



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA01M01GNDC

Ultra Wide Band Low Noise Amplifier 0.1GHz~1GHz



Features

- Gain: 15dB Typical
- Functional Bandwidth : 100MHz to 4GHz
- Noise Figure: 1.0dB Typical
- P1dB Output Power: +20dBm Typical
- Supply Voltage: +5V

Typical Applications

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

Electrical Specifications, TA = +25°C, Vcc = +12V

Parameter	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.1		1	1		2	2		4	GHz
Gain	13	15	17		13			11		dB
Gain Flatness		±0.6	±1.0		±1.0			±1.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±0.5	±0.75		±0.5			±0.8		dB
Noise Figure		1.5	2.0		2.0			2.5		dB
Input VSWR		1.5	1.8		2.0			1.8		: 1
Output VSWR		1.5	1.8		2.2			1.8		: 1
Output 1dB Compression Point (P1dB)	19	20			19			17		dBm
Saturated Output Power (Psat)		23			21			19		dBm
Output Third Order Intercept (IP3)		31			27			23		dBm
Supply Current (Vcc=+5V)		70	100		70	100		70	100	mA
Isolation S12		-20			-21			-21		dB
Weight	0.71									ounces
Impedance	50									Ohms
Input / Output Connectors	SMA - Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Laser Welded)									

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Absolute Maximum Ratings

Operating Voltage	+5.5V
RF Input Power	33dBm

Biasing Up Procedure

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

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°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	MIL-STD-883	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)

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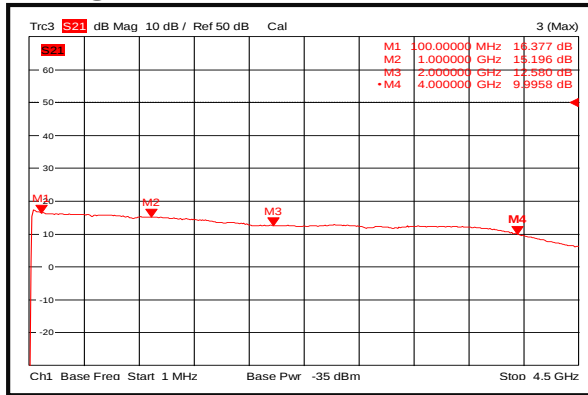
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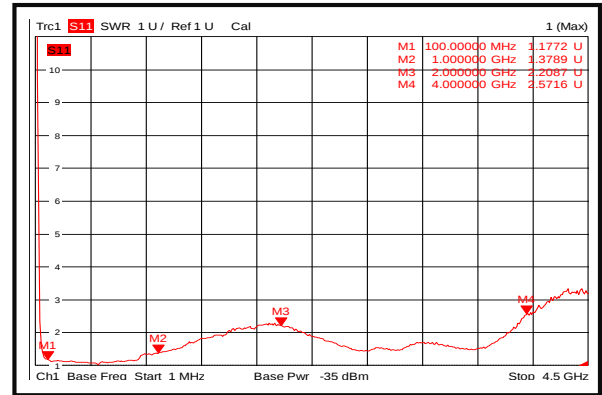
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Typical Performance Plots

