Ultra Wide Band Low Noise Amplifier
0.05GHz ~ 20GHz

Note: The photo is for illustration purposes only.
Please refer to the outline drawing

RoHS Compliant

Features

- Gain: 28dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +23dBm Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, T_A=25 ℃, Vcc = +12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.05		0.2	0.2		10	10		20	GHz
Gain	27	30		27	29		25	27		dB
Gain Flatness		±1.0			±1.0	±1.5		±1.5	±2.0	dB
Gain Variation Over Temperature (-45 ~ +85)		±0.5			±1.0			±2.0		dB
Noise Figure		4.0			2.0	4.0		2.5	4.0	dB
Input VSWR		3			1.8	2		1.8	2	: 1
Output VSWR		1.5			1.5	1.8		1.5	1.8	: 1
Output 1dB Compression Point (P1dB)		22		22	23		20	22		dBm
Saturated Output Power (Psat)		24			25			23		dBm
Output Third Order Intercept (OIP3)		30			32			30		dBm
Supply Current (Vcc=+12V)		210	260		210	260		210	260	mA
Isolation S12		-60			-65			-60		dB
Weight	1.41									Ounces
Impedance	50									Ohms
Input / Output Connectors	SMA - Female									
Finish	Gold Plated									
Material	Aluminum									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	+4dB m

Biasing Up Procedure

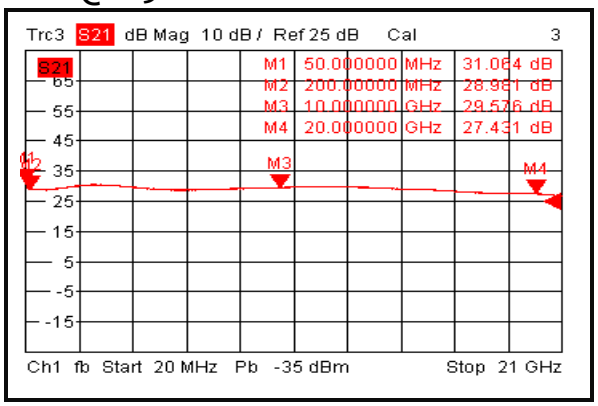
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

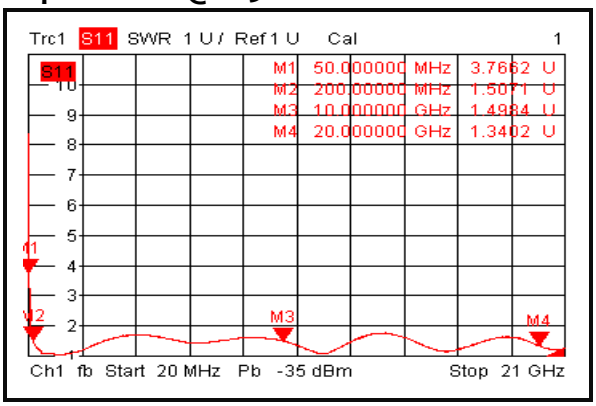
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours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

