



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA18G20G

Wide Band Low Noise Amplifier 17GHz ~ 26GHz



Features

- Gain: 35dB typical
- Noise Figure: 1.8dB typical
- High P1dB: +21dBm typical
- Supply Voltage: +12V

Typical Applications

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

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18		20.9	17		26	GHz
Gain	32	35		30	34		dB
Gain Flatness		± 0.5	± 1.0		± 1.5		dB
Gain Variation Over Temperature ($-45 \sim +85^\circ\text{C}$)		± 1.0			± 1.5		dB
Noise Figure		1.8	2.2		1.8	3.0	dB
Input VSWR		1.2	1.6		1.5		: 1
Output VSWR		1.8	2.2		1.8		: 1
Output 1dB Compression Point (P1dB)	20	21		17	21		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (IP3)		27			26		dBm
Supply Current ($V_{CC} = +12\text{V}$)		160	200		160	200	mA
Isolation S12		-65			-60		dB
Weight	1.41						ounces
Impedance	50						Ohms
Input / Output Connectors	2.92mm - 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)						

Wide Band Low Noise Amplifier 17GHz ~ 26GHz



Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-5dBm

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		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)



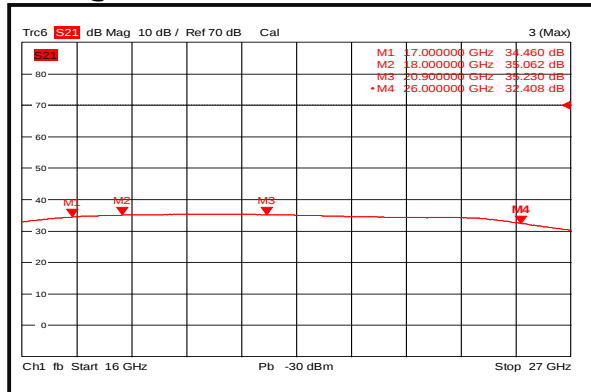
RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

