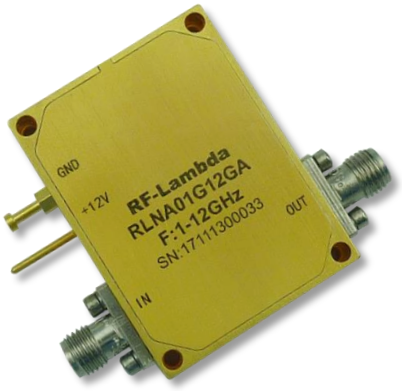
Ultra Wide Band Low Noise Amplifier 1GHz~12GHz



RoHS Compliant

Features

- Gain: 35 dB Typical
- Noise Figure: 1.8 dB Typical
- P1dB Output Power:+26dBm Typical
- Supply Voltage: +12V
- 50 Ohm Matched

Typical Applications

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

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1		6	6		12	GHz
Gain	30	35		29	34		dB
Gain Flatness		±1.0			±1.0		dB
Gain Variation Over Temperature (-45 ~ +85)		±0.8			±1.0		dB
Noise Figure		1.8	2.5		1.8	2.8	dB
Input VSWR		1.6	2.0		1.7	2.0	: 1
Output VSWR		1.5	2.0		1.5	2.0	: 1
Output 1dB Compression Point (P1dB)	24	26		24	25		dBm
Saturated Output Power (Psat)		27			26		dBm
Output Third Order Intercept (IP3)		37			35		dBm
Supply Current (Vcc=+12V)		320	400		320	400	mA
Isolation S12		-65			-60		dB
Weight	3.17						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 (Option with extra charge)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	+2dB m

Biasing Up Procedure

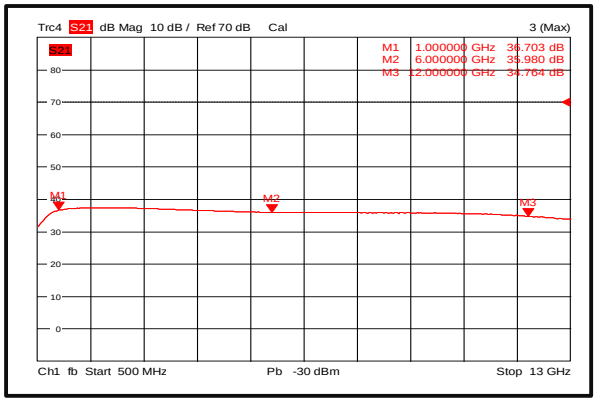
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

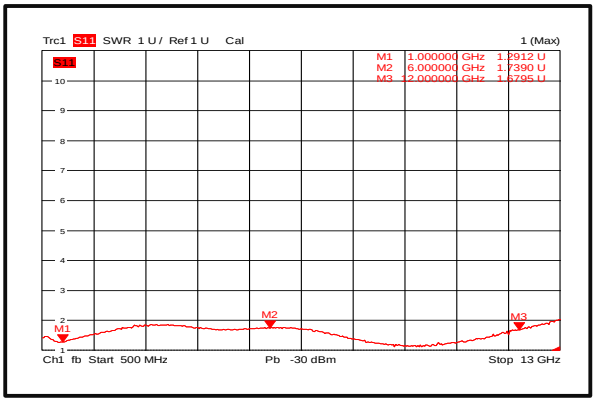
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours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



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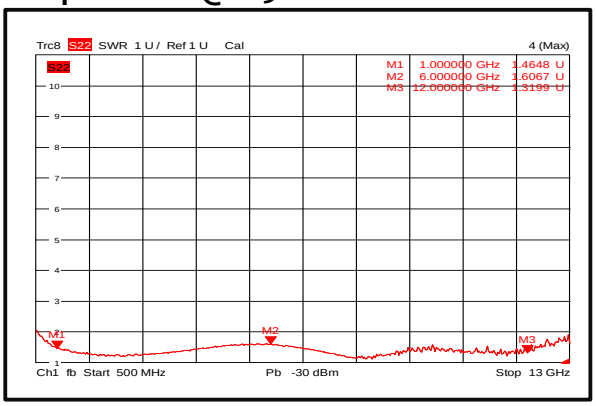
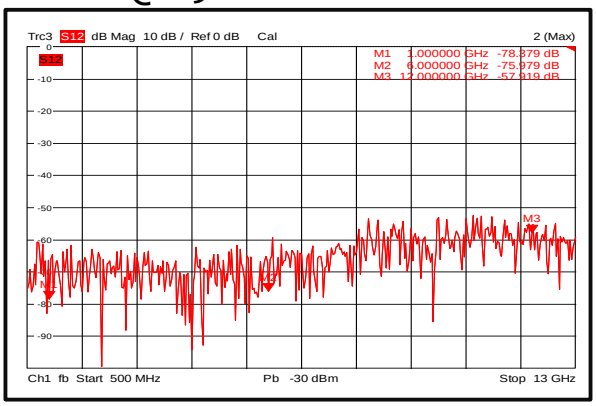
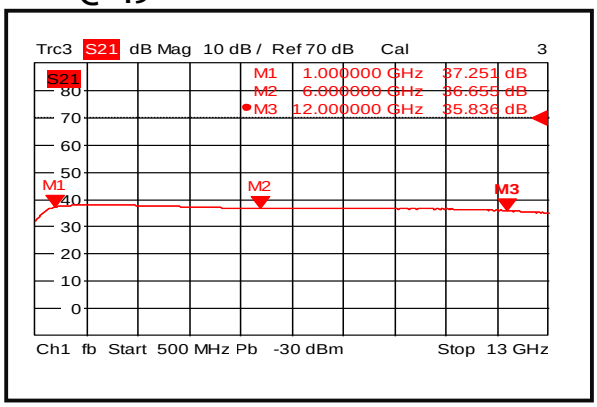
Output VSWR@+25℃