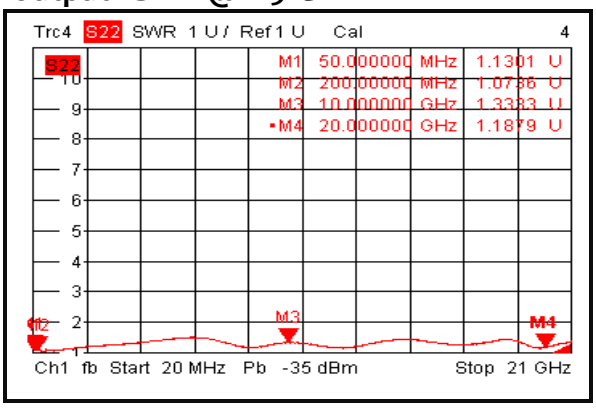
Gain @+25℃



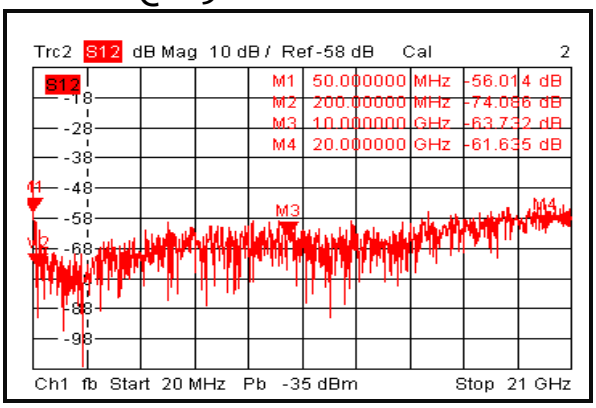
Input VSWR @+25℃



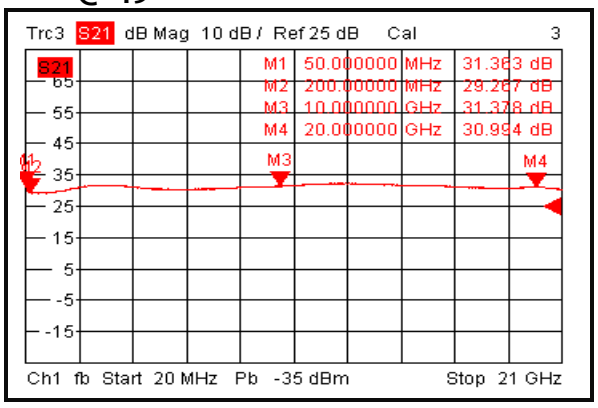
Output VSWR @+25℃



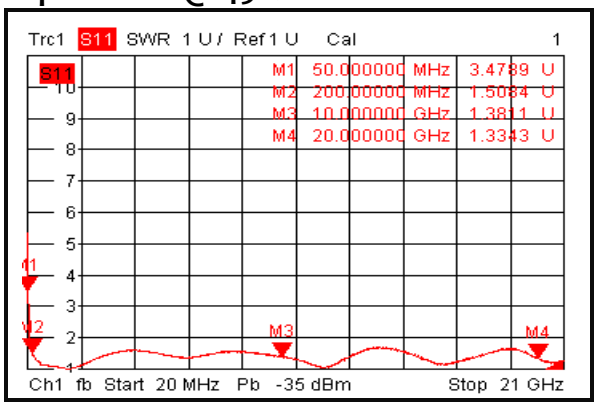
Isolation @+25℃



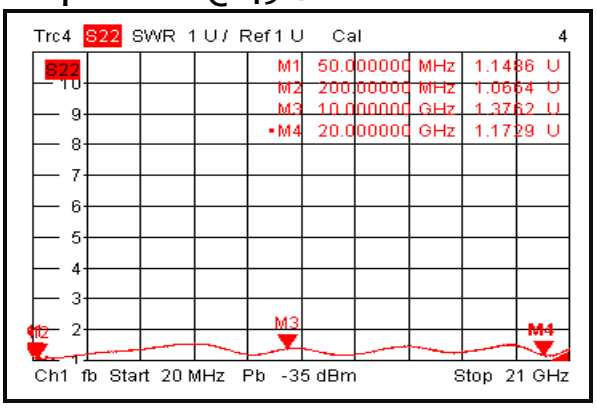
Gain @-45℃



