



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA50M05G43

Ultra Low Noise Amplifier 50MHz~500MHz



Features

- Gain: 50dB Typical
- Noise Figure: 0.6dB Typical
- P1dB Output Power: +22dBm Typical
- Supply Voltage: +15V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test Instrument
- Fiber Optics

Electrical Specifications, TA = +25°C, Vcc = +15V

Parameter	Min.	Typ.	Max.	Units
Frequency Range	50		500	MHz
Gain	45	50		dB
Gain Flatness		±1.5	±3.0	dB
Gain Variation Over Temperature (-45 ~ +85)		±0.5		dB
Noise Figure	0.45	0.6	0.8	dB
Input VSWR		1.5	2.0	: 1
Output VSWR		2.0	2.5	: 1
Output 1dB Compression Point (P1dB)	19	20		dBm
Saturated Output Power (Psat)		24		dBm
Output Third Order Intercept (IP3)		32		dBm
Supply Current (Vcc=+15V)		220	250	mA
Isolation S12		-55		dB
Weight	1.06			Ounces
Impedance	50			Ohms
Input / Output Connectors	SMA-Female			
Finish	Gold Plated			
Material	Aluminum			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

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Absolute Maximum Ratings

Operating Voltage	+15.5V
RF Input Power	-25dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +15V biasing
Power OFF Procedure	
Step 1	Turn off +15V 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		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)

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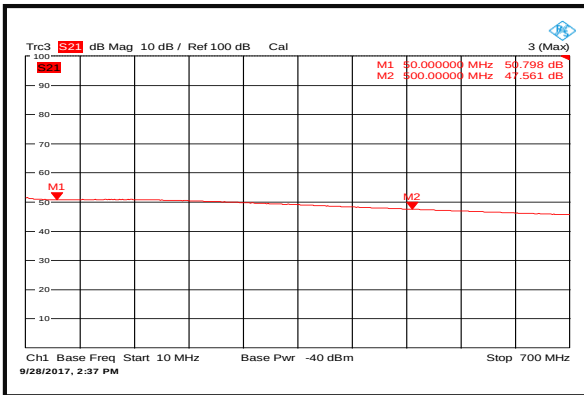
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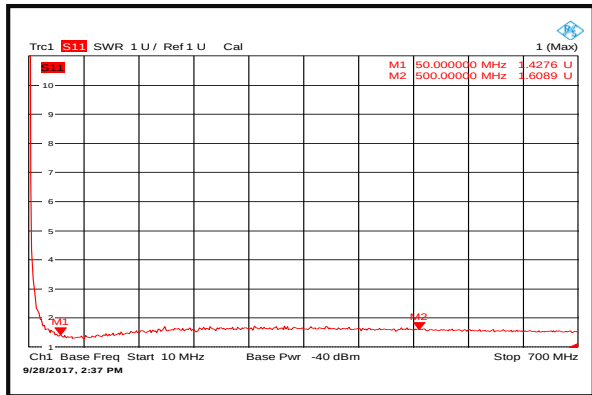
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Typical Performance Plots