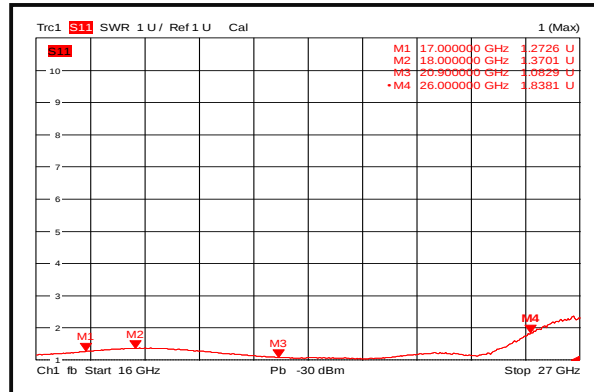
RLNA18G20G

Typical Performance Plots

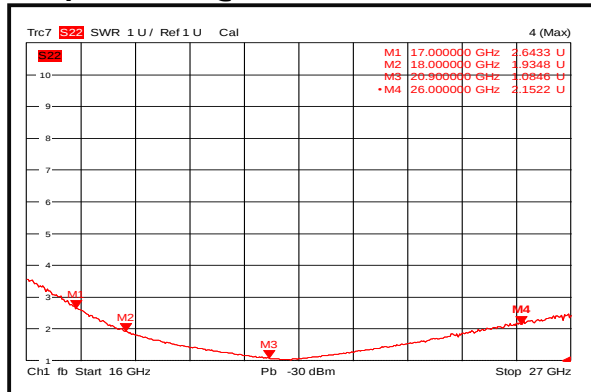
Gain @+25°C



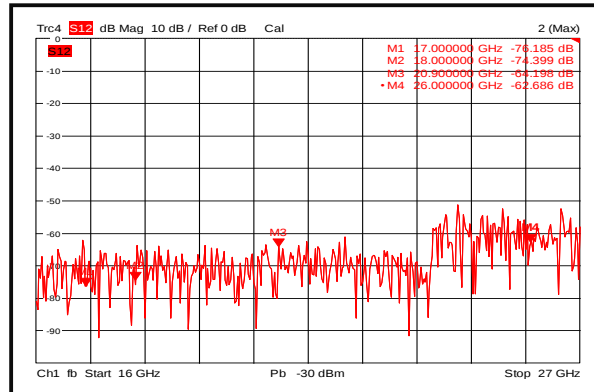
Input VSWR @+25°C



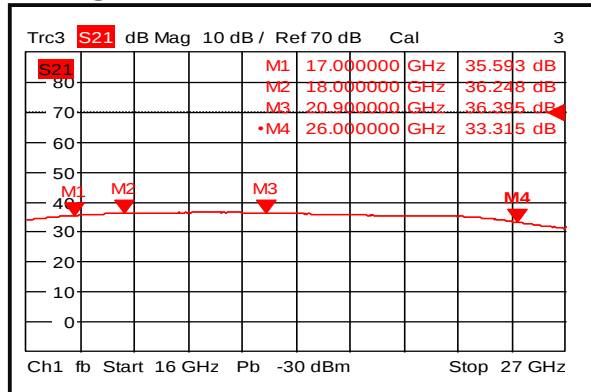
Output VSWR @+25°C



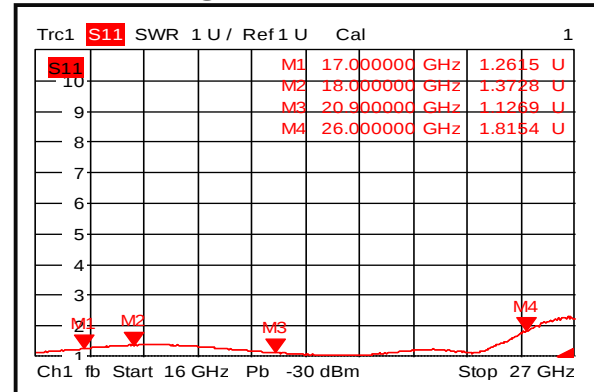
Isolation @+25°C



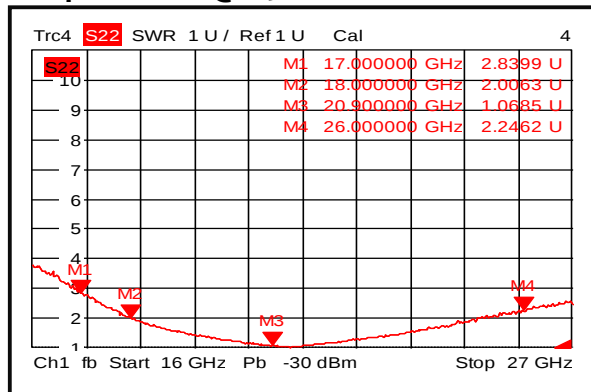
Gain @-45°C



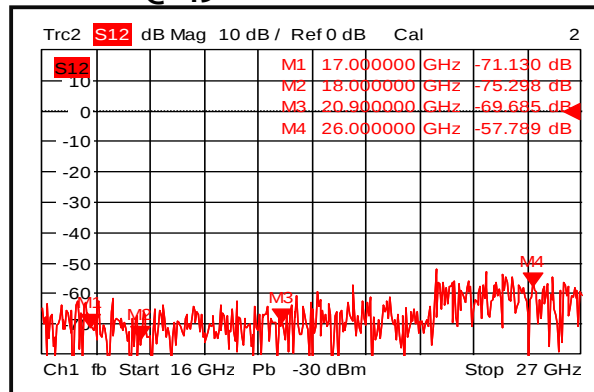
Input VSWR @-45°C



Output VSWR @-45°C



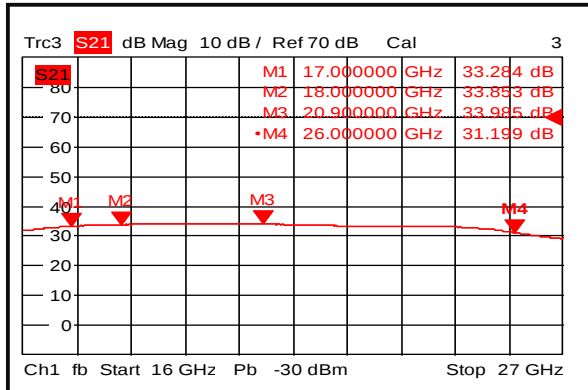
Isolation @-45°C



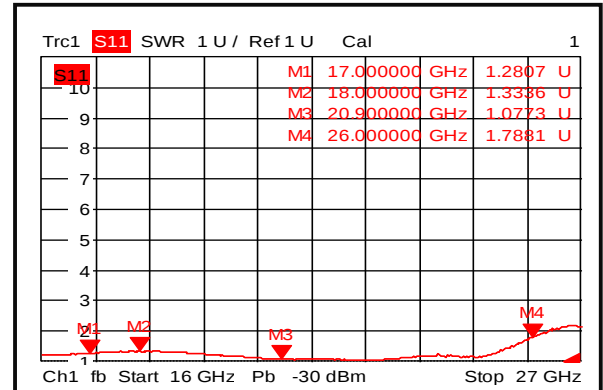
Wide Band Low Noise Amplifier 17GHz ~ 26GHz