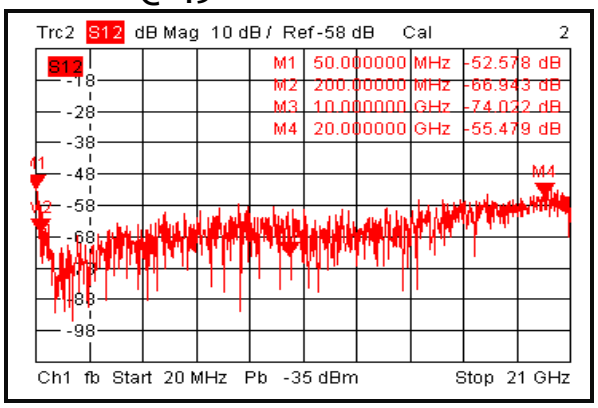
Input VSWR @-45℃



Output VSWR @-45℃



Isolation @-45℃



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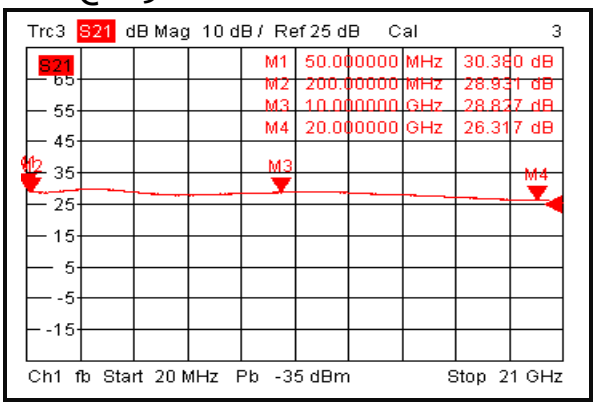
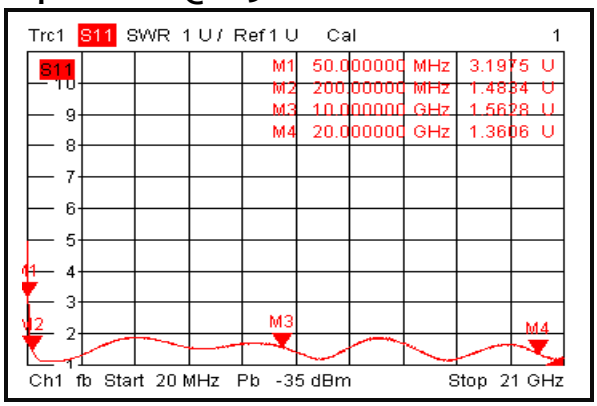
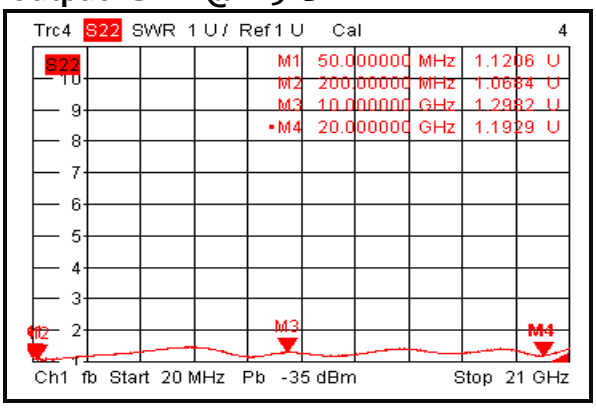
Gain @+85℃



