Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz

RoHS Compliant

Features

- High Output Power 25dBm typical.
- High peak to average handling capability.
- High linearity and low noise figure.
- Convenient AC Power Input. (AC 110V/220V)
- Integrated Heat Sink and Fan.

Typical Applications

- Microwave Radio and VSAT.
- Aerospace and Military.
- Telecom Infrastructure.

Electrical Specifications, T_A=25 ℃

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		3	3		6	GHz
Gain	28	30		28	30		dB
Gain Flatness		±1.5	±2.0		±1.5	±2.0	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure		4.5			3.0	4.5	dB
Input VSWR		2.0	3.0		2.0	3.0	: 1
Output VSWR		1.5	2.0		1.6	2.0	: 1
Output 1dB Compression Point (P1dB)	23	25		24	25		dBm
Saturated Output Power (Psat)		27			26		dBm
Output Third Order Intercept (IP3)		36			35		dBm
Isolation S12		-60			-55		dB
Supply Current		250	350		250	350	mA
Weight	39.15						ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Black Paint						
Material	Aluminum						

Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz

Absolute Maximum Ratings	
Supply Voltage	AC 110~230V
RF Input Power (RFIN)	-5dBm

Note: Maximum RF input power is defined to protect the amplifier from damage.
Input power may be increased at the users own risk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Ordering Information	
Part No.	Description
RAMP01M06GB	0.1-6GHz AC–Low Noise Amplifier

Biasing Up Procedure	
Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position
Power OFF Procedure	
Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

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)

Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz

Amplifier Use

Ensure that the amplifier input and output ports are safely terminated into a proper 50 ohm load before turning on the power. Never operate the amplifier without a load. A proper 50 ohm load is defined as a load with impedance less than 1.9:1 or return loss larger than 10dB relative to 50 Ohm within the specified operating band width.

Power Supply Requirements
Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the typical current or 1.2 times the maximum current (whichever is greater).

In most cases, RF - Lambda amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.

Ensure that the power is off when connecting or disconnecting the input or output of the amp.

Prevent overdriving the amplifier. Do not exceed the recommended input power level.

Adequate heat-sinking required for RF amplifier modules. Please inquire.

Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

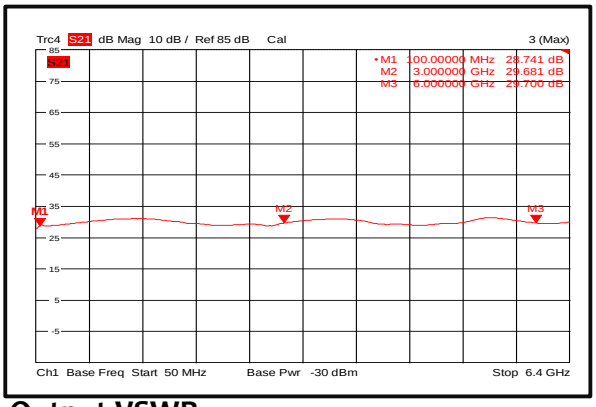
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

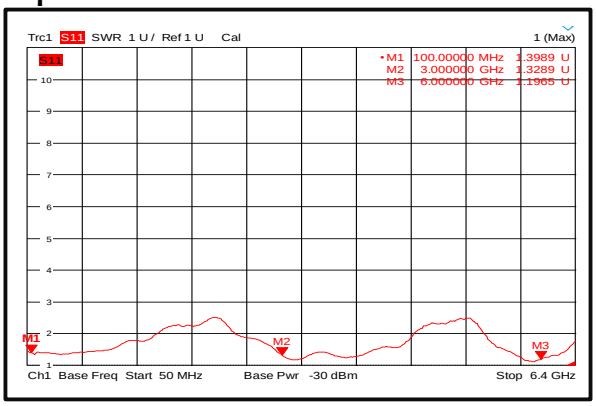
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Typical performance plots

