Low Noise Amplifier
21.7GHz~24.5GHz

RoHS Compliant

Features

- Gain: 34dB Typical
- Noise Figure: 2.0dB Typical
- Output P1dB: +21dBm 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	21.7		23	23		24.5	GHz
Gain	32	34		32	34		dB
Gain Flatness		±0.5			±0.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure		2.1	2.5		2.2	2.5	dB
Input VSWR		1.2	1.5		1.2	1.5	: 1
Output VSWR		1.5	1.8		1.5	1.8	: 1
Output 1dB Compression Point (P1dB)	19	21.5		19	21		dBm
Saturated Output Power (Psat)		22			22		dBm
Output Third Order Intercept (IP3)		26.5			26.5		dBm
Supply Current (Vcc=12V)		160	200		160	200	mA
Isolation S12		-55			-45		dB
Weight	3.53						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 (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power (RFIN)(Vcc= +12V)	-2dB m

Biasing Up Procedure

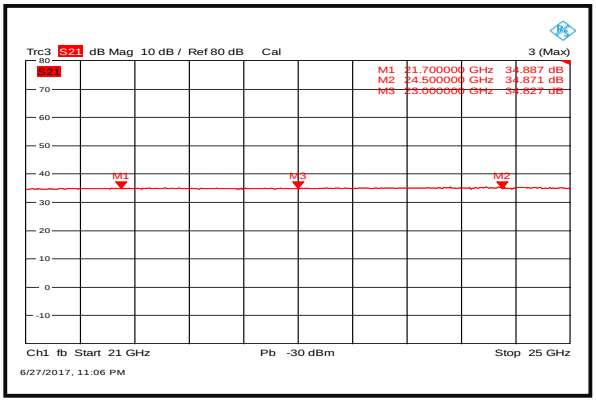
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications

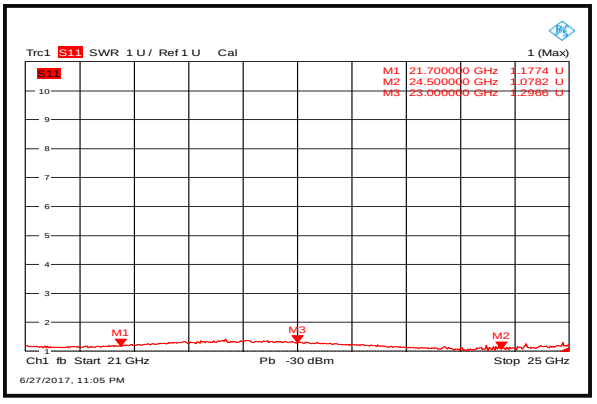
Operational Temperature (°C)	-45 to +85
Storage Temperature (°C)	-55 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c,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