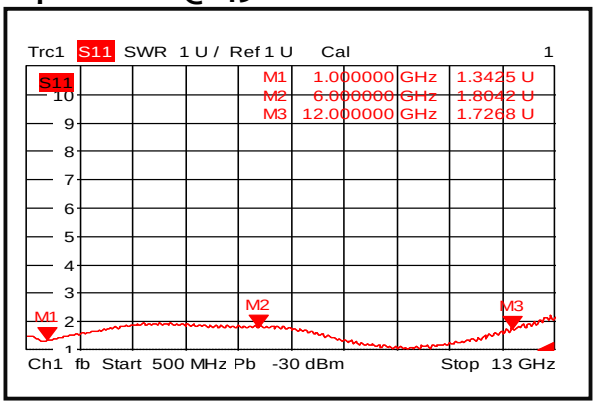
Isolation@+25℃



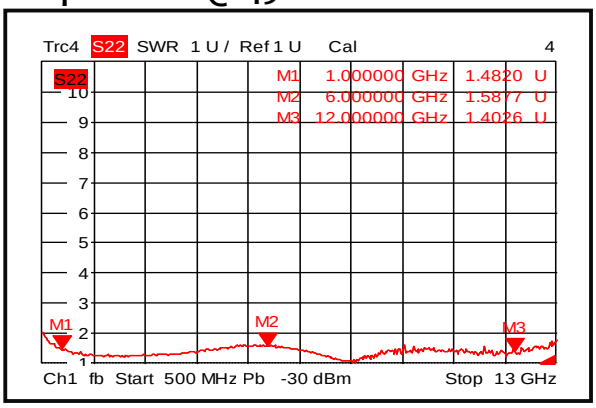
Gain @-45℃



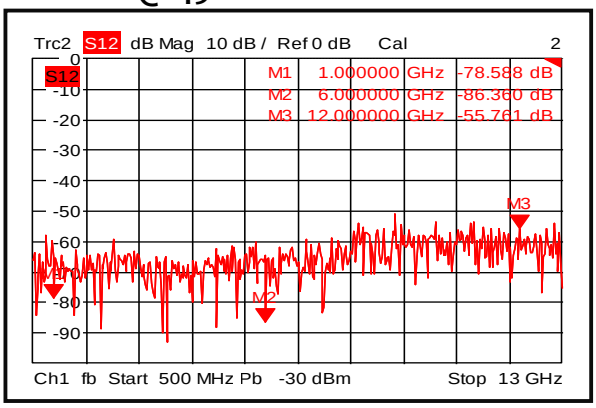
Input VSWR @-45℃



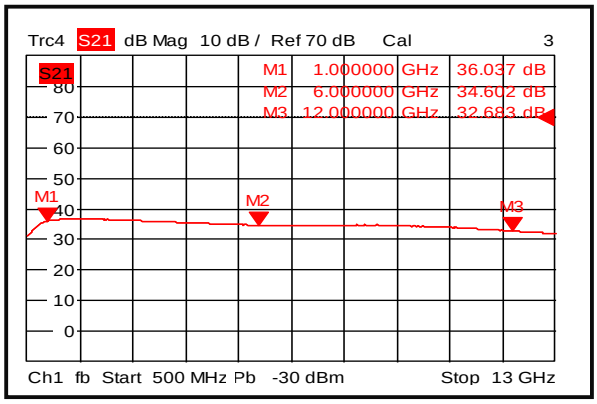
Output VSWR @-45℃



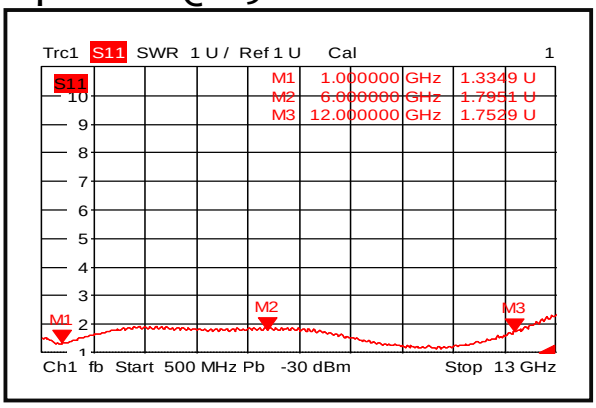
Isolation @-45℃



Gain @+85℃



Input VSWR @+85℃



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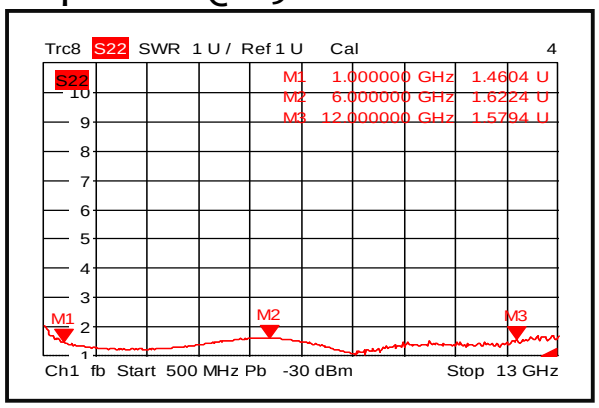
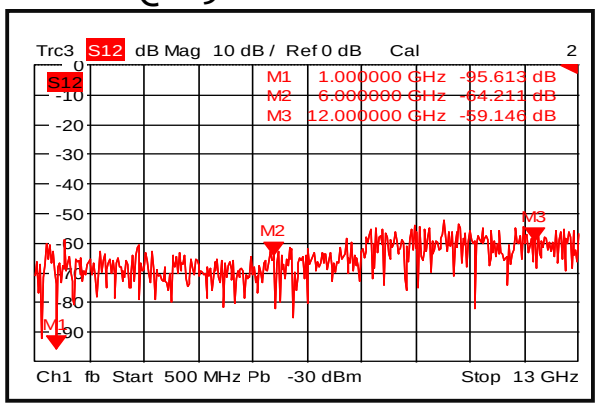
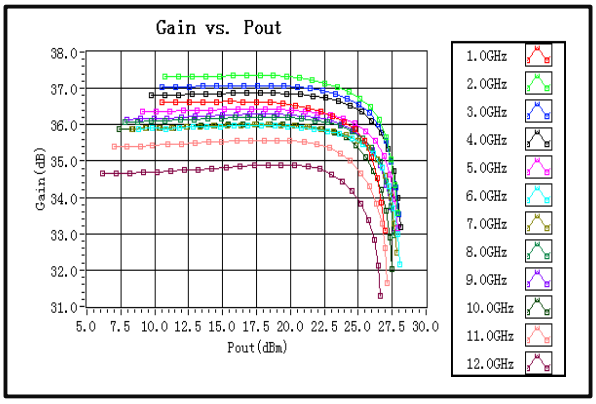
Output VSWR @+85℃