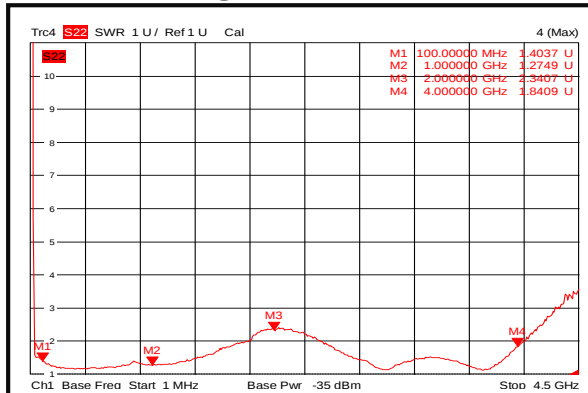
Gain @+25°C



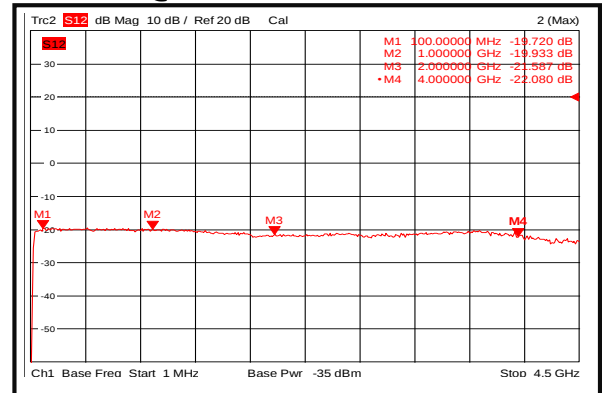
Input VSWR @+25°C



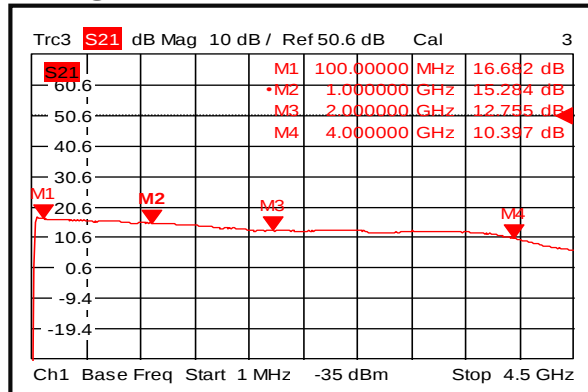
Output VSWR @+25°C



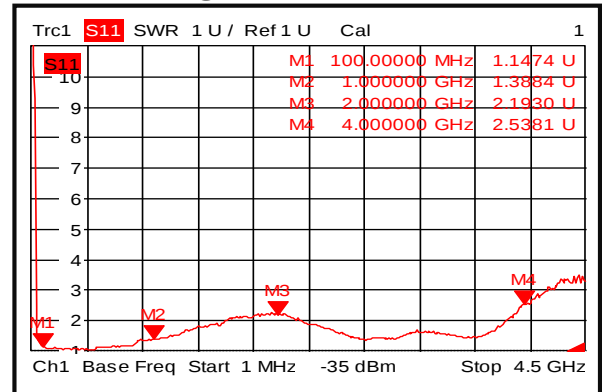
Isolation @+25°C



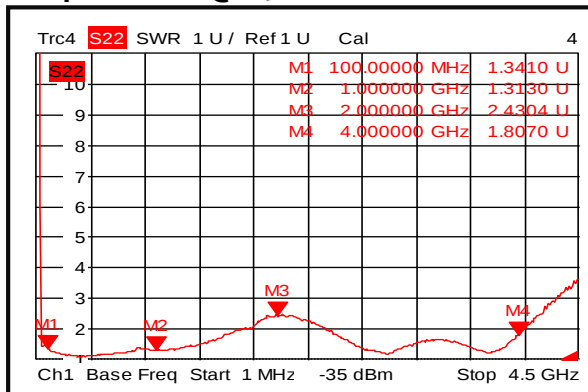
Gain @-45°C



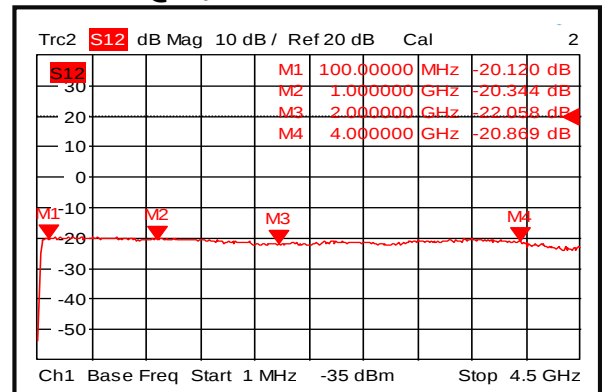
Input VSWR @-45°C



Output VSWR @-45°C



Isolation @-45°C



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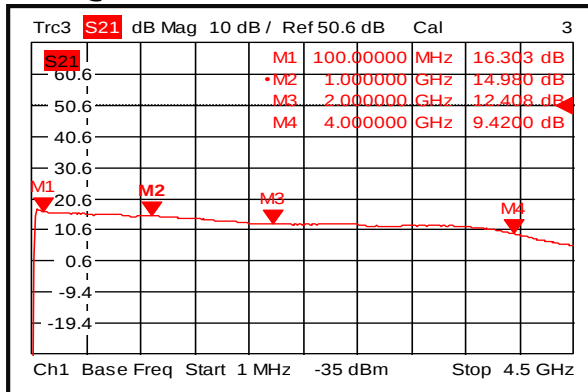