Typical Performance Plots

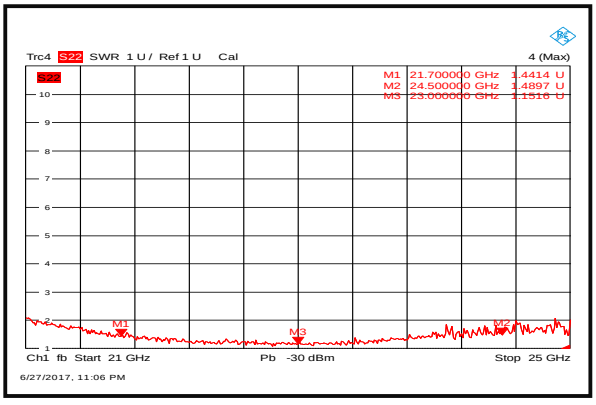
Gain @+25°C



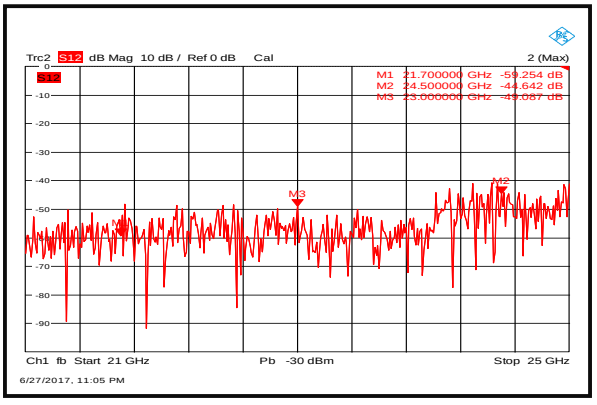
Input VSWR @+25°C



Output VSWR @+25°C



Isolation @+25°C



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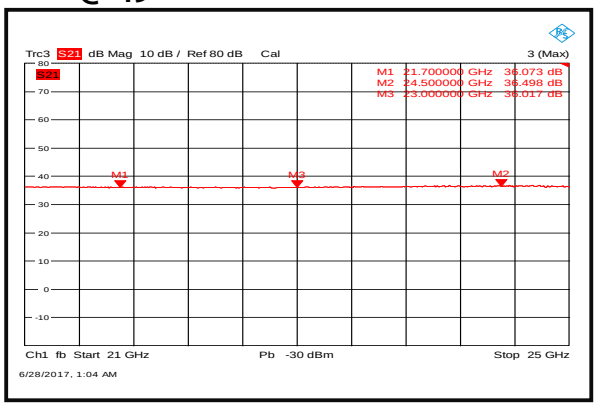
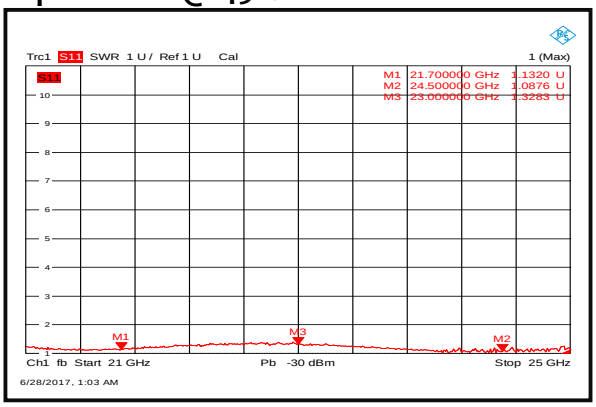
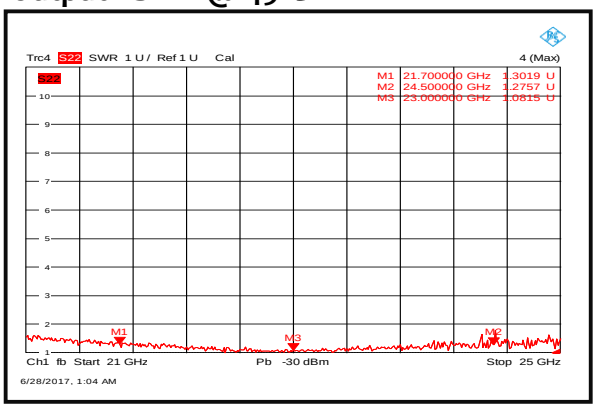
Gain @-45℃



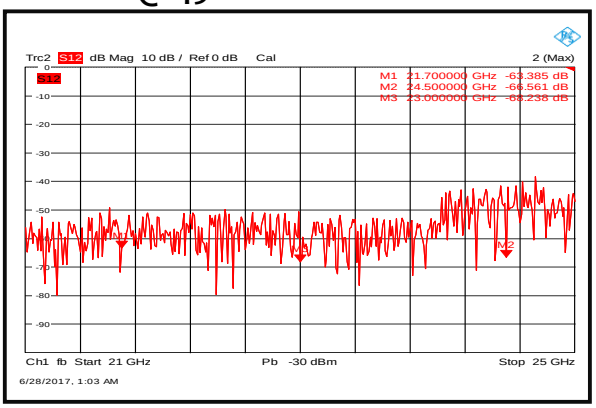
Input VSWR @-45℃



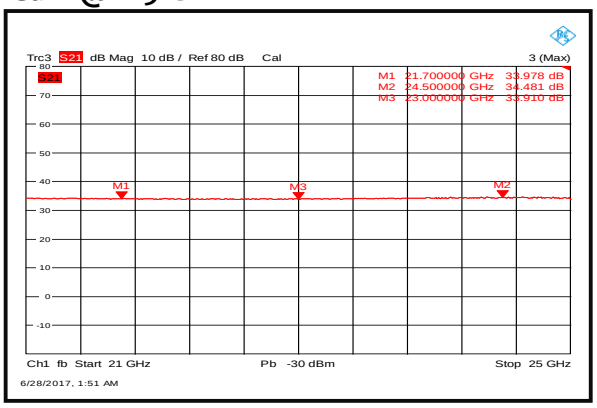
Output VSWR @-45℃



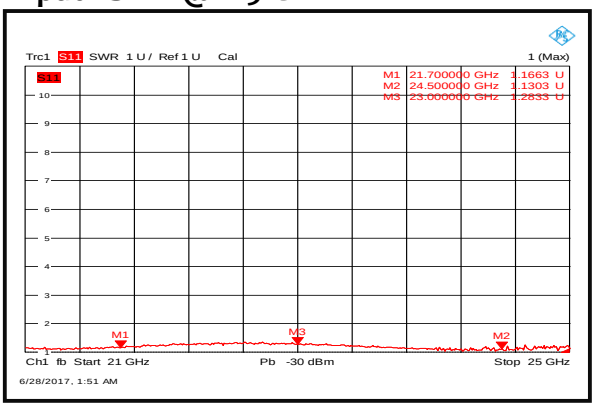
Isolation @-45℃



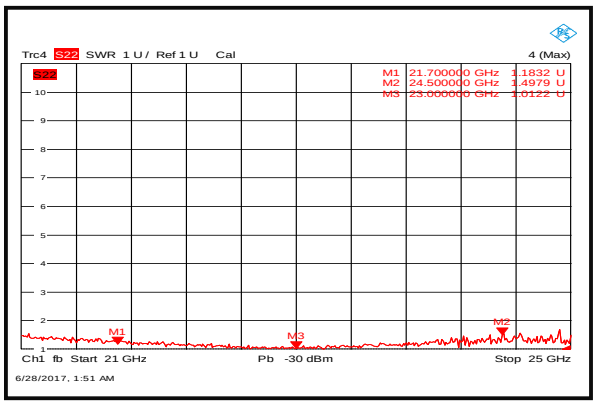
Gain @+85℃



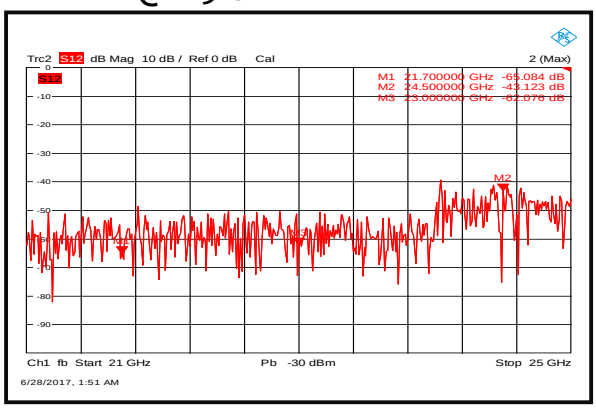
Input VSWR @+85℃



Output VSWR @+85℃



Isolation @+85℃



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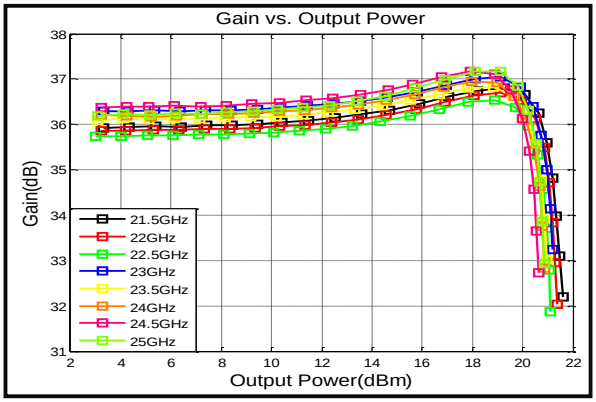
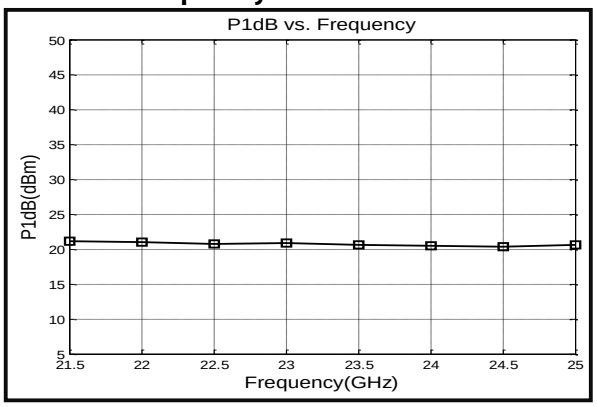
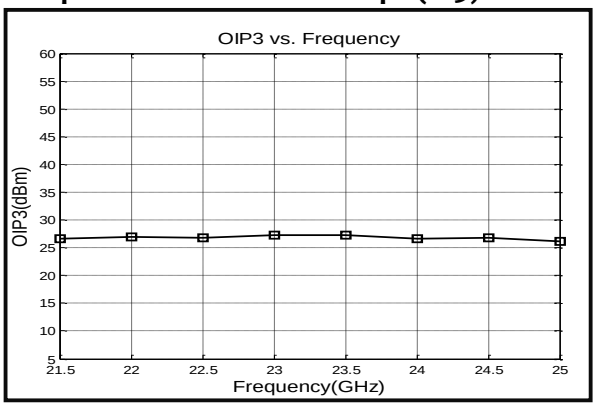
Gain vs. Output Power



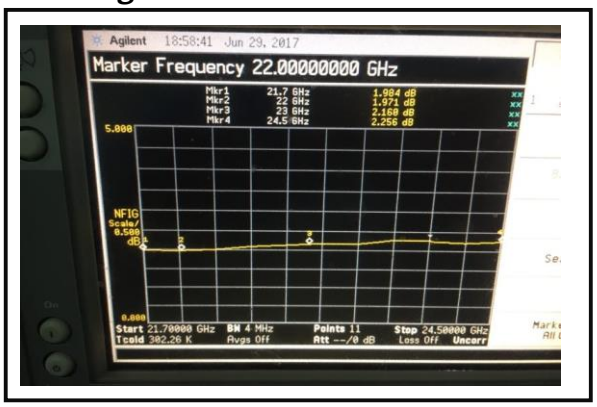
P1dB vs. Frequency



Output Third Order Intercept (IP3)



Noise Figure



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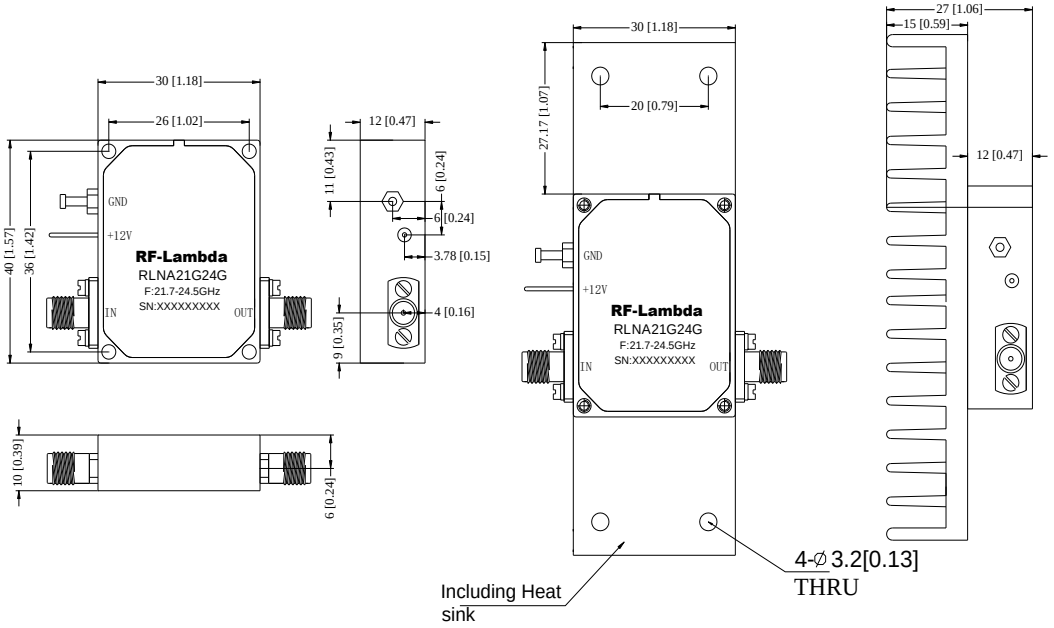
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA21G24G	EAR99	21.7-24.5GHz Low Noise Amplifier

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