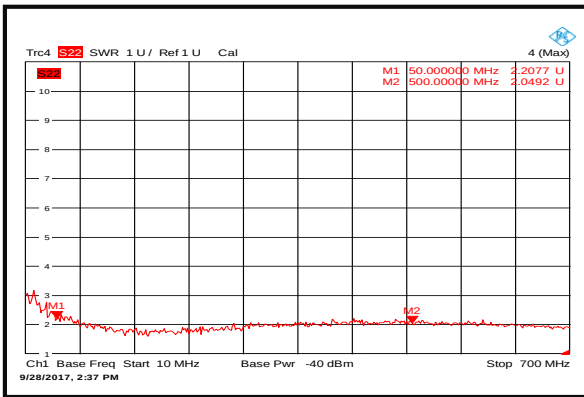
Gain @+25°C



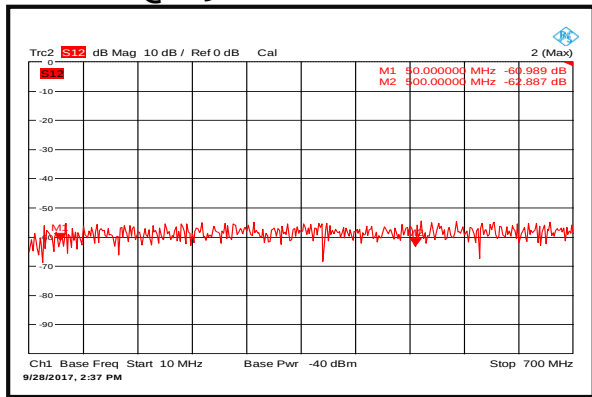
Input VSWR @+25°C



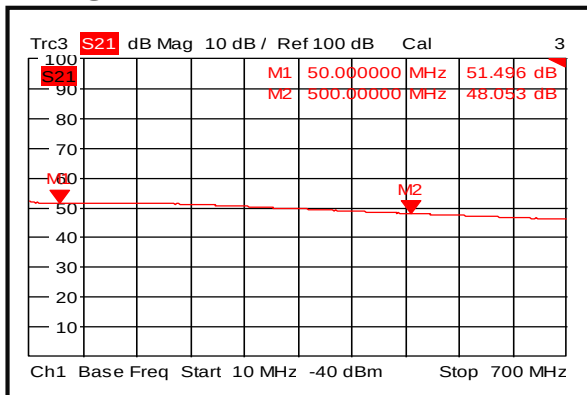
Output VSWR @+25°C



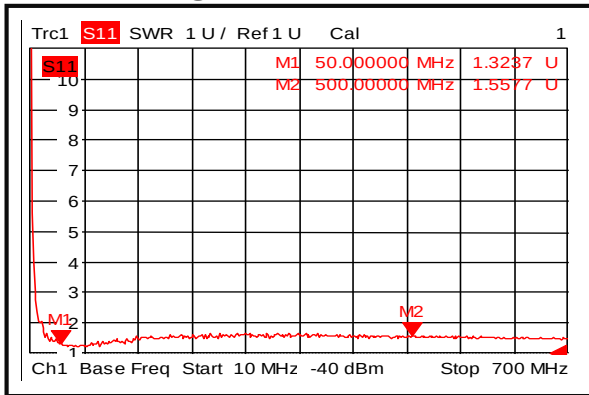
Isolation @+25°C



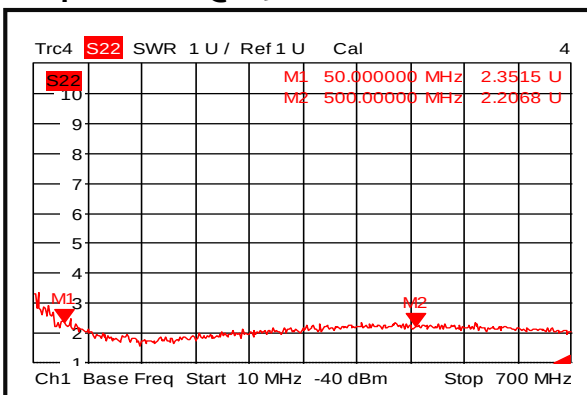
Gain @-45°C



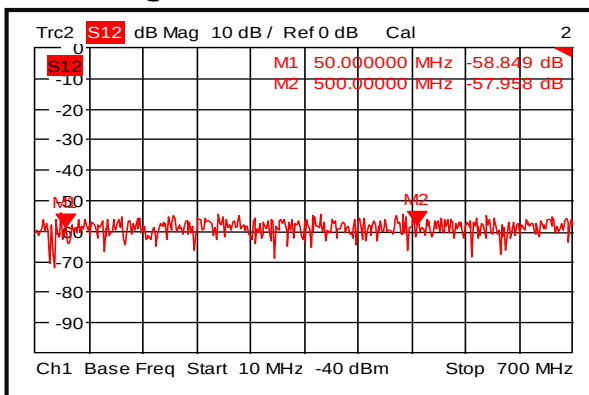
Input VSWR @-45°C



Output VSWR @-45°C



Isolation @-45°C



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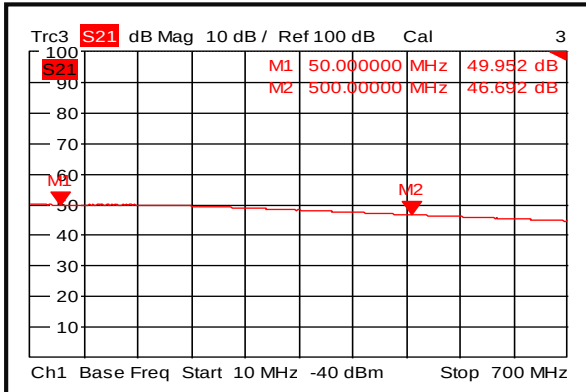


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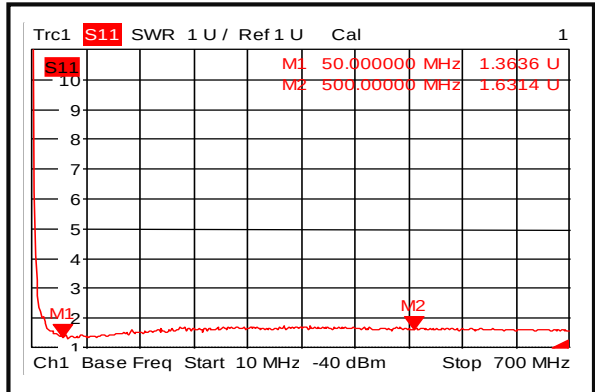
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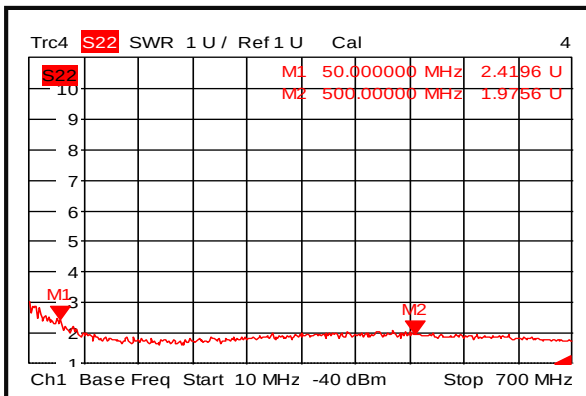
Gain @+85°C