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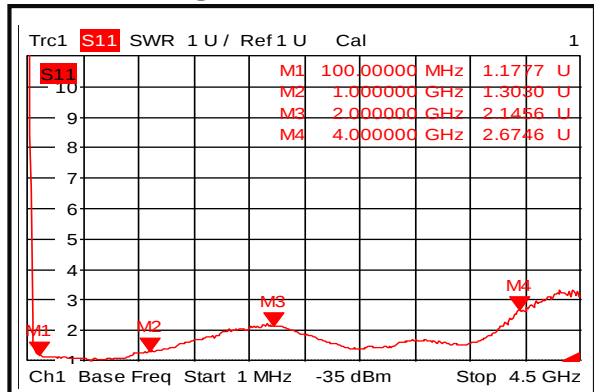
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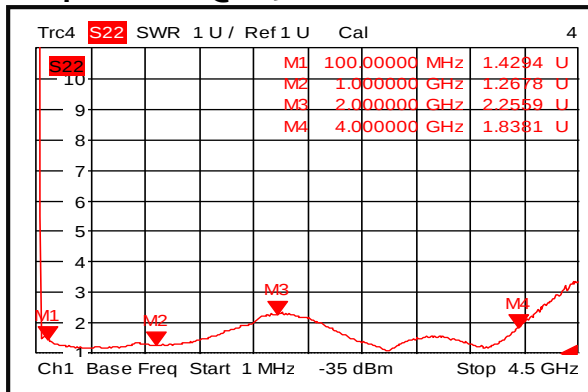
Gain @+85°C



