Ultra Broadband RF Microwave 110V/220V System Benchