



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA17G25GB

Wide Band Low Noise Amplifier 15GHz~27GHz



Features

- Gain: 38dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +28dBm
- Supply Voltage: +12V

Typical Applications

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

Electrical Specifications, $T_A = +25\text{ }^{\circ}\text{C}$, $V_{CC} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	15	21	27	GHz
Gain	31	41		dB
Gain Flatness		± 2		dB
Gain Variation Over Temperature (-45 ~ +85)		± 1.0		dB
Noise Figure		2.5	3.5	dB
Input VSWR		1.8	2.3	:1
Output VSWR		2.0		:1
Output 1dB Compression Point (P1dB)	25	28		dBm
Saturated Output Power (Psat)		30		dBm
Output Third Order Intercept (IP3)		36		dBm
Isolation S12	-55	-65		dB
Supply Current ($V_{CC}=+12\text{V}$)		450	500	mA
Weight	2.82			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	+3dBm

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 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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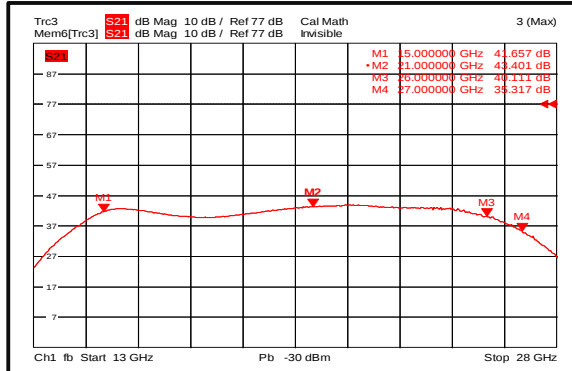
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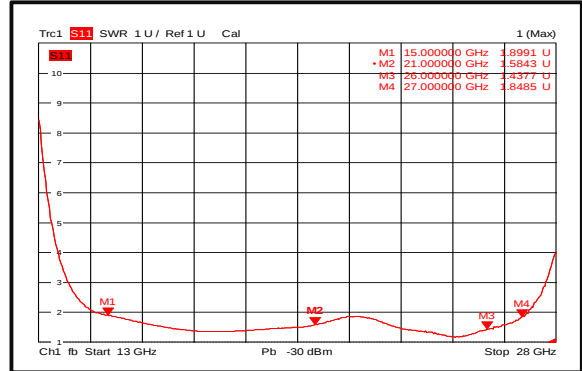
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Typical Performance Plots

