



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA16G24GA

Wide Band Low Noise Amplifier 16GHz ~ 24GHz



Features

- Gain: 23dB Typical
- Noise Figure: 1.8dB Typical
- P1dB Output Power: +18dBm Typical
- Supply Voltage: +3.5V, -5V

Typical Applications

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

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{CC} = +3.5\text{V}$, $V_{GG} = -5\text{V}$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	16		24	GHz
Gain	20	23		dB
Gain Flatness		± 0.5		dB
Gain Variation Over Temperature (-45 ~ +85)		± 1.0		dB
Noise Figure		1.8	2.3	dB
Input VSWR		2.0		: 1
Output VSWR		1.8		: 1
Output 1dB Compression Point (P1dB)	13	18		dBm
Saturated Output Power (Psat)		20		dBm
Output Third Order Intercept (IP3)		25		dBm
Supply Current ($V_{CC} = +3.5\text{V}$)		100	180	mA
Isolation S12		-55		dB
Weight	0.35			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	Aluminum			
Package Seal	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

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Absolute Maximum Ratings

Operating Voltage	+4.5V
RF Input Power	+20dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
step3	Connect -5V biasing
Step 4	Connect +3.5V biasing
Power OFF Procedure	
Step 1	Turn off +3.5V biasing
step2	Turn off -5V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

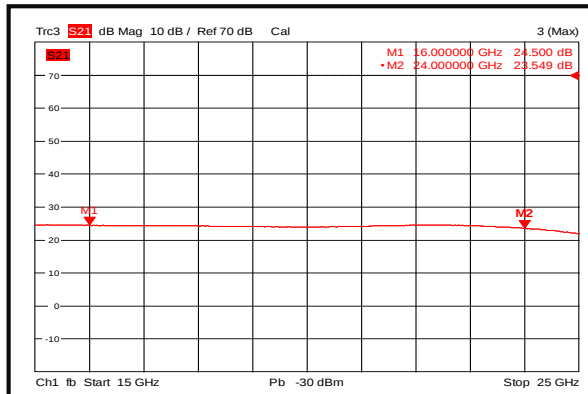
Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883 (For Hermetically Sealed Units)