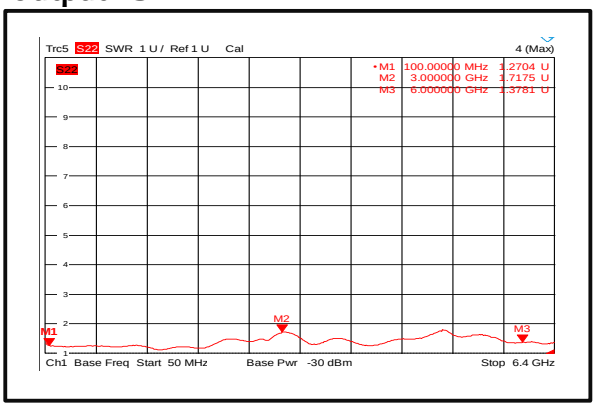
Gain



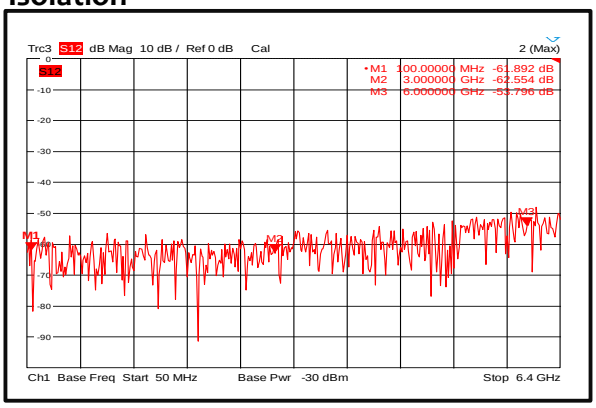
Input VSWR



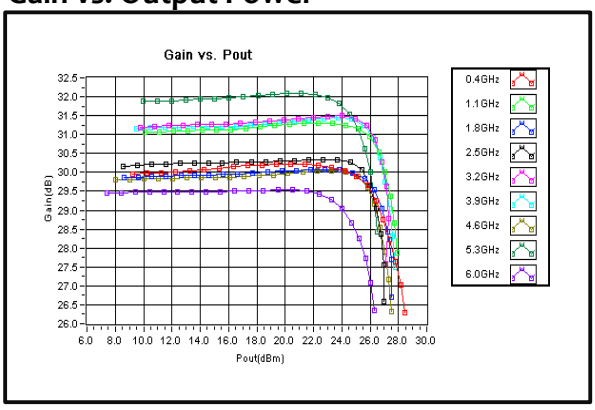
Output VSWR



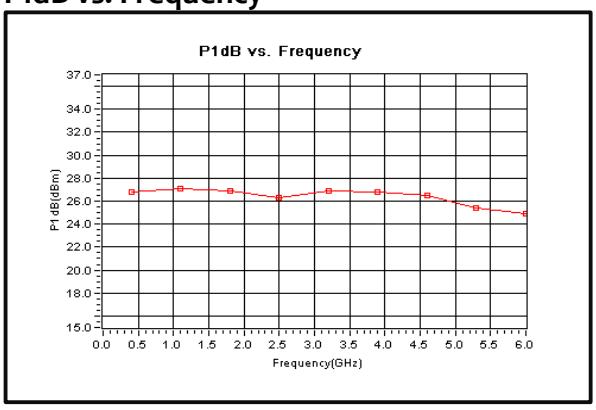
Isolation



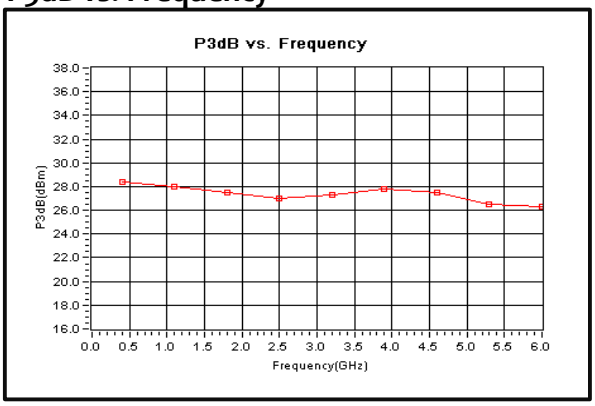
Gain vs. Output Power



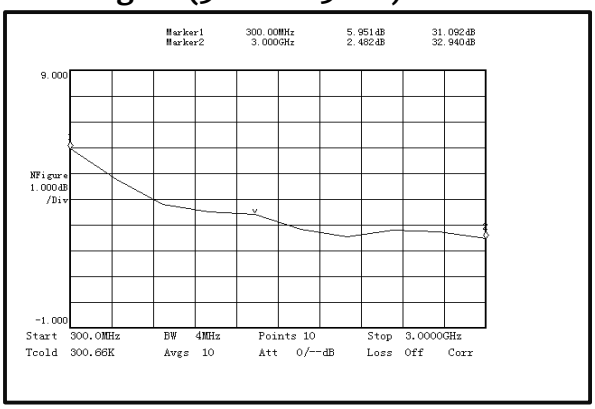
P1dB vs. Frequency



P3dB vs. Frequency

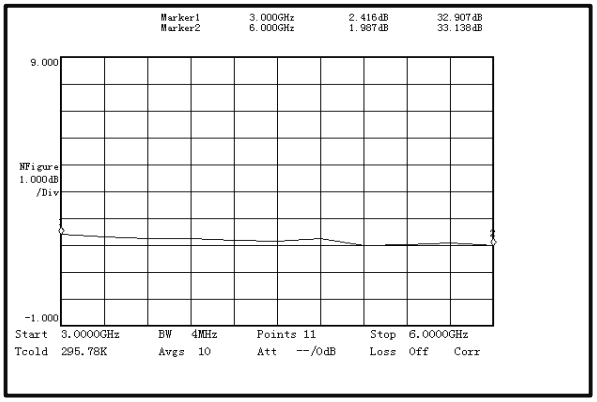