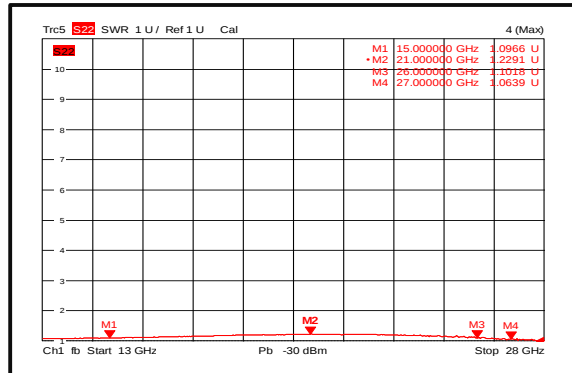
Gain@+25°C



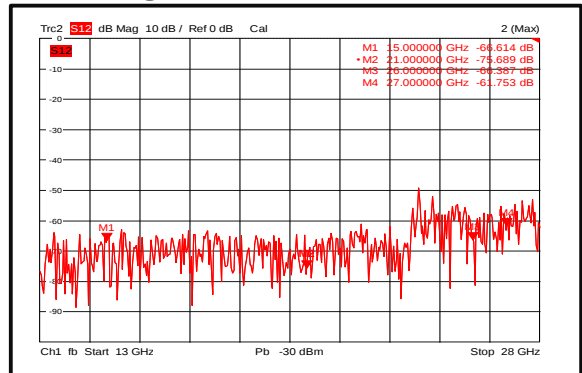
Input VSWR@+25°C



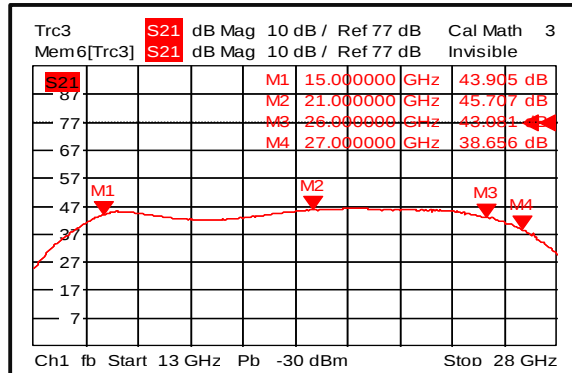
Output VSWR@+25°C



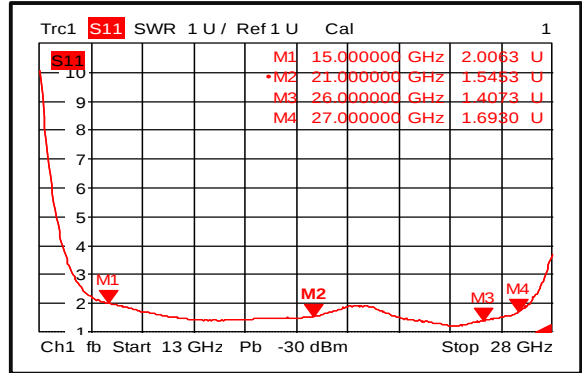
Isolation@+25°C



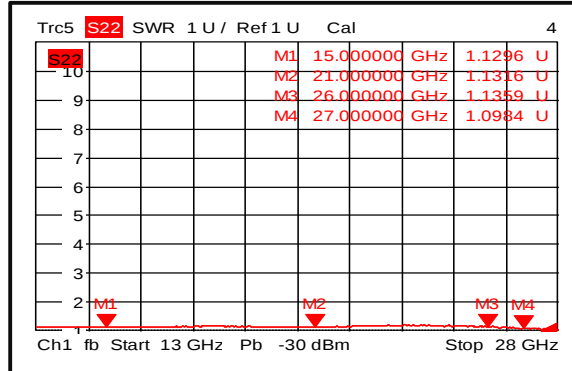
Gain@-45°C



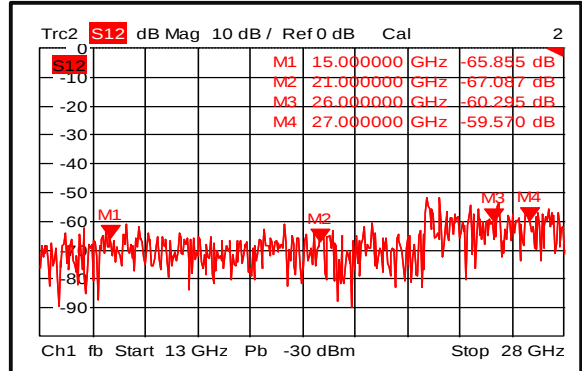
Input VSWR @-45°C



Output VSWR @-45°C



Isolation @-45°C



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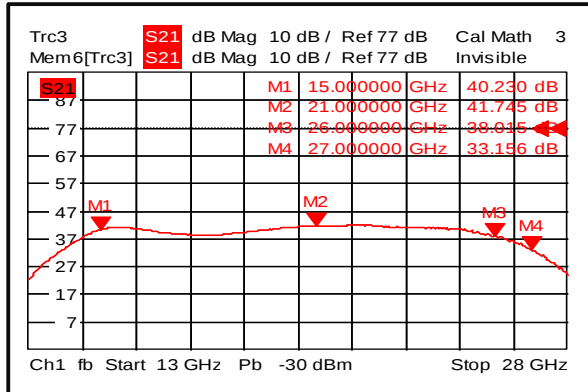


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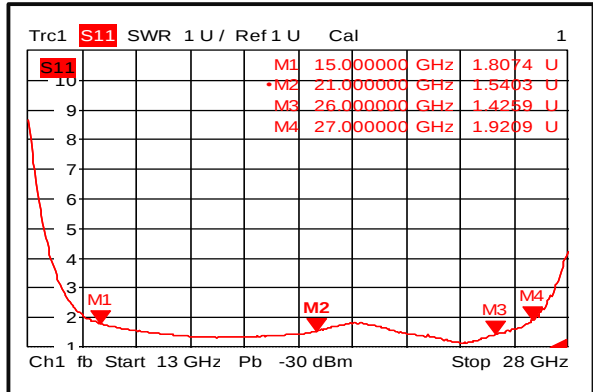
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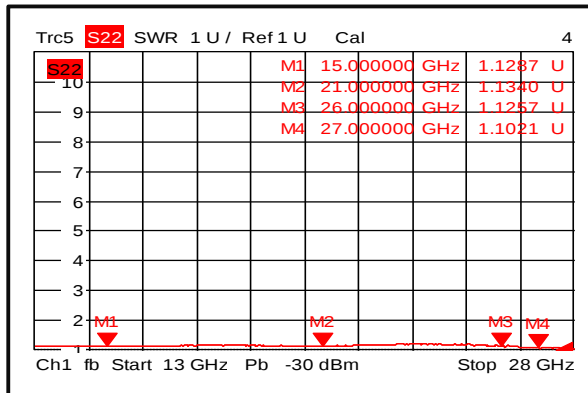
Gain @+85°C