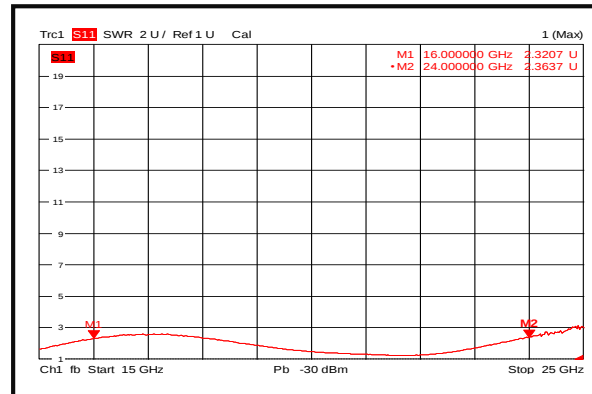


Typical Performance Plots

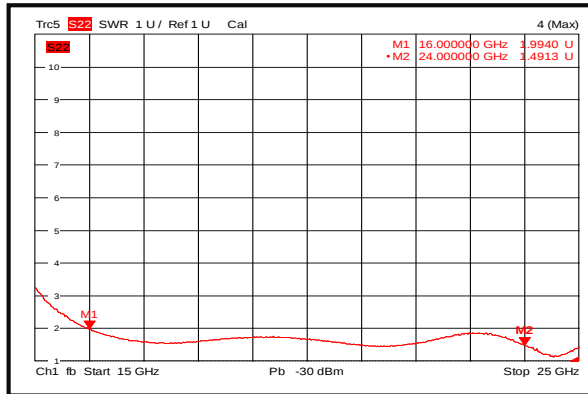
Gain@+25°C



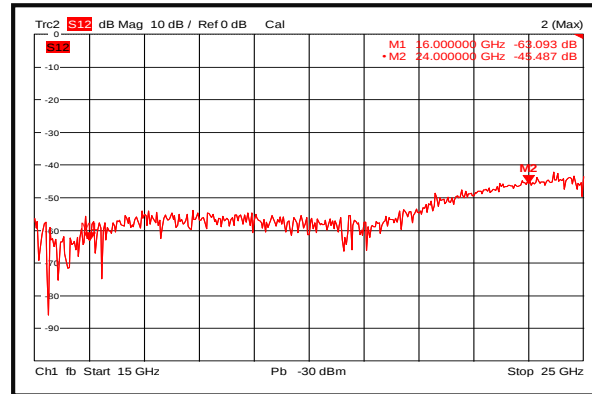
Input VSWR@+25°C



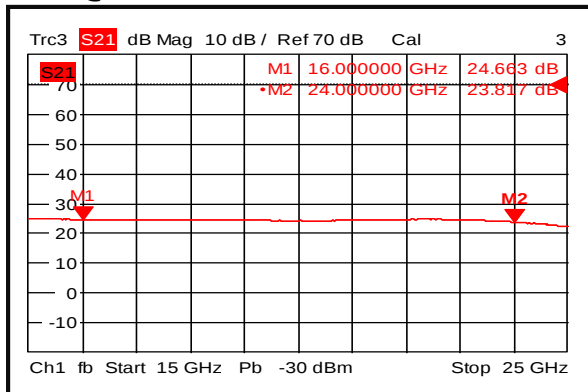
Output VSWR@+25°C



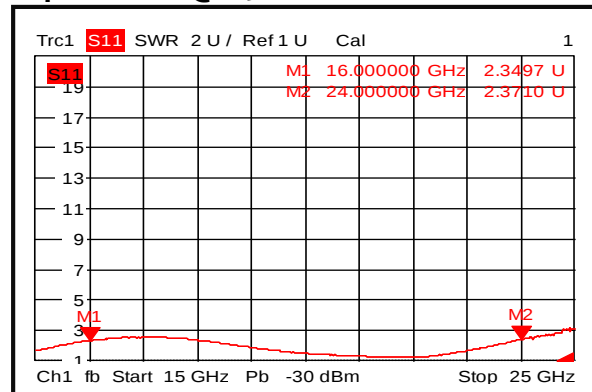
Isolation@+25°C



Gain @-45°C



Input VSWR @-45°C



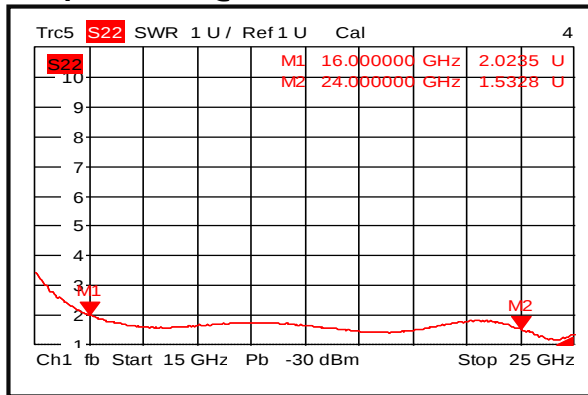


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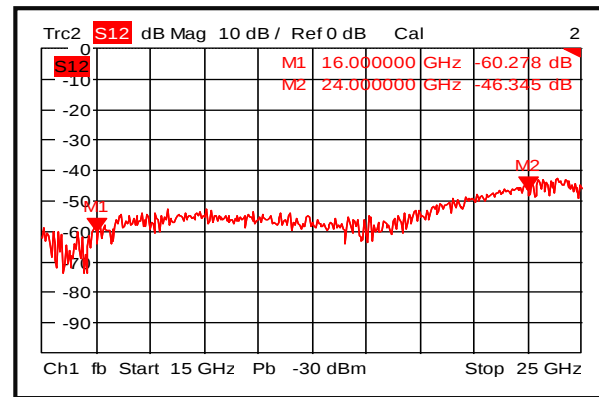
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RLNA16G24GA

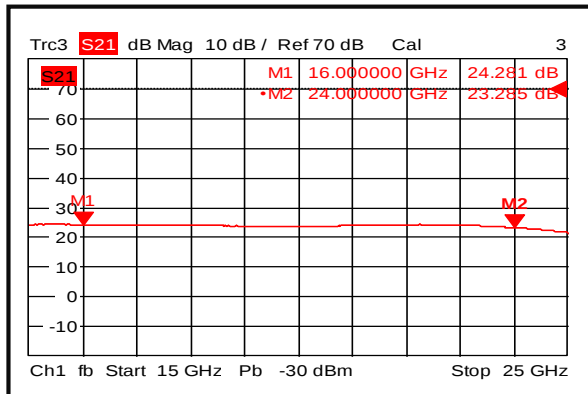
Output VSWR @-45°C



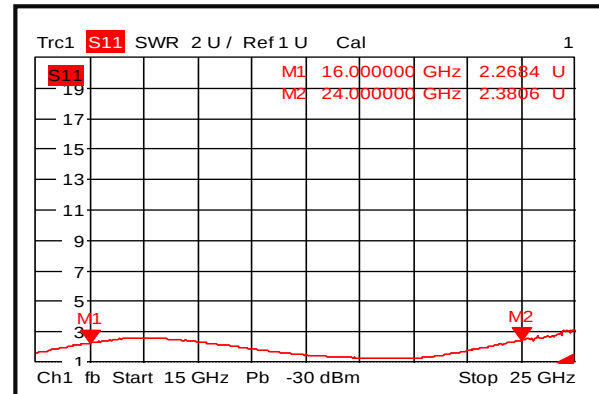
Isolation @-45°C



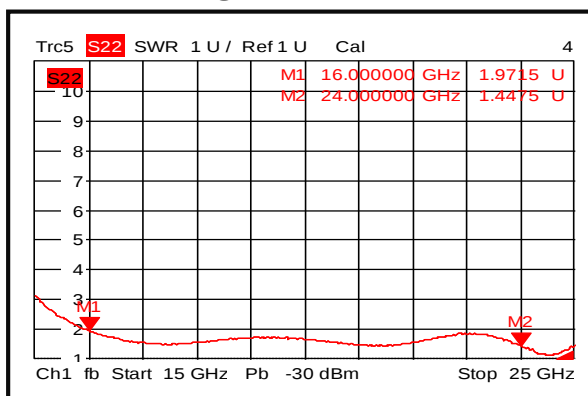
Gain @+85°C



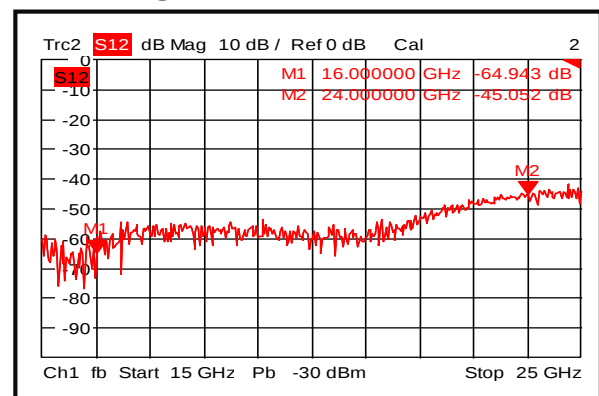
Input VSWR @+85°C



Output VSWR @+85°C



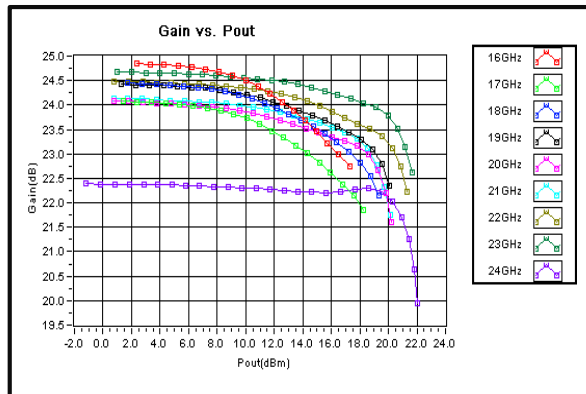
Isolation @+85°C



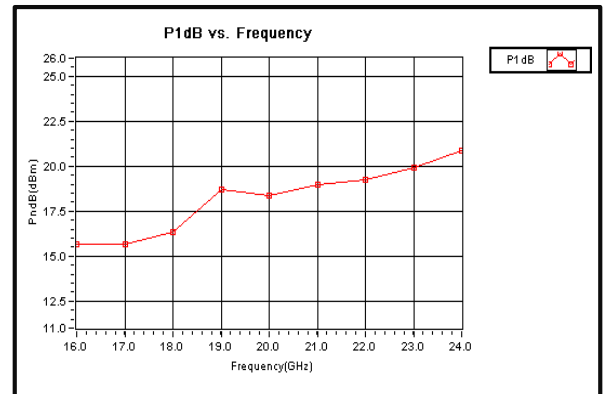
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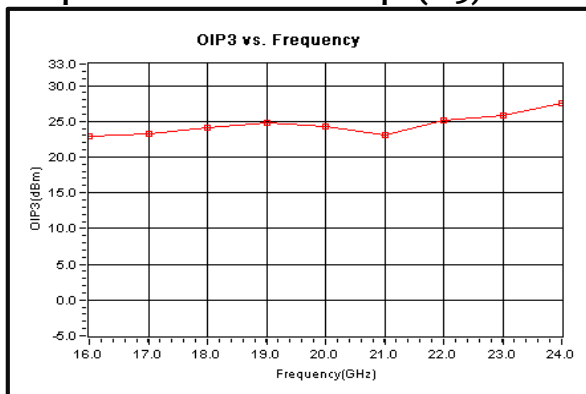
Gain vs. Output Power



