

Wide Band Low Noise Amplifier 0.5GHz~4GHz



Features

- Gain: 32dB Typical
- Noise Figure: 0.8dB Typical
- P1dB Output Power: +20dBm Typical
- Supply Voltage: +24V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test & Measurement

Electrical Specifications, TA = +25°C, Vcc=+24V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.5		3	3		4	GHz
Gain	30	32		29	31		dB
Gain Flatness		±1.5			±1.5		dB
Gain Variation Over Temperature (-40°C~+85°C)		±1.0			±1.0		dB
Noise Figure		0.8	1.1		1.0	1.5	dB
Input VSWR		1.8	3.0		1.8	3.0	: 1
Output VSWR		1.5	2.0		1.5	2.0	: 1
Output 1dB Compression Point (P1dB)	18	20		16	18		dBm
Saturated Output Power (Psat)		21			19		dBm
Output Third Order Intercept (OIP3)		28			26		dBm
Supply Current (Vcc=+24V)		160	250		160	250	mA
Isolation S12		-55			-60		dB
Weight	3.5Max.(Including Heat sink)						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Gold or Nickel Plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

Absolute Maximum Ratings

Operating Voltage	+25V
RF Input Power	-10dBm

Biasing Up Procedure

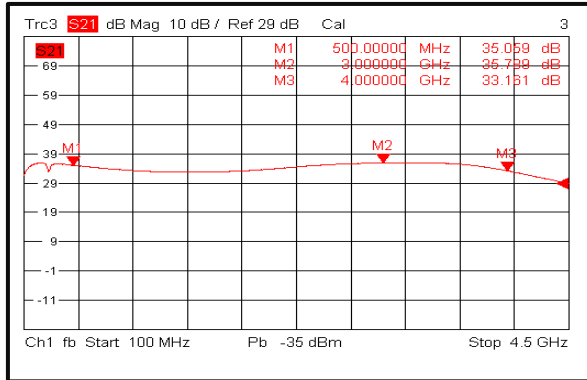
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +24V biasing
Power OFF Procedure	
Step 1	Turn off +24V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

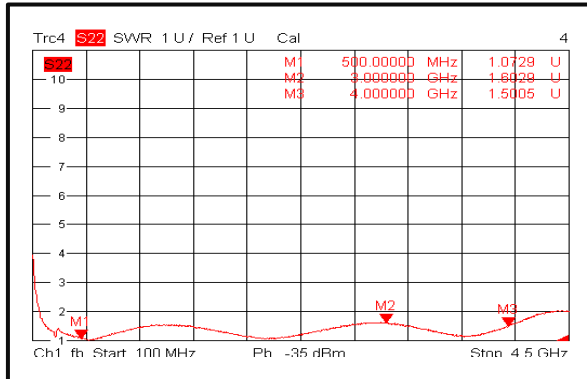
Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-45°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
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 (For Hermetically Sealed Units)