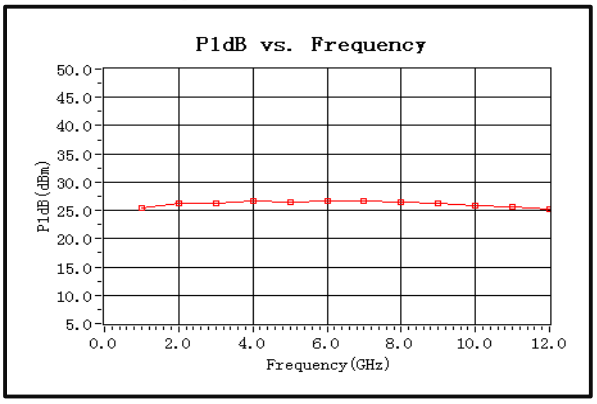
Isolation @+85℃



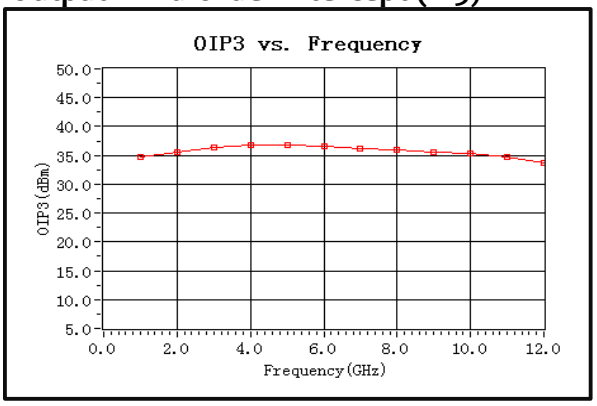
Gain vs. Output Power



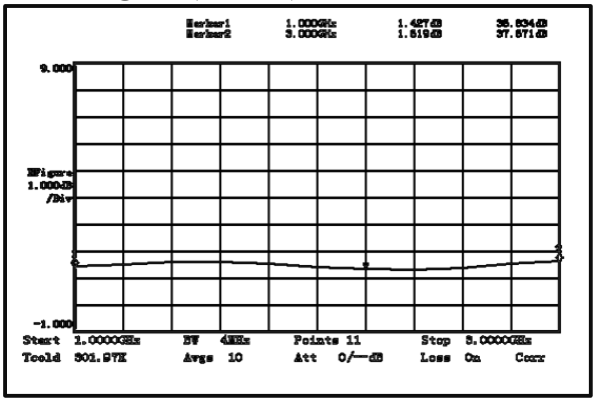
P1dB vs. Frequency



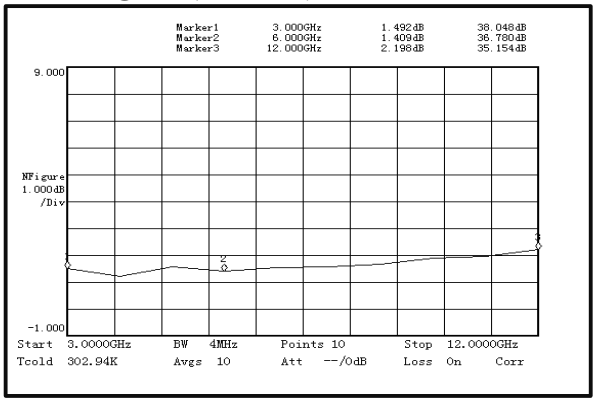
Output Third Order Intercept (IP3)



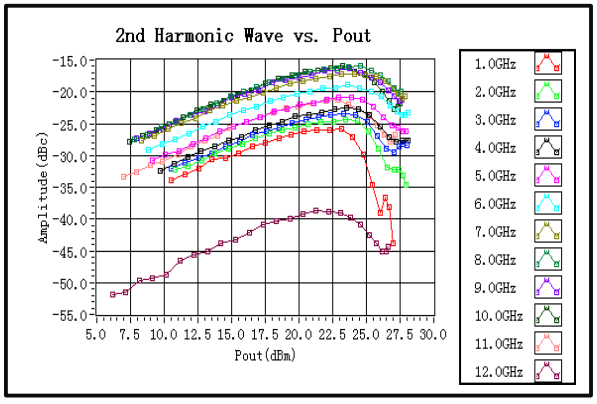
Noise Figure (1-3GHz)



Noise Figure (3-12GHz)