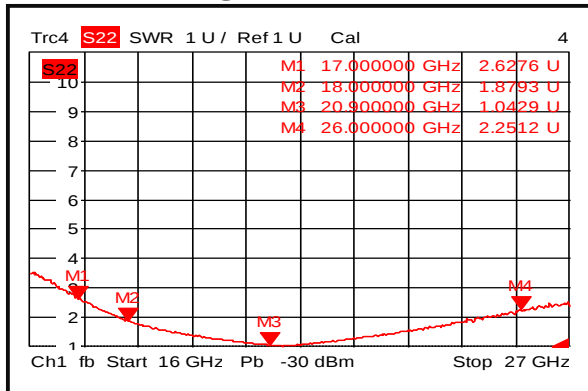
Gain @+85°C



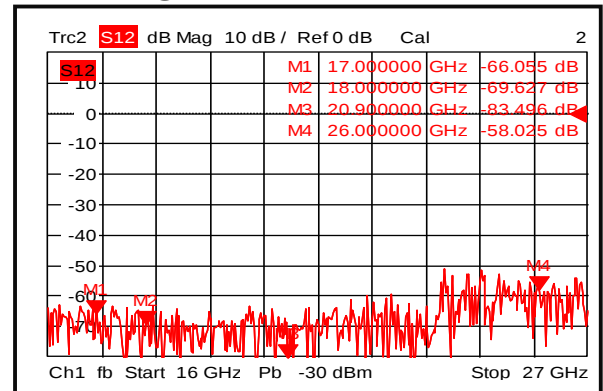
Input VSWR @+85°C



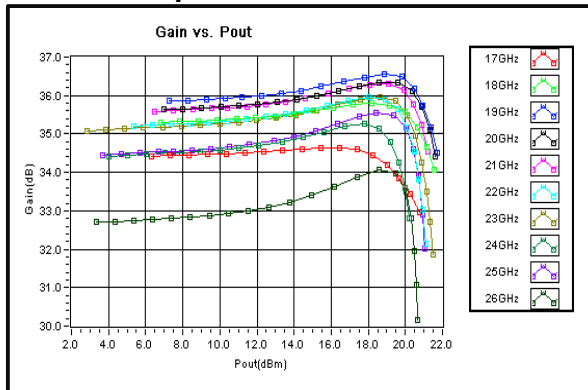
Output VSWR @+85°C



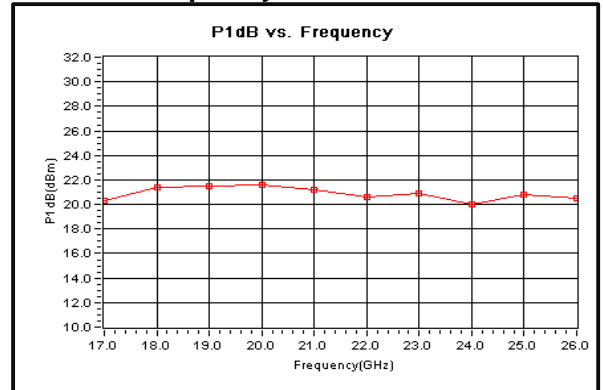
Isolation @+85°C



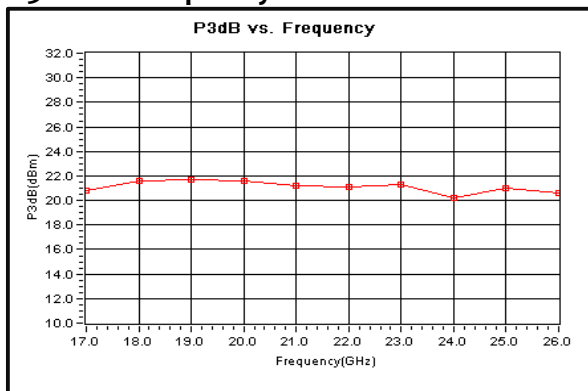
Gain vs. Output Power



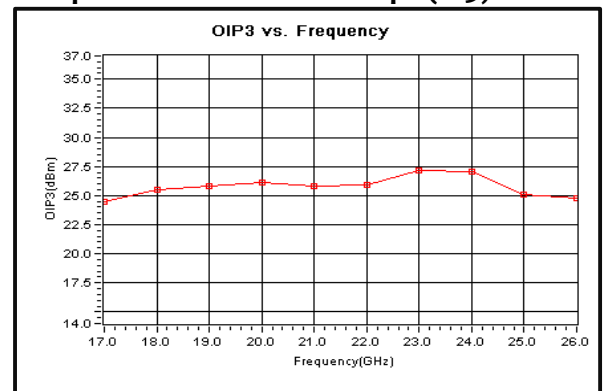
P1dB vs. Frequency



P3dB vs. Frequency

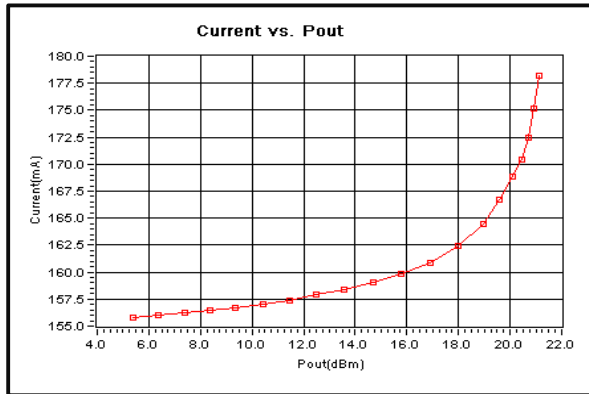


Output Third Order Intercept (IP3)

