



Low Noise Amplifier 21.7GHz~24.5GHz



Feature

- Gain: 32dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +12V @ 160mA
- 50 Ohm Matched Input / Output
- Size: 1.18" x 1.57" x 0.39"

Typical Applications

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

Electrical Specifications, TA = +25 ° C, With Vcc = +12V, 50 Ohm System

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	21.7		23	23		24.5	GHz
Gain	30	33		30	33		dB
Gain Flatness		±0.5			±0.5		dB
Gain Variation Over Temperature(-45 ~ +85)		±0.5			±0.5		dB
Noise Figure		2.0	2.5		2.0	2.5	dB
Input Return Loss		15			16		dB
Output Return Loss		16			15		dB
Output Power for 1 dB Compression (P1dB)	19	21.5		19	21		dBm
Saturated Output Power (Psat)		22			22		dBm
Output Third Order Intercept (IP3)		30			29		dBm
Supply Current (Idd) (Vcc=12V)		160	200		160	200	mA
Isolation S12	50	55		42	45		dB
Input Max Power(no damage)			-2			-2	dBm
Weight	80						g
Impedance	50						Ohms
Input /Output Connector	SMA-Female						
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum/copper						
Package Sealing	Epoxy Sealing (Standard)						
	Hermetically Seal (Option with extra charge)						

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RF-LAMBDA

The power beyond expectations

RLNA21G24G

Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power (RFIN)(Vcc= +12V)	-2dB m
Storage Temperature	-55 to +125 °C
Operating Temperature	-45 to +85 °C

Biasing Up Procedure

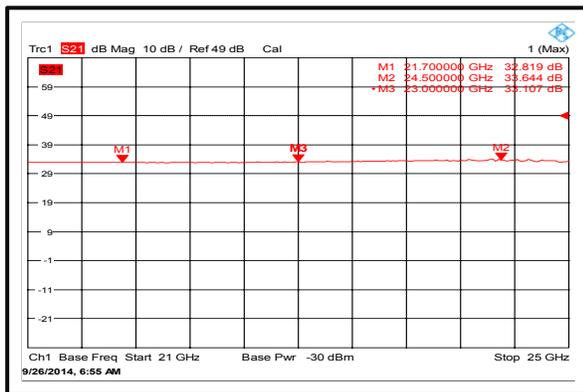
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environment specifications

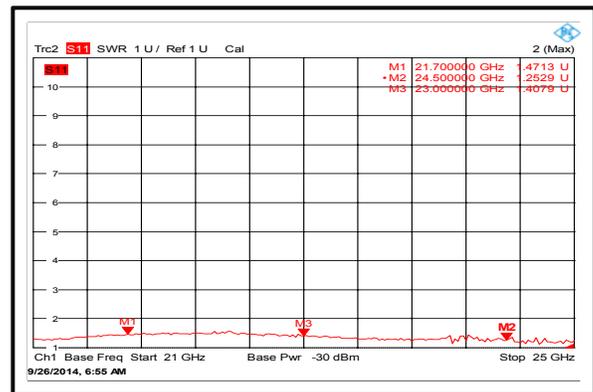
Operational Temperature (C°)	-45 to +85 °C
Storage Temperature (C°)	-55 to +125 °C
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc half sin wave, 3 axis both directions