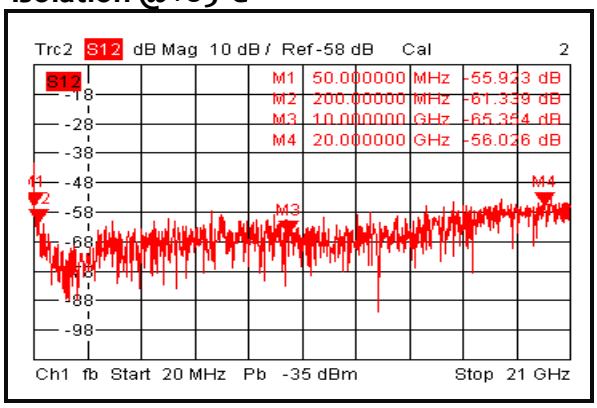
Input VSWR @+85℃



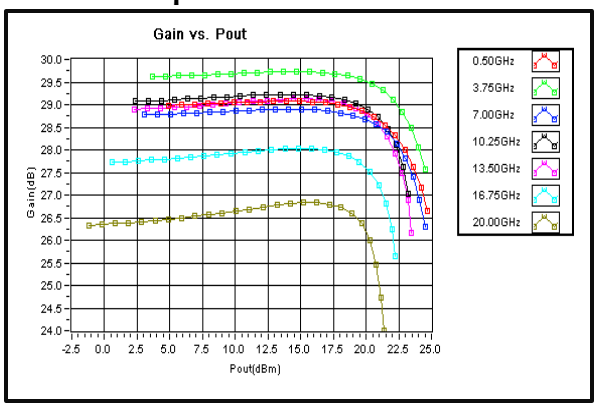
Output VSWR @+85℃



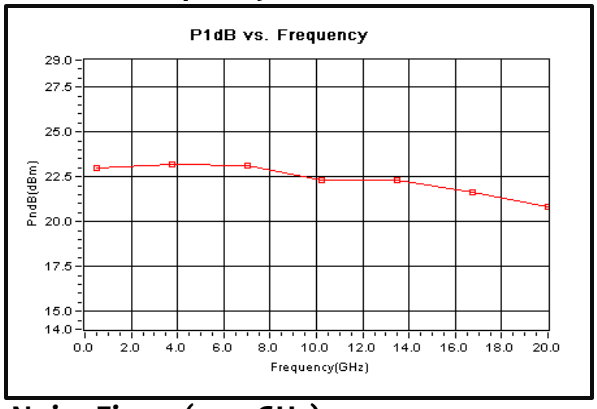
Isolation @+85℃



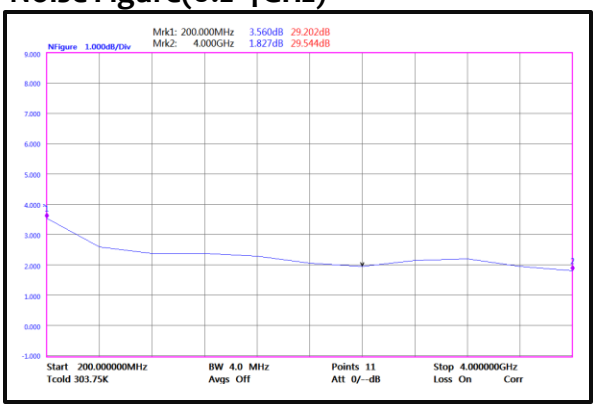
Gain vs. Output Power



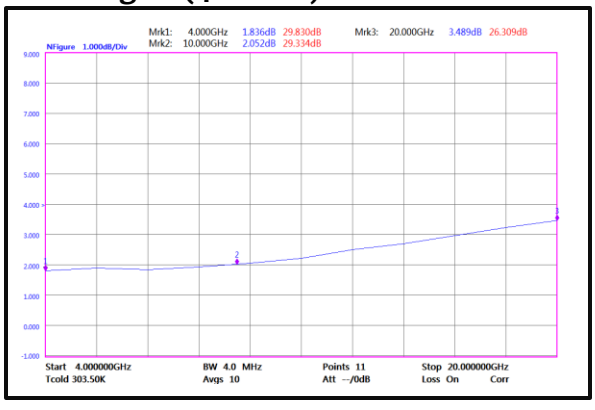
P1dB vs. Frequency



Noise Figure(0.2-4GHz)



Noise Figure(4-20GHz)



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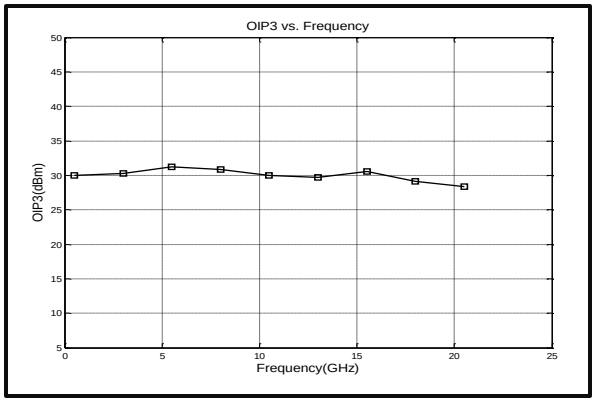
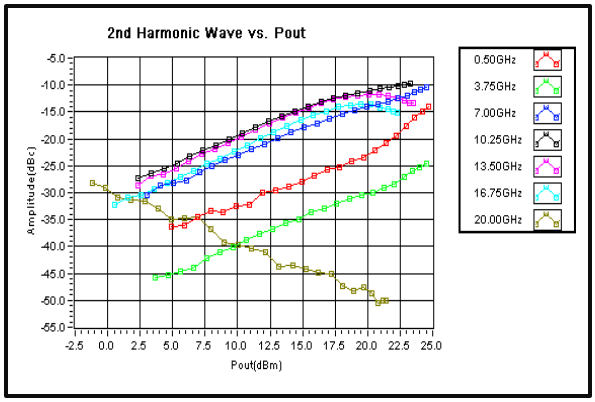
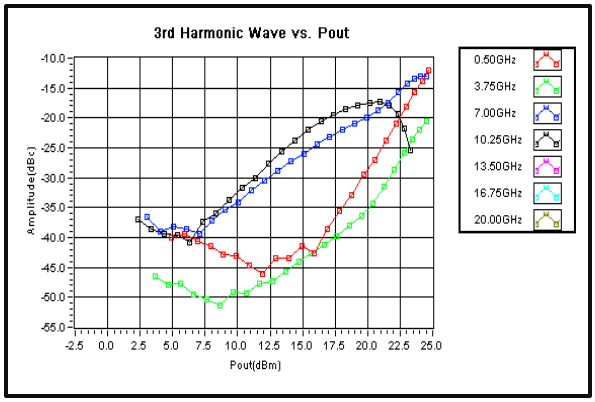
Output Third Order Intercept (OIP3)