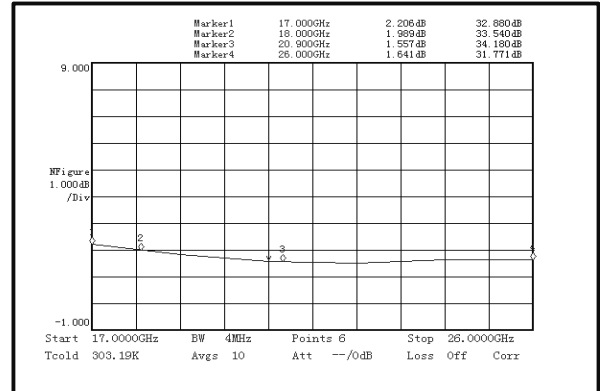




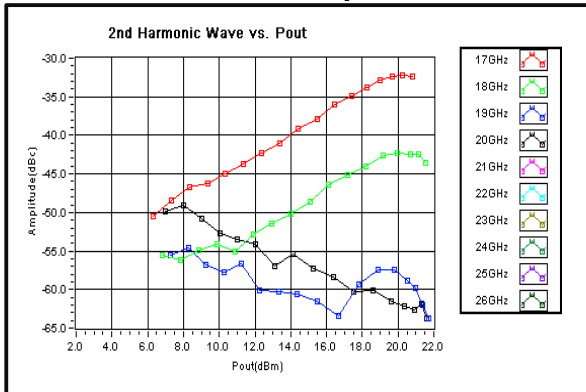
Current



Noise Figure



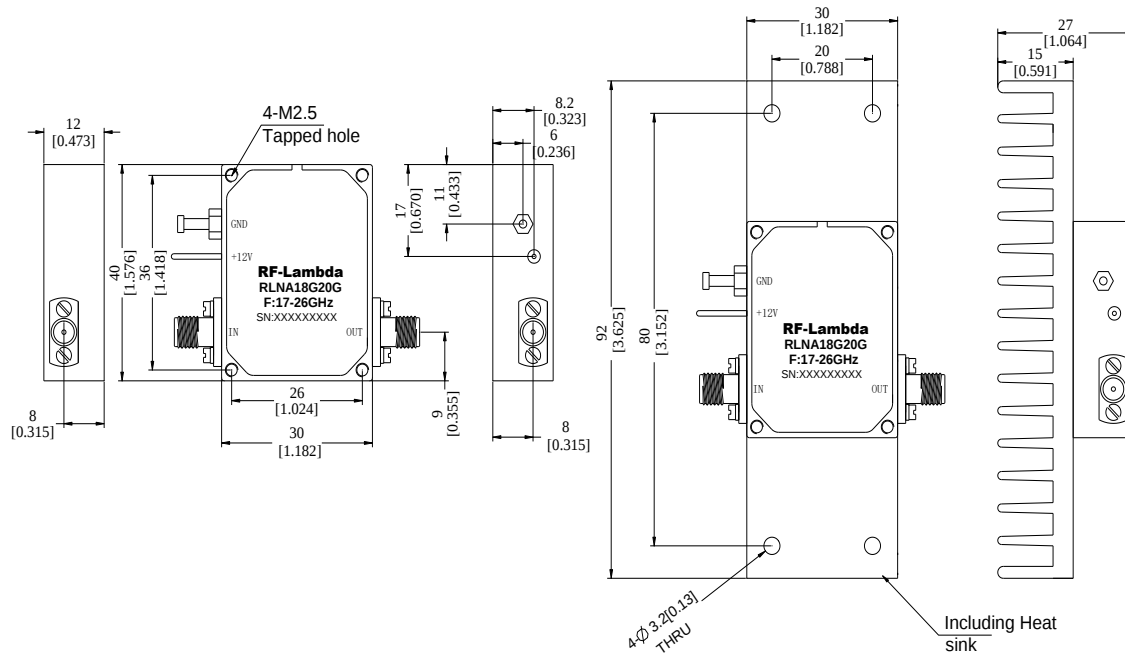
2nd Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA18G20G	EAR99	17-26GHz Low Noise Amplifier

Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.