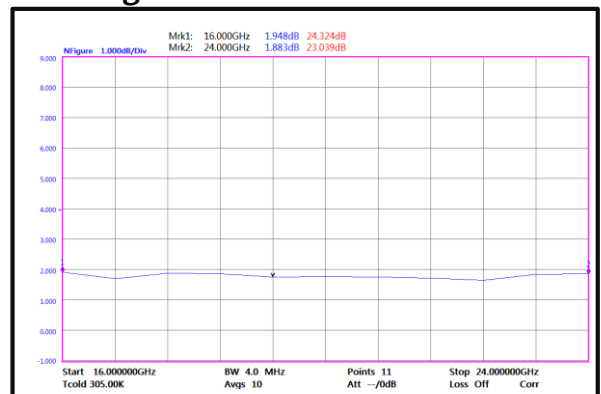
P1dB vs. Frequency



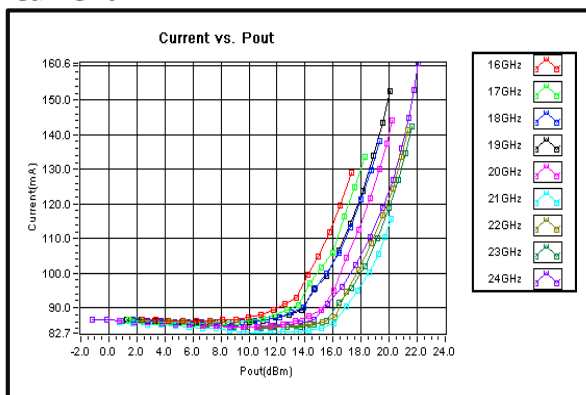
Output Third Order Intercept (IP3)



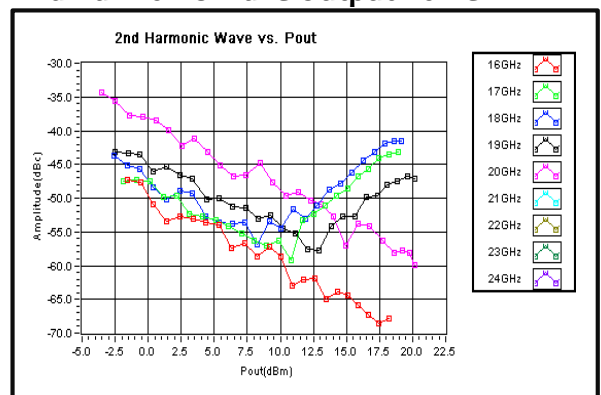
Noise Figure



Current



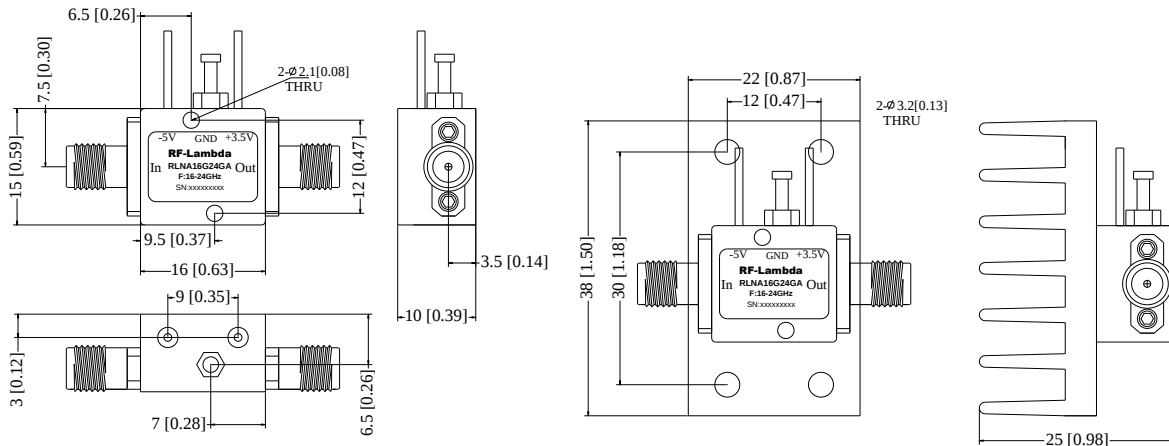
2nd Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA16G24GA	EAR99	16-24GHz Low Noise Amplifier

Important Notice

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