performance plots

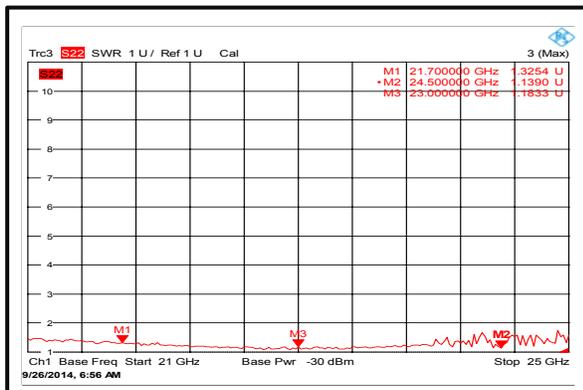
Gain



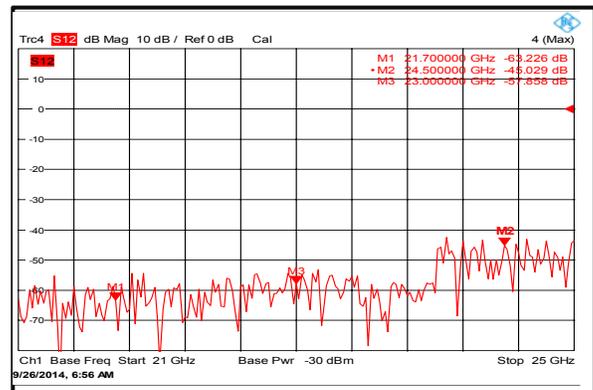
Input VSWR



Output VSWR



Isolation



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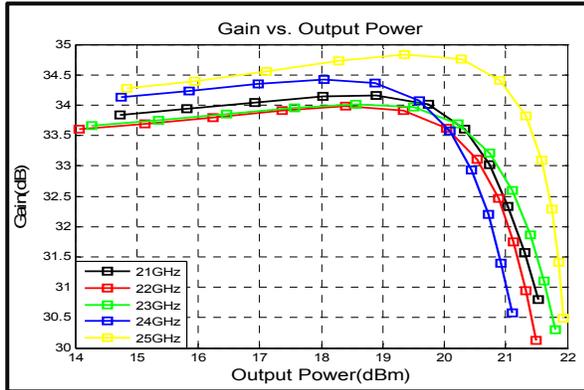


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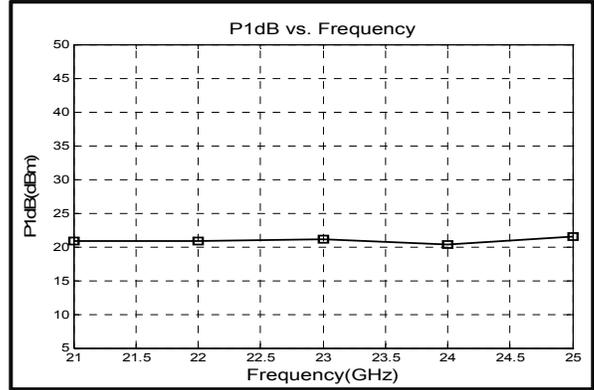
The power beyond expectations

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Gain vs. output power



P1dB vs. Frequency



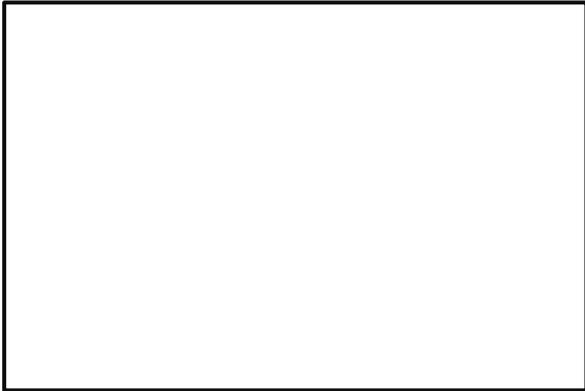
Output Third Order Intercept (IP3)