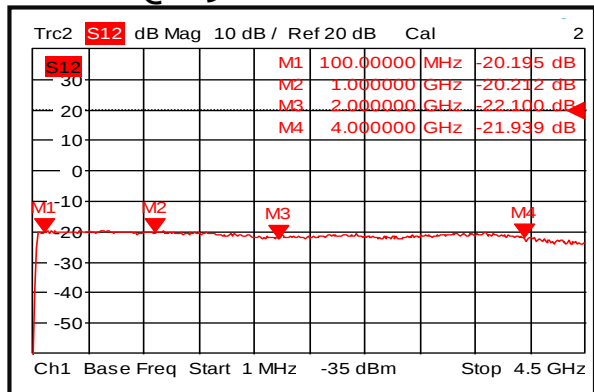
Input VSWR @+85°C



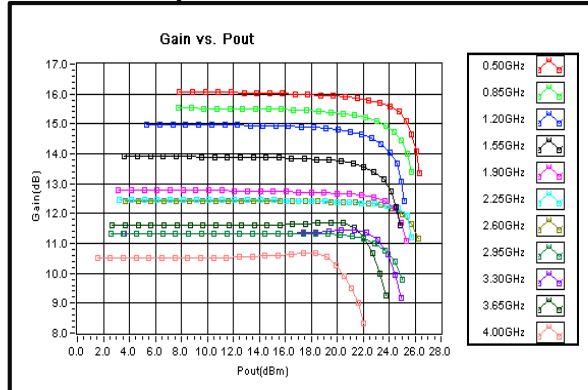
Output VSWR @+85°C



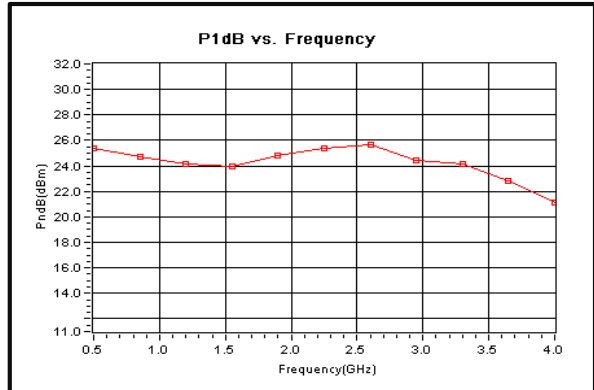
Isolation @+85°C



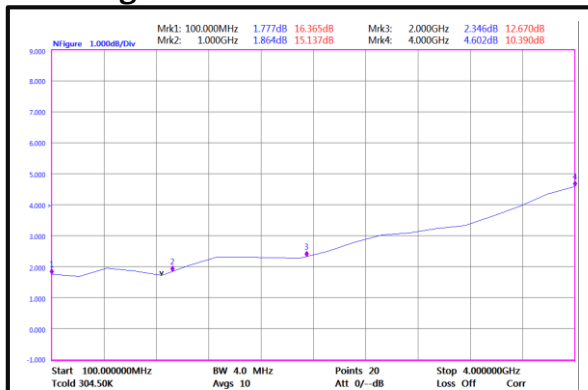
Gain vs. Output Power



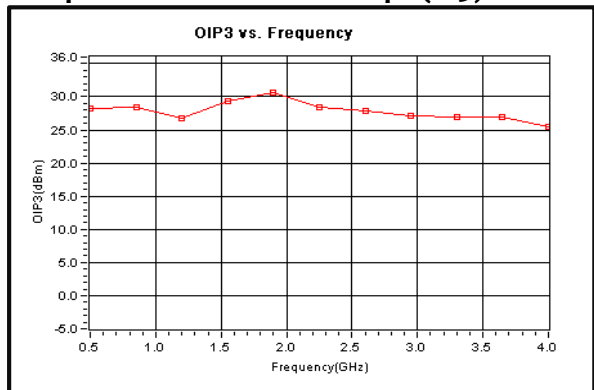
P1dB vs. Frequency



Noise Figure



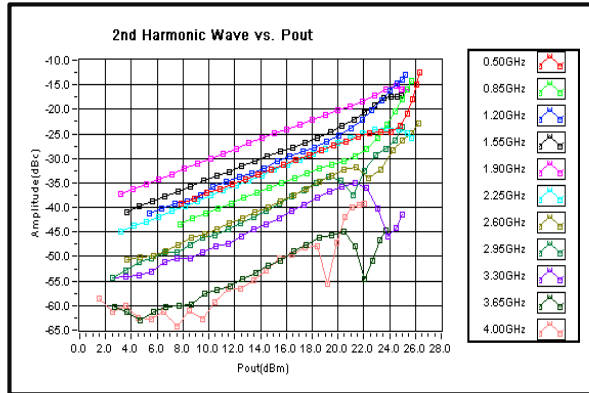
Output Third Order Intercept (IP3)



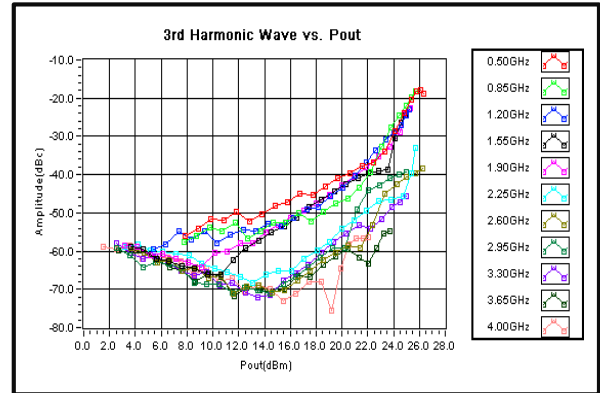
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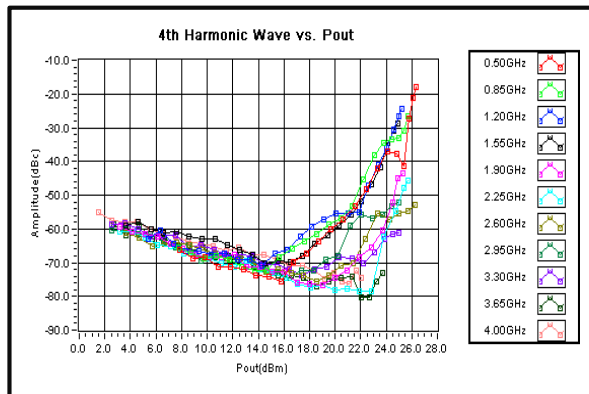
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