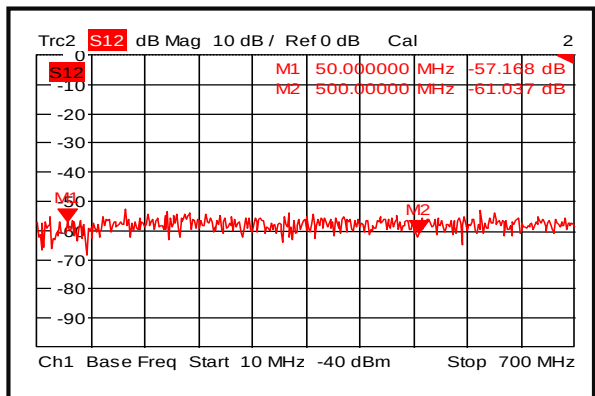
Input VSWR @+85°C



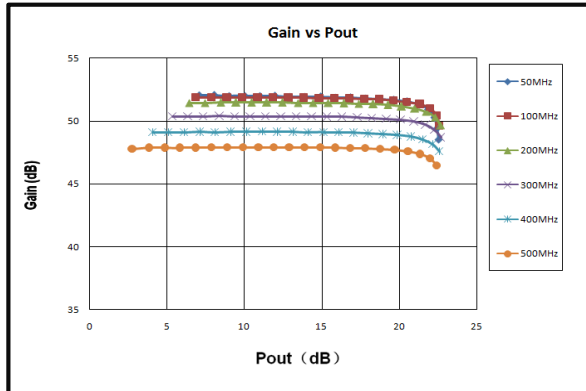
Output VSWR @+85°C



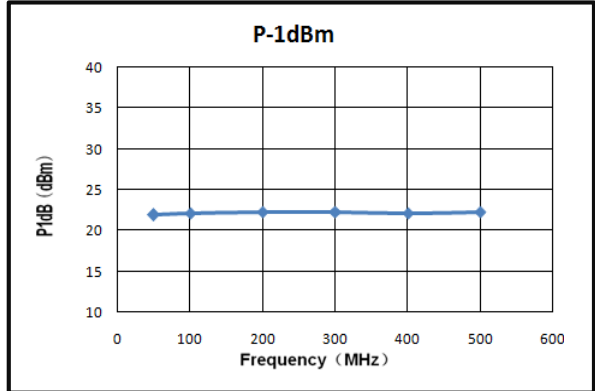
Isolation @+85°C



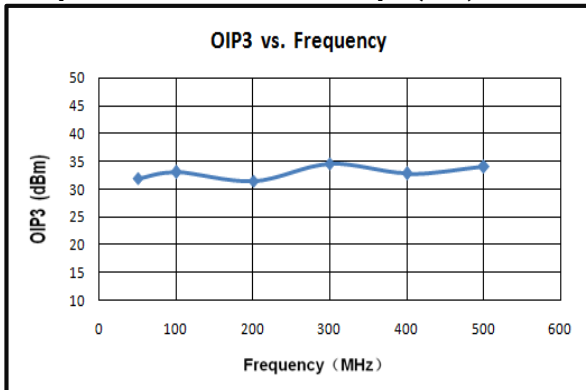
Gain vs. Output Power



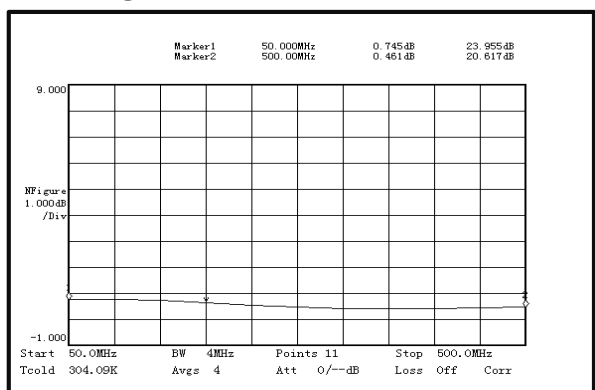
P1dB vs. Frequency



Output Third Order Intercept (IP3)



Noise Figure

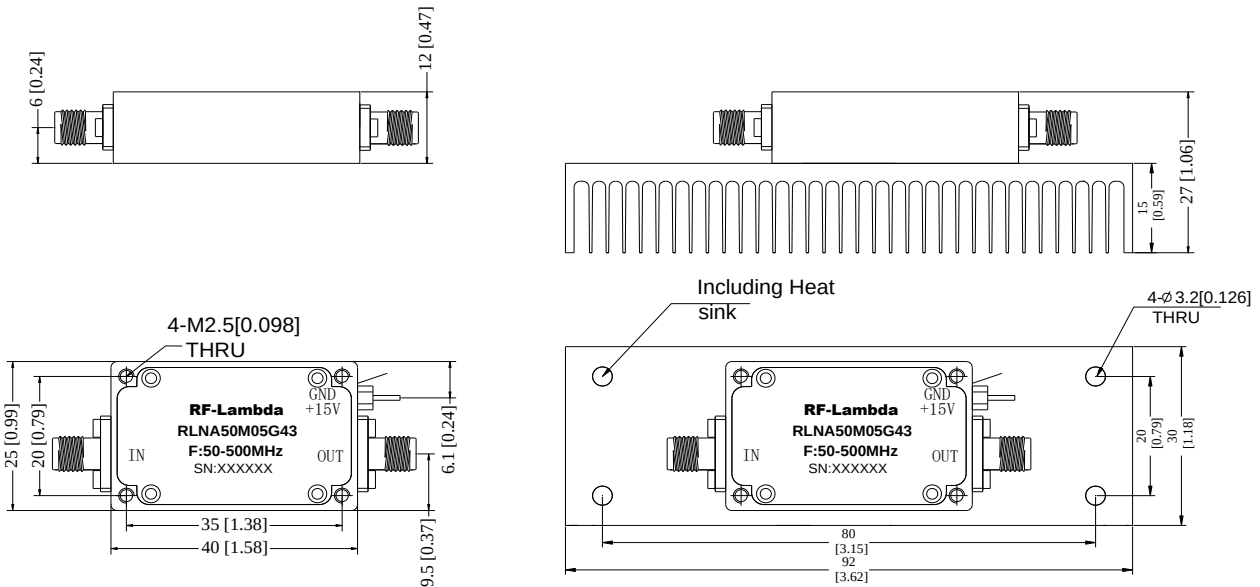


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Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	Description
RLNA50M05G43	50-500MHz Ultra Low Noise Amplifier

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