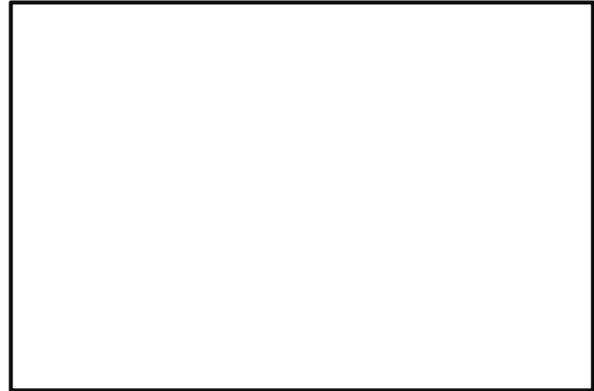
Noise Figure



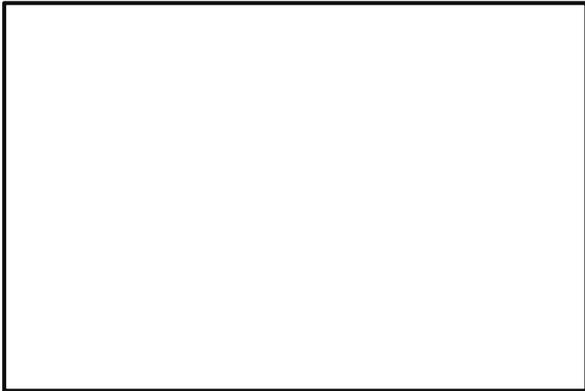
2nd Harmonic Wave output Power



3th Harmonic Wave output Power



4nd Harmonic Wave output Power



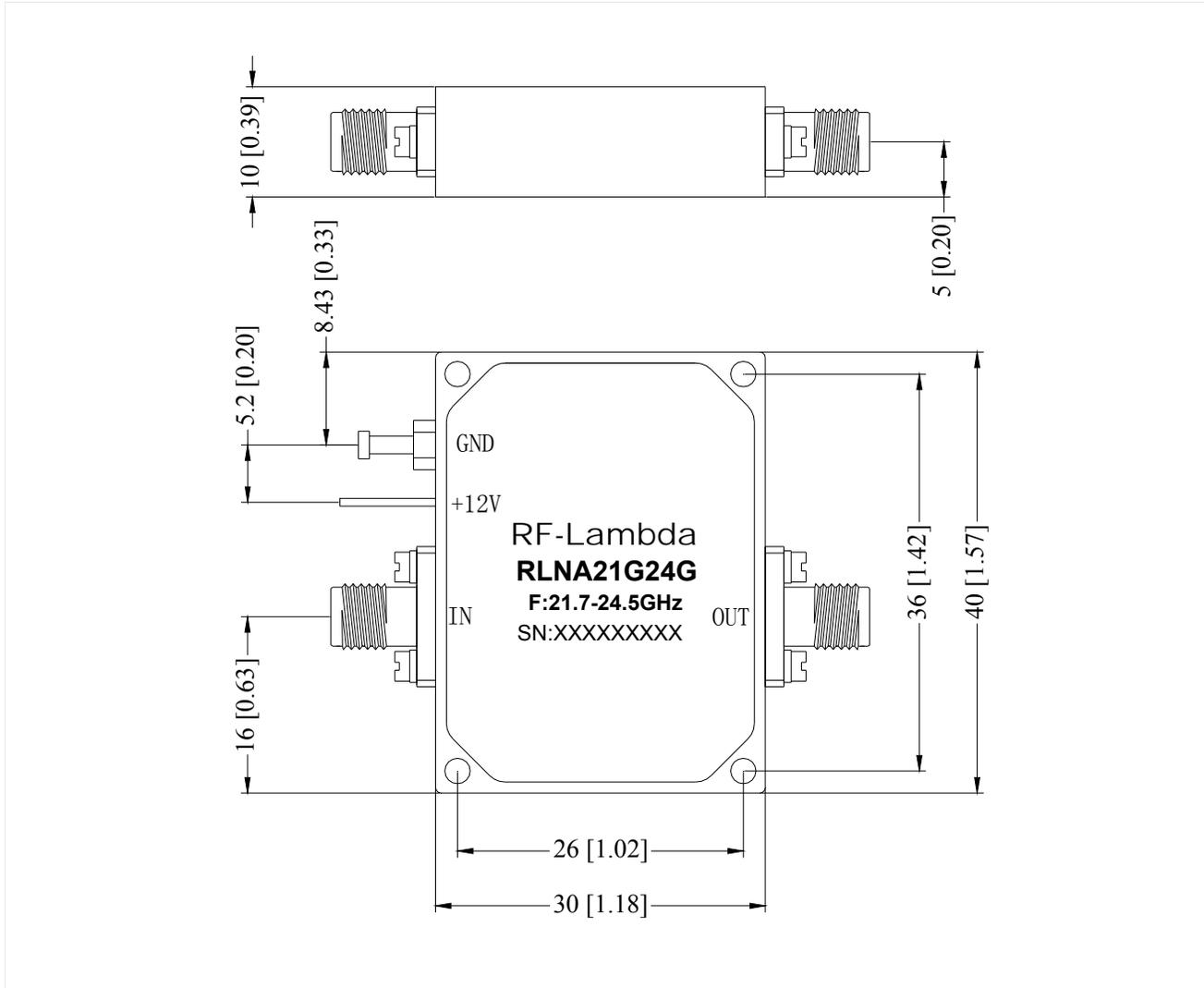
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Outline Drawing:

All Dimensions in mm (inches)

Heat Sink required during operation



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Ordering Information

Part No	ECCN	Description
RLNA21G24G	EAR99	21.7-24.5GHz LNA Amplifier



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