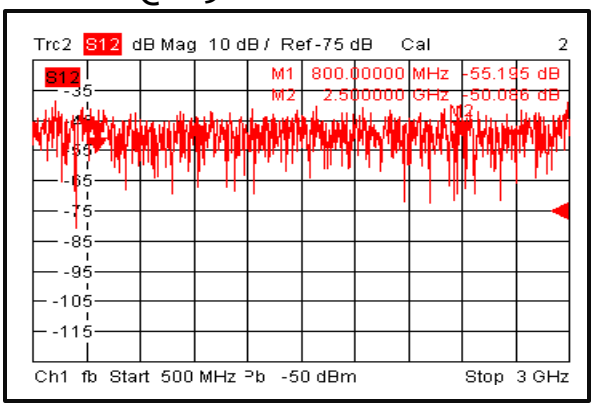
Input VSWR @+85℃



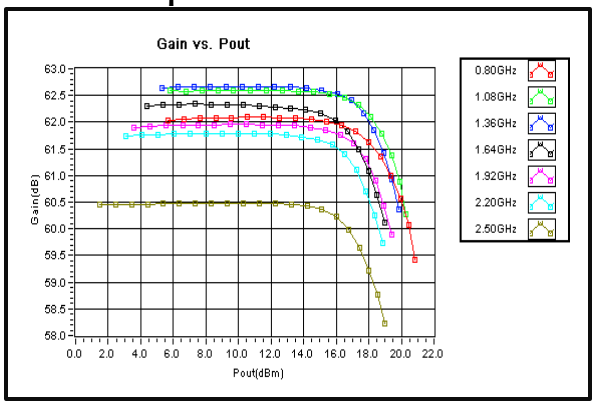
Output VSWR @+85℃



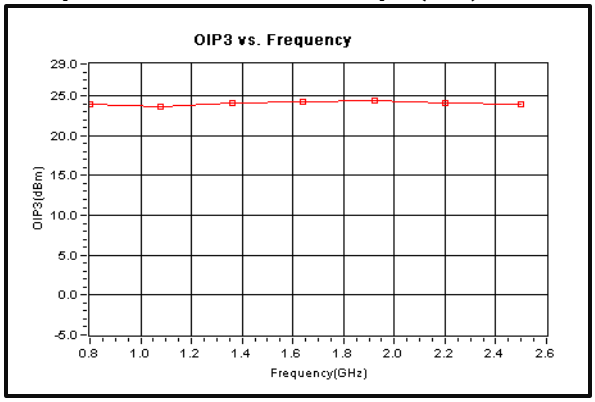
Isolation @+85℃



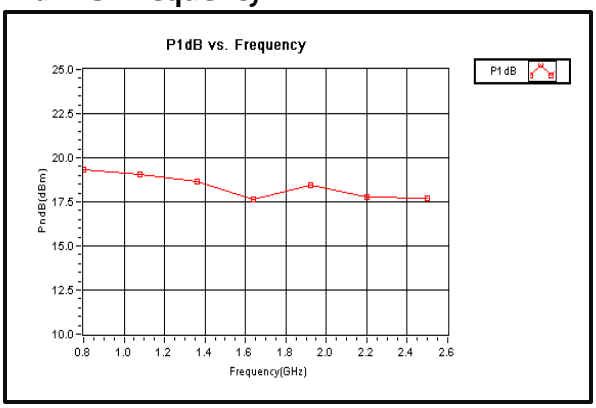
Gain vs. Output Power



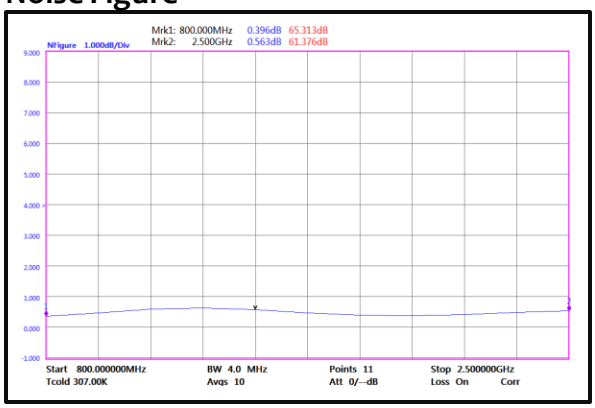
Output Third Order Intercept (IP3)