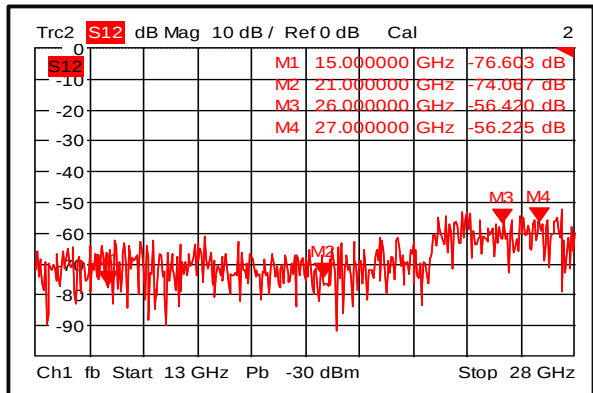
Input VSWR@+85°C



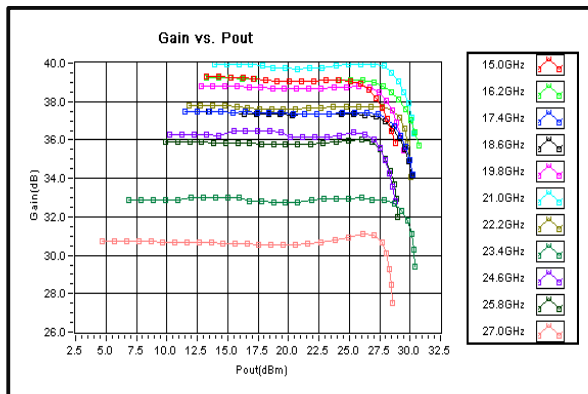
Output VSWR@+85°C



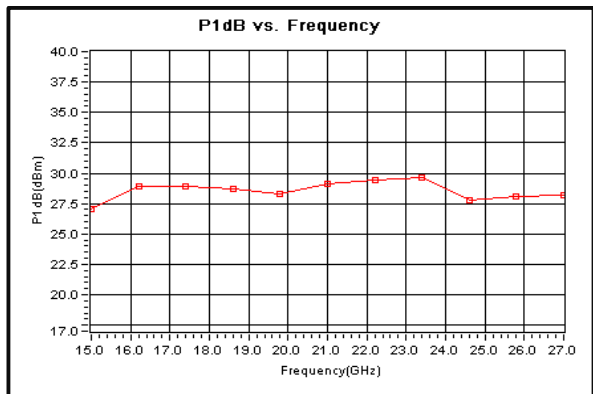
Isolation@+85°C



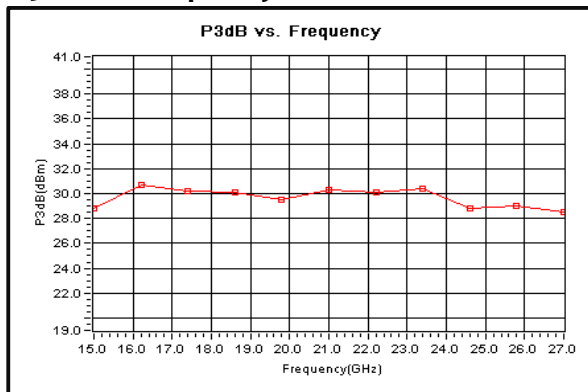
Gain vs. Output Power



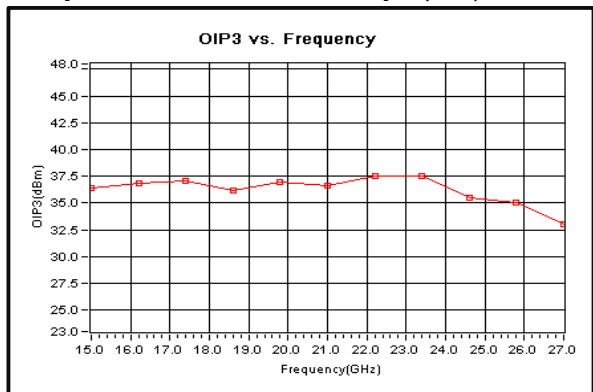
P1dB vs. Frequency



P3dB vs. Frequency



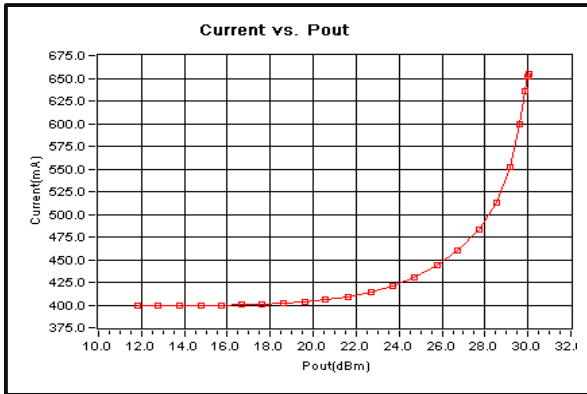
Output Third Order Intercept (IP3)