Noise Figure (300MHz-3GHz)

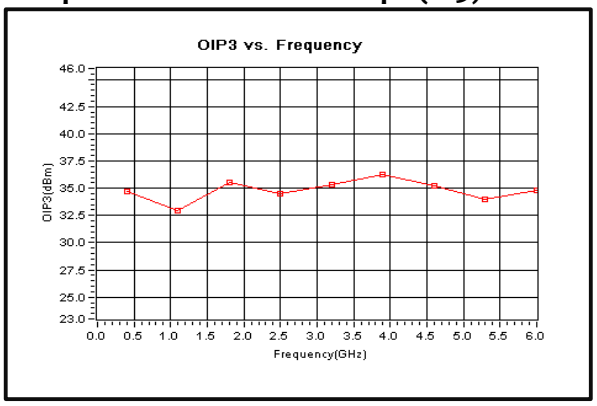


Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz

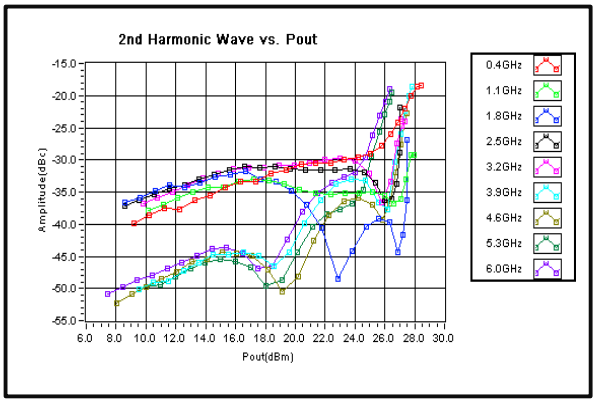
Noise Figure (3GHz-6GHz)



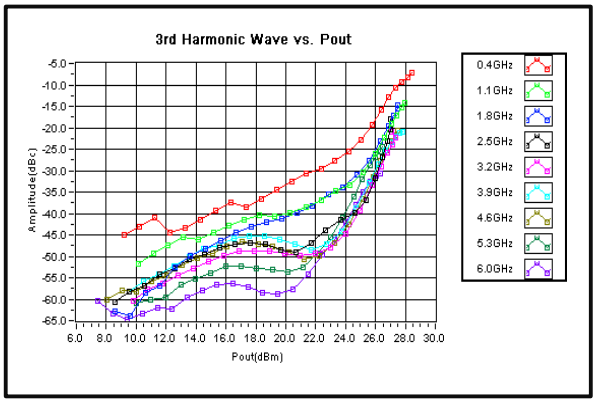
Output Third Order Intercept (IP3)



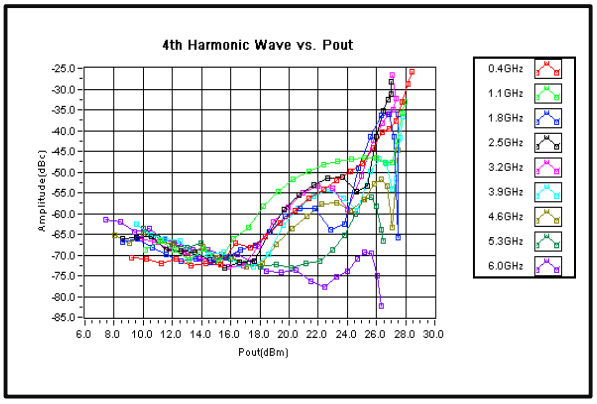
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