P1dB vs. Frequency

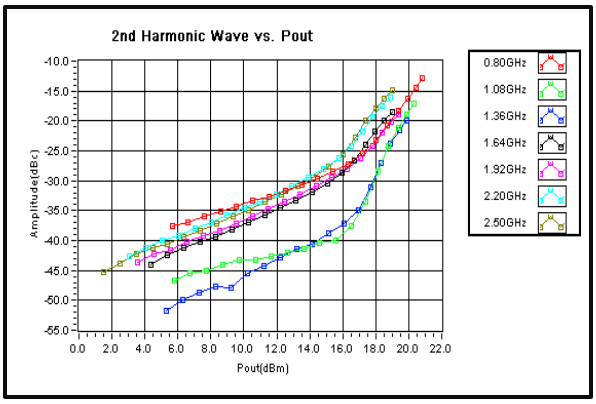


Noise Figure

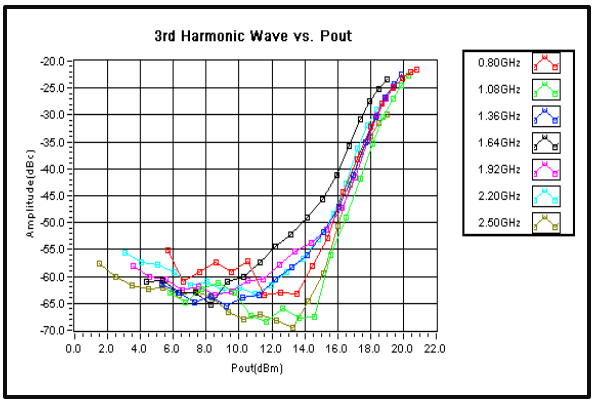


Ultra Low Noise Amplifier 0.8GHz ~ 2.5GHz

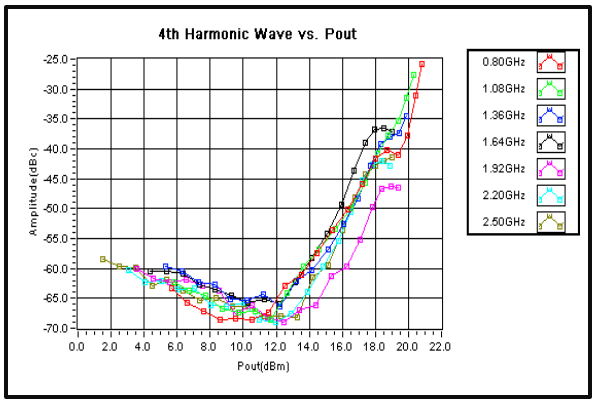
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



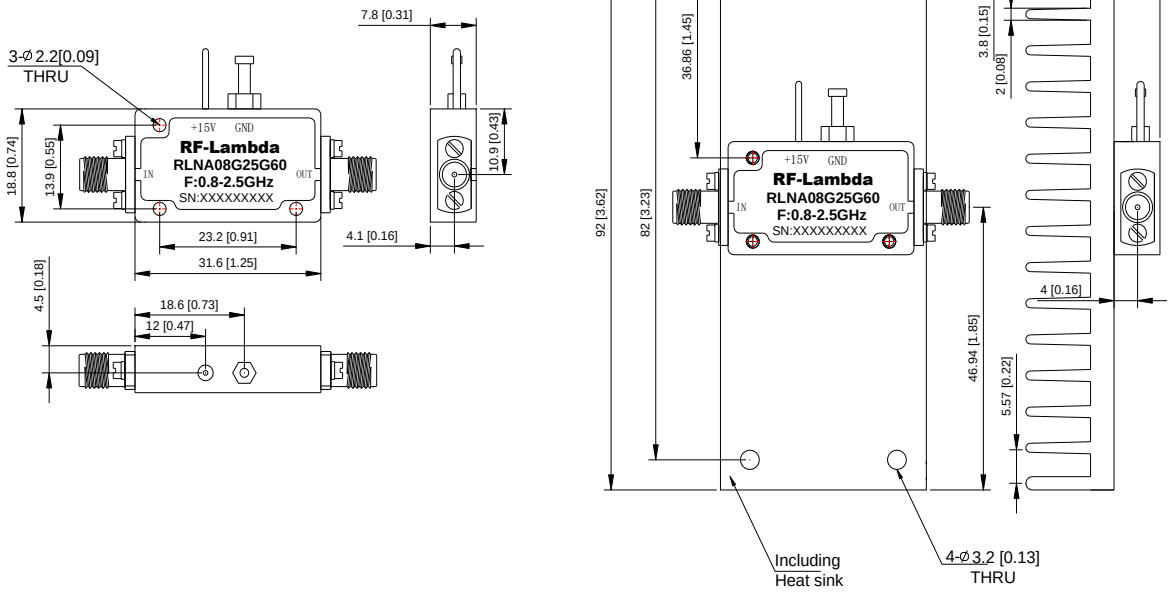
4th Harmonic Wave Output Power



Ultra Low Noise Amplifier 0.8GHz ~ 2.5GHz

Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA08G25G60	EAR99	0.8-2.5GHz Ultra Low Noise Amplifier

Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.
RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.