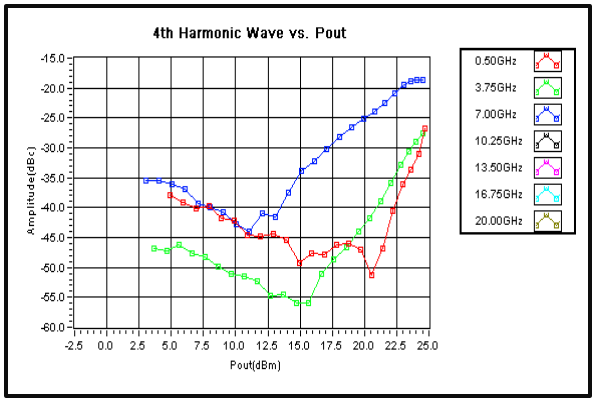
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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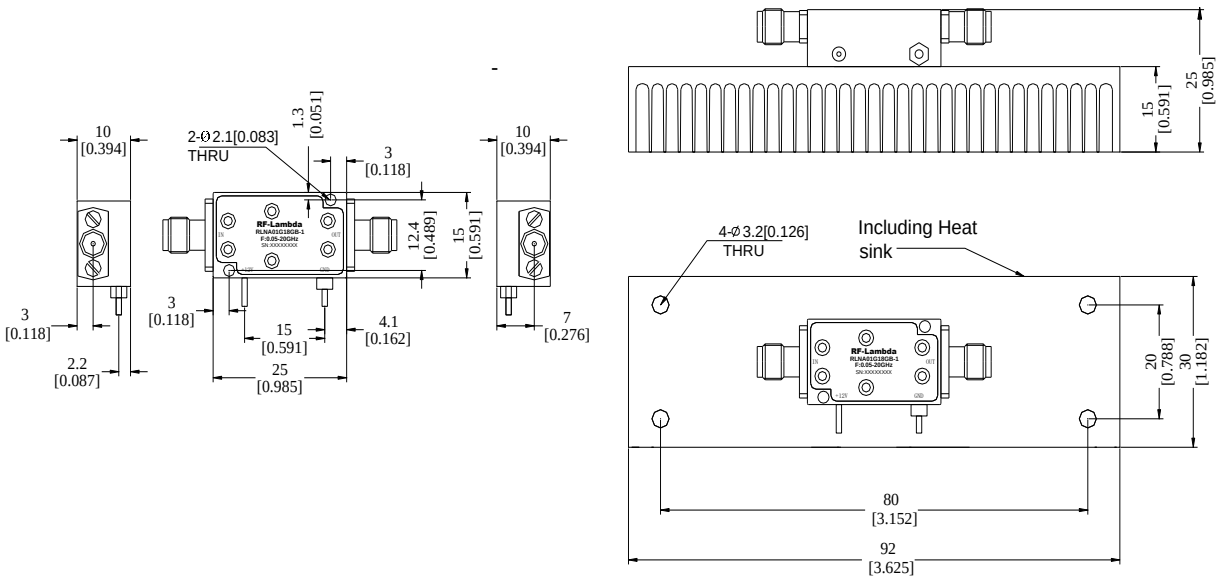
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA01G18GB-1	EAR99	0.05-20GHz LNA Amplifier

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