Typical Performance Plots

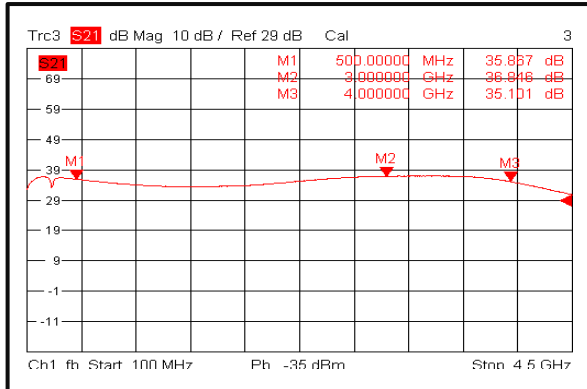
Gain@+25°C



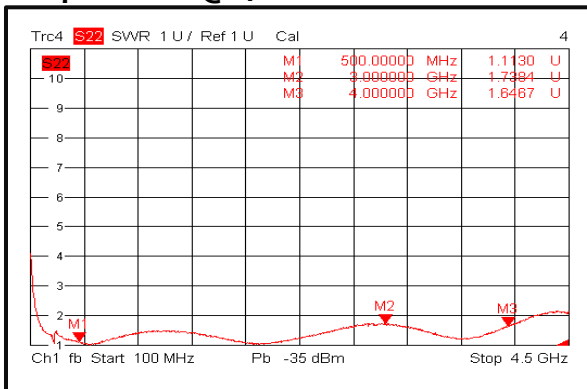
Output VSWR@+25°C



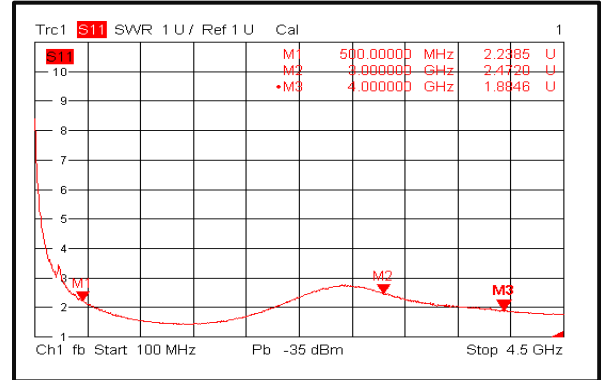
Gain@-40°C



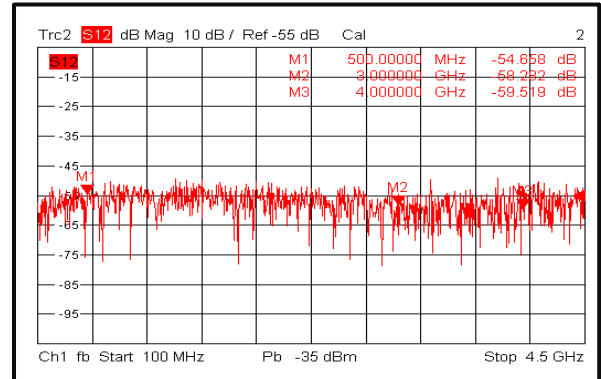
Output VSWR@-40°C



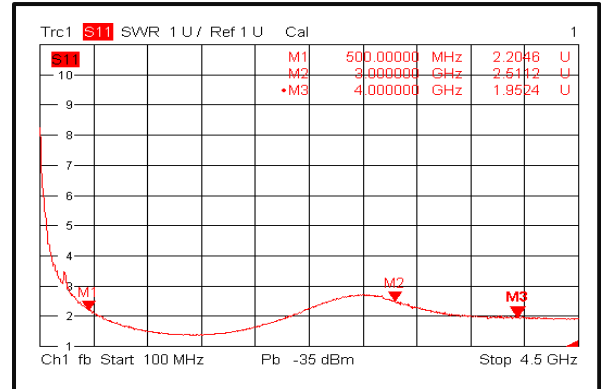
Input VSWR@+25°C



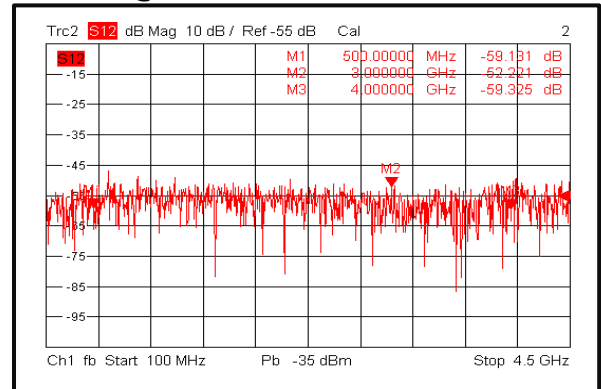
Isolation@+25°C



Input VSWR@-40°C

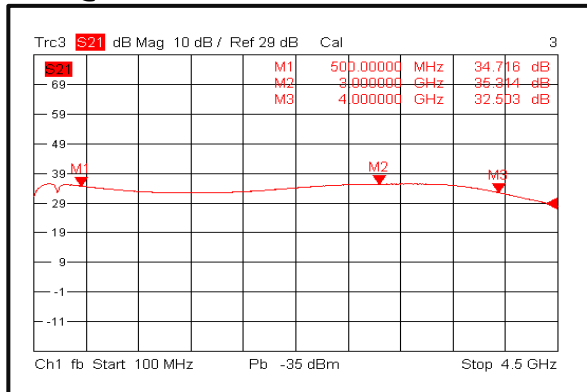


Isolation@-40°C

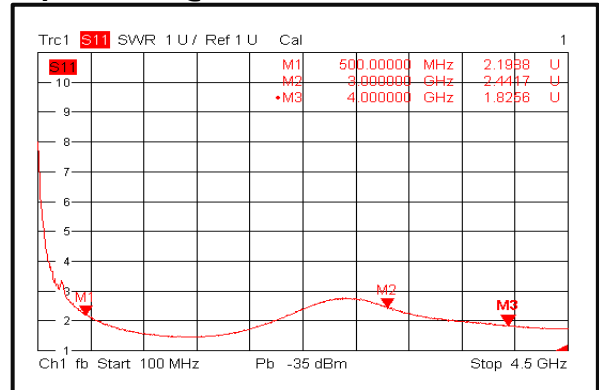


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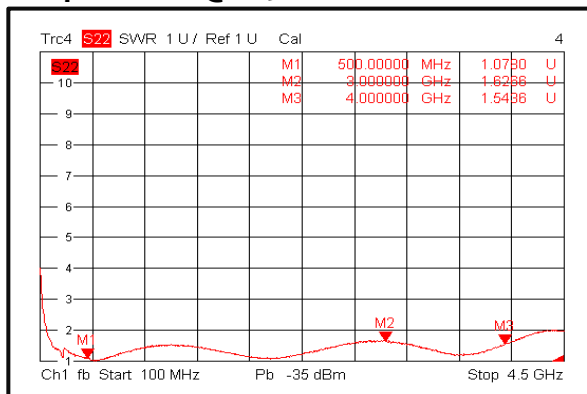
Gain@+85°C