2nd Harmonic Wave Output Power



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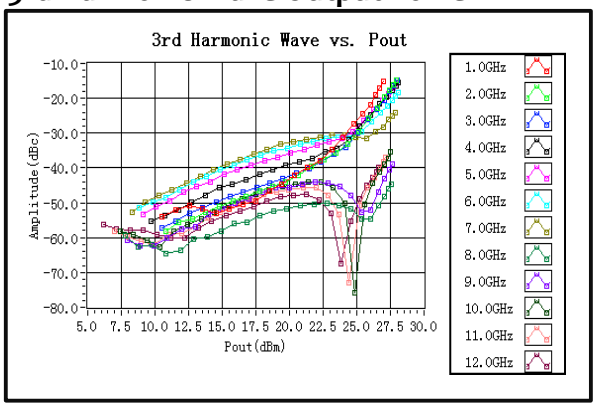
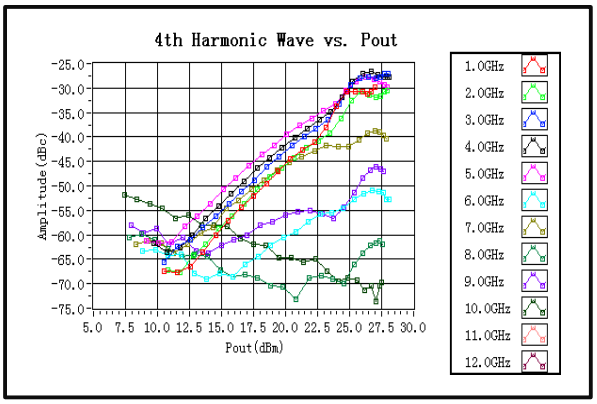
3rd Harmonic Wave Output Power

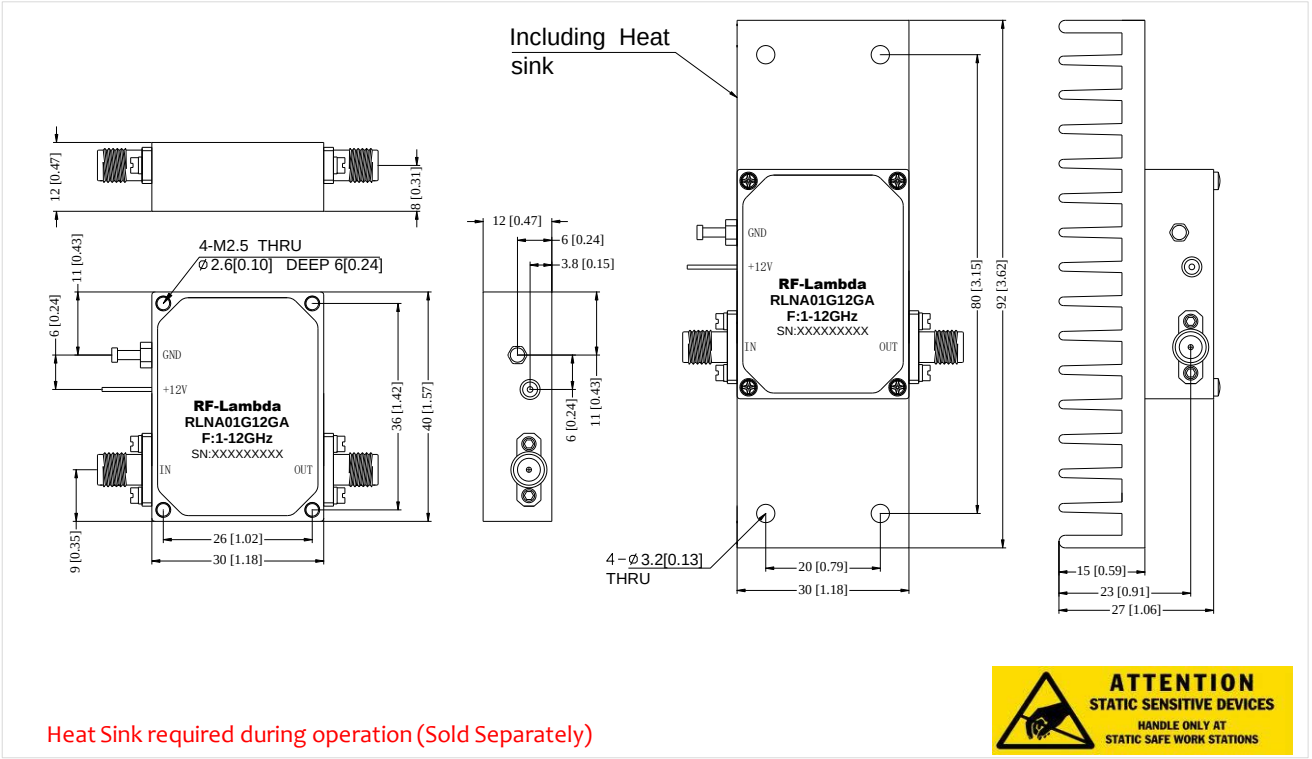


4th Harmonic Wave Output Power



Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No	ECCN	Description
RLNA01G12GA	EAR99	1-12GHz Low Noise Amplifier

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