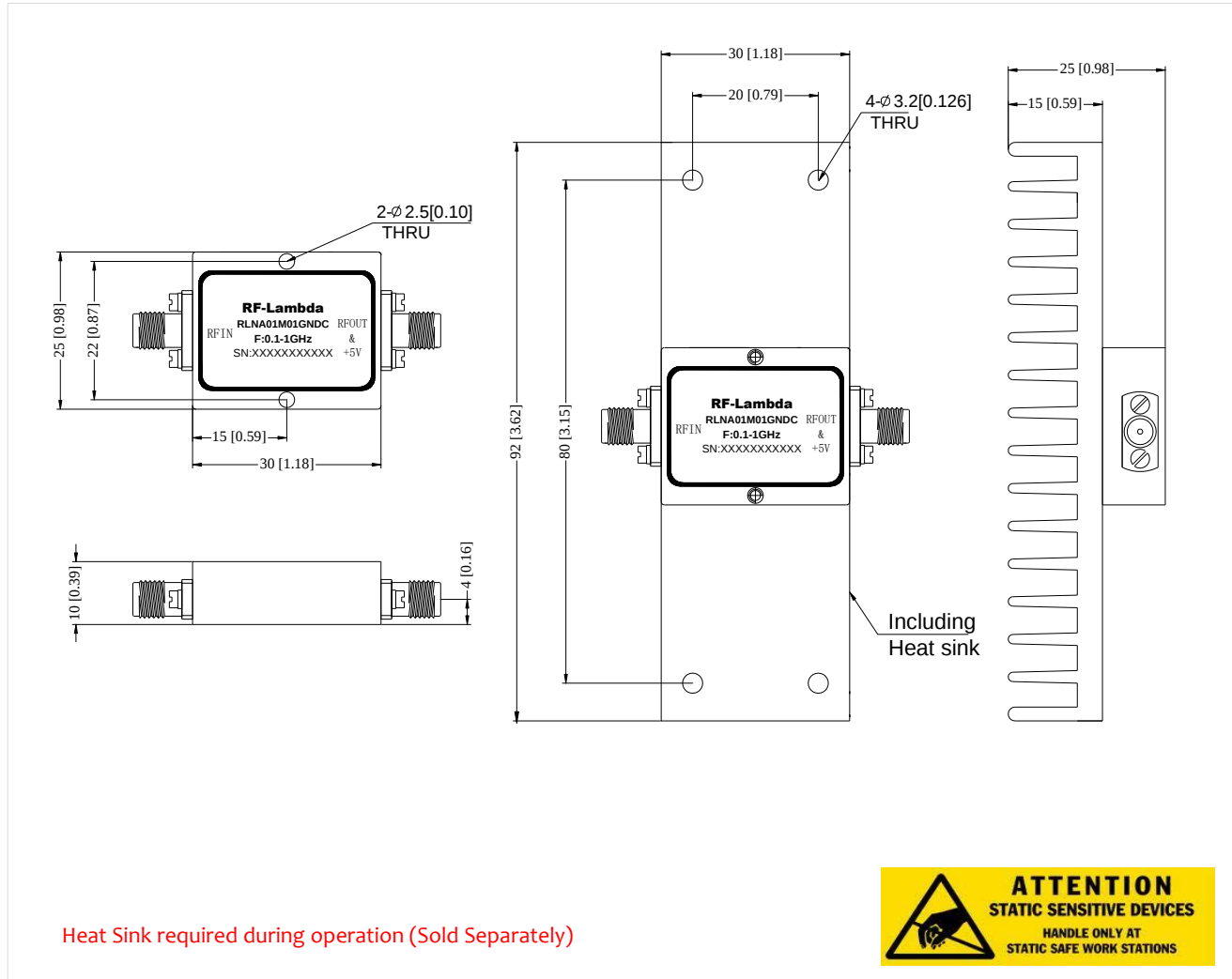
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	ECCN	Description
RLNA01M01GNDC	EAR99	0.1-1GHz Low Noise Amplifier

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