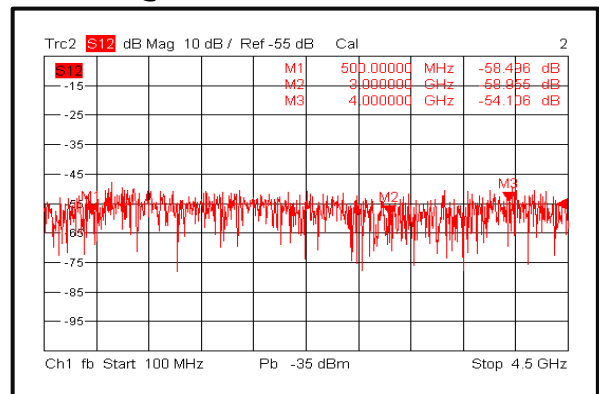
Input VSWR@+85°C



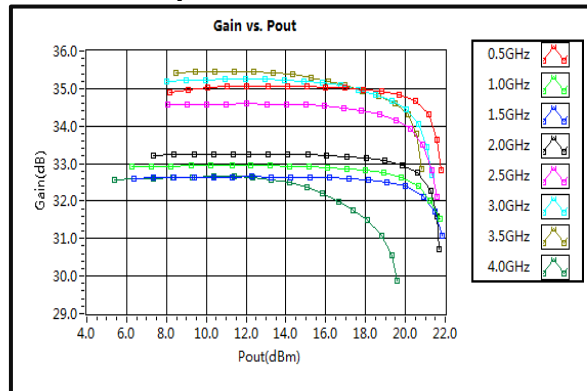
Output VSWR@+85°C



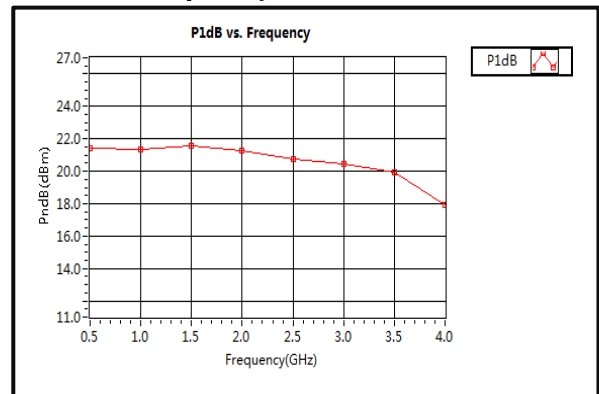
Isolation@+85°C



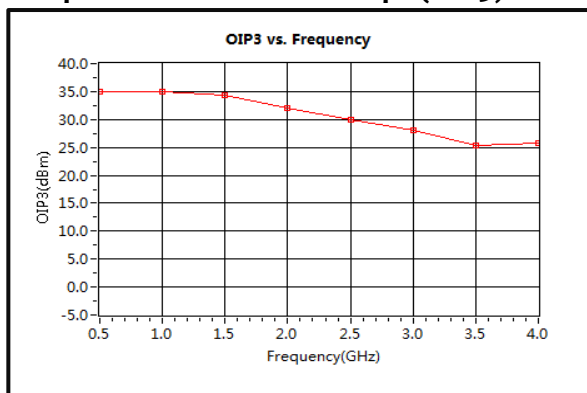
Gain vs. Output Power



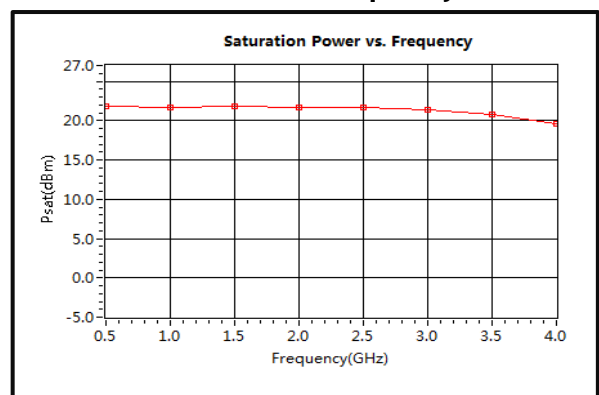
P1dB vs. Frequency



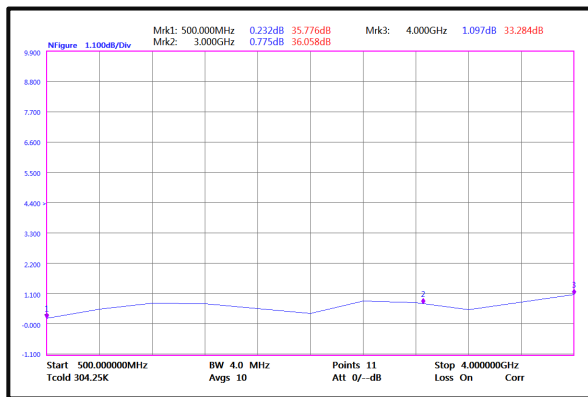
Output Third Order Intercept (OIP3)



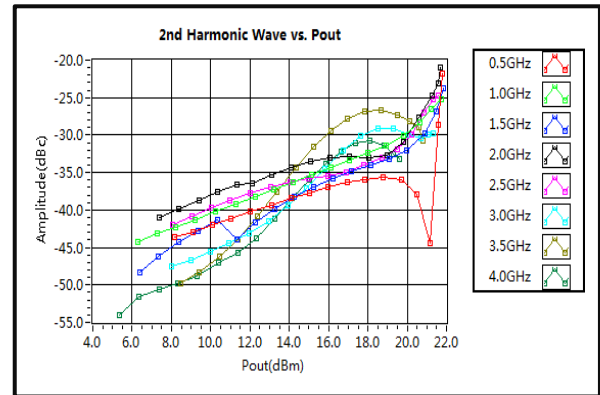
Saturation Power vs. Frequency



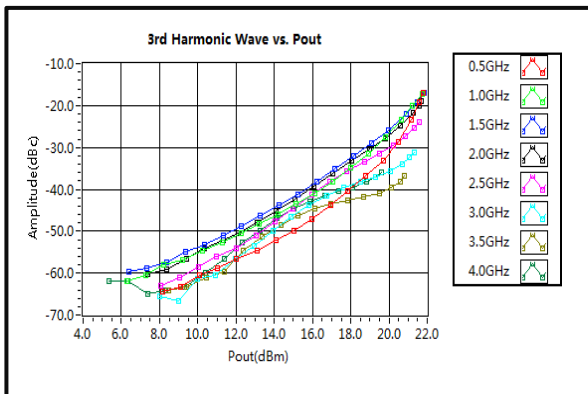
Noise Figure



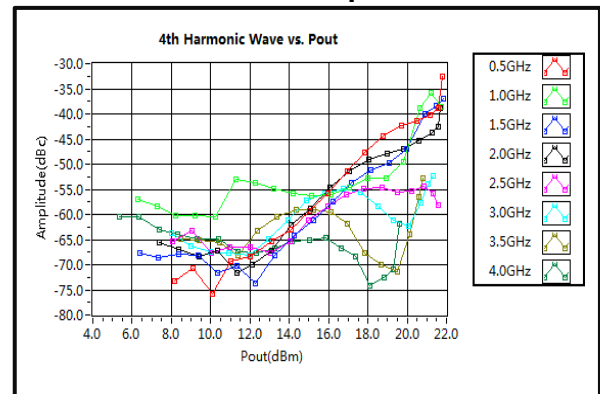
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



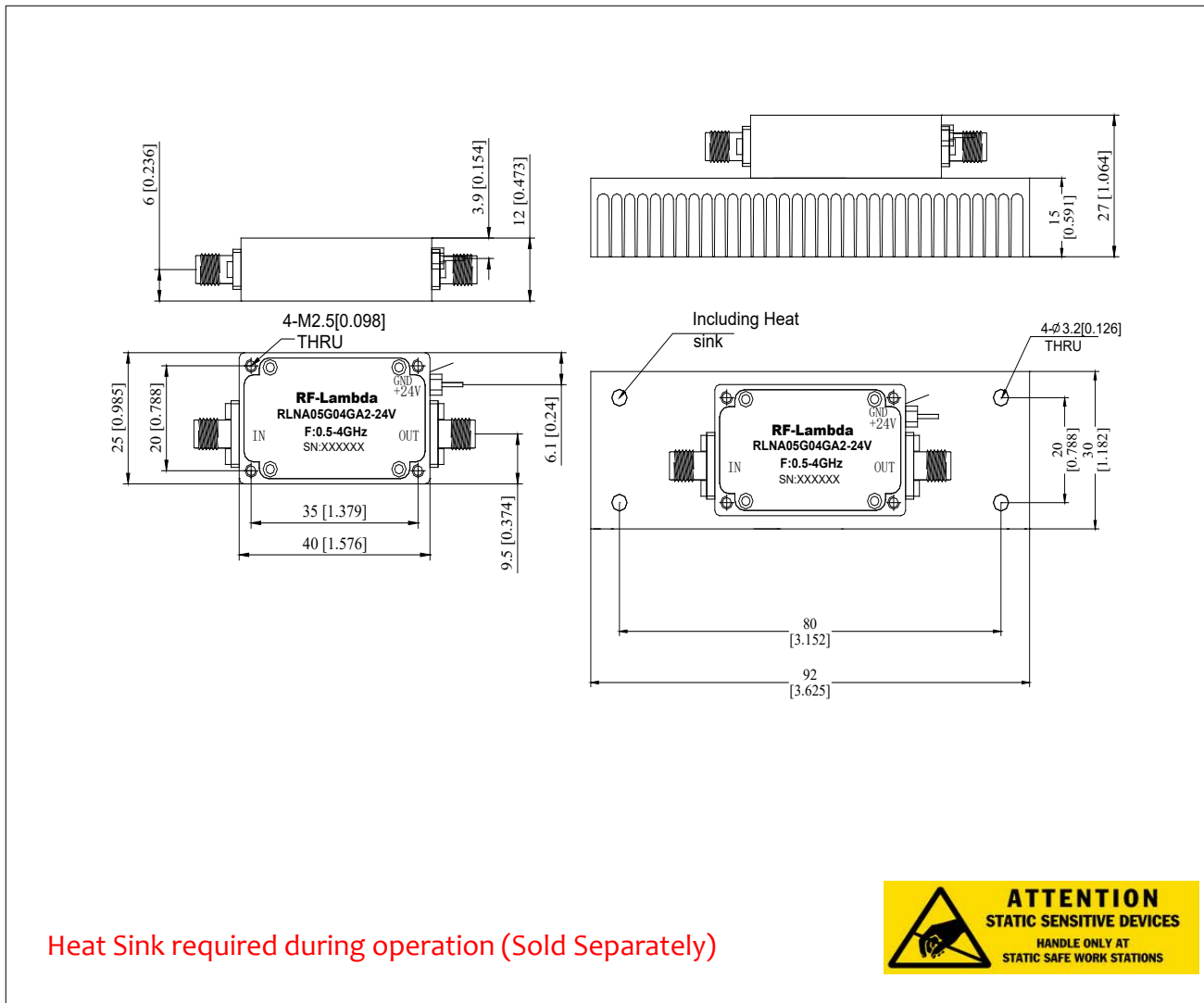
4th Harmonic Wave Output Power



Outline Drawing:

All Dimensions in mm [inches]

Housing Tolerances ± 0.1 [0.004]



Ordering Information

Part No.	Description
RLNA05G04GA2-24V	0.5-4GHz Low Noise Amplifier

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