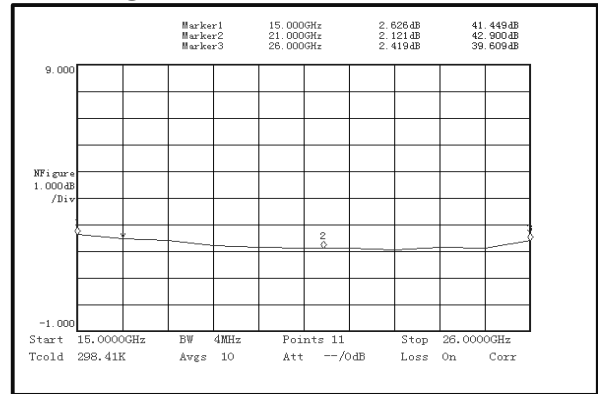
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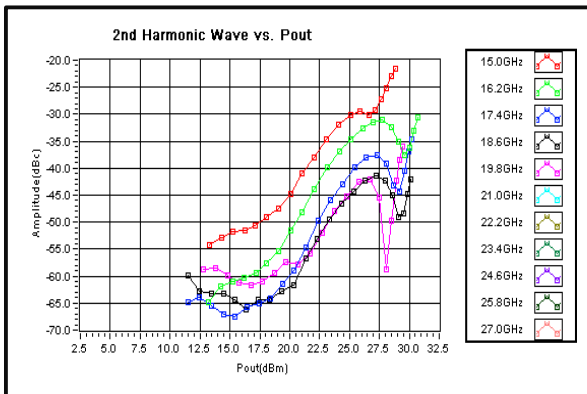
Current vs. Pout



Noise Figure



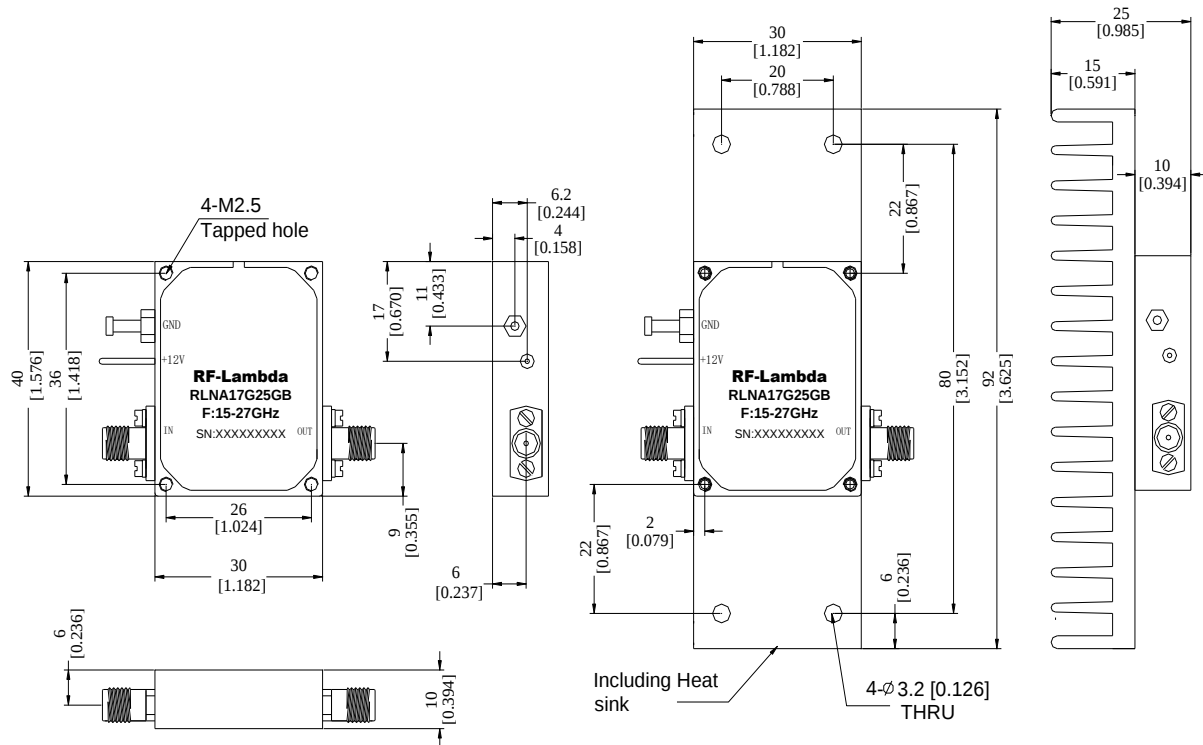
2nd Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA17G25GB	EAR99	15-27GHz Low Noise Amplifier

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