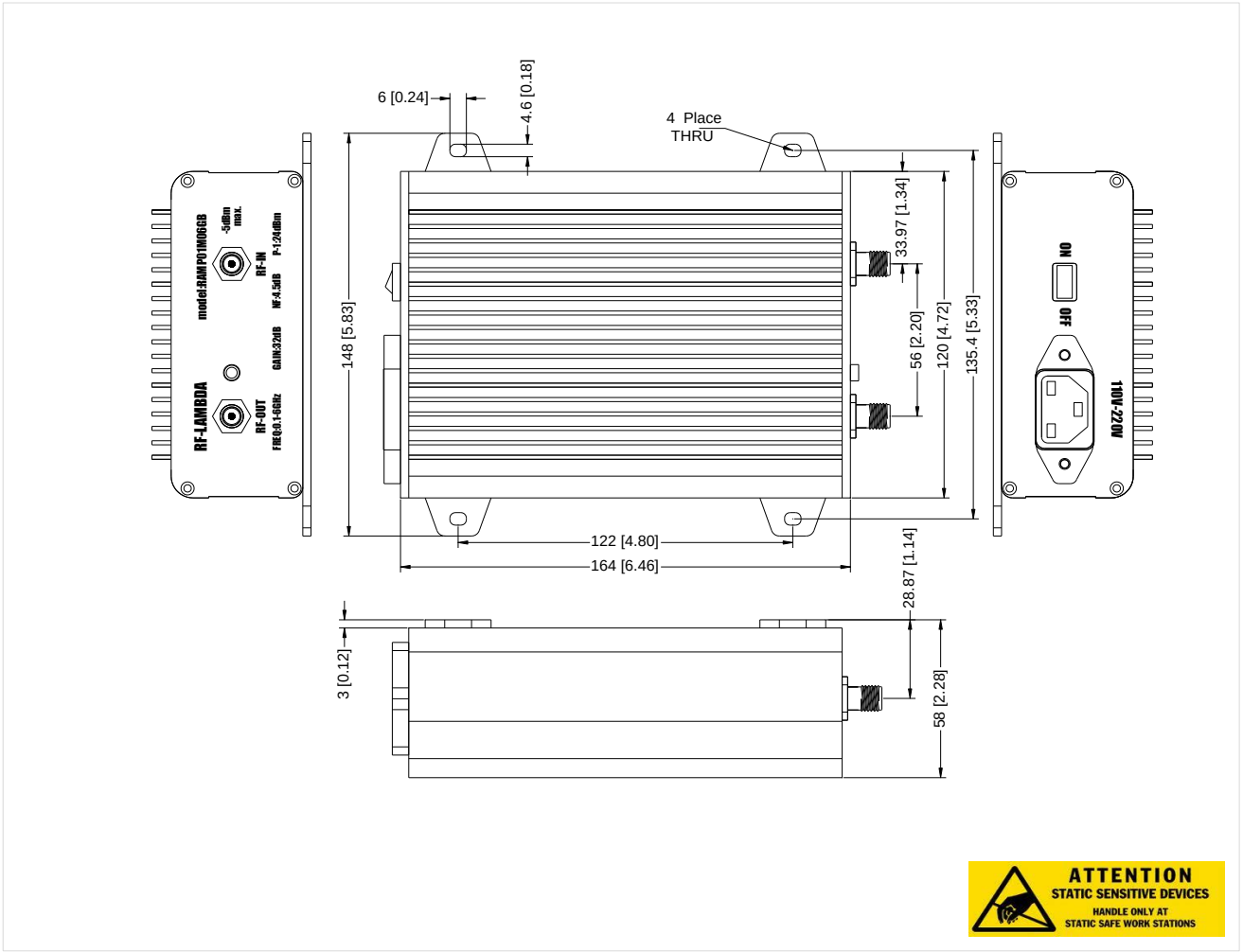
4th Harmonic Wave Output Power



Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz

Outline Drawing:

All Dimensions in mm [inches]



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.

Ultra Wide Band Low Noise Amplifier AC 110V/220V 0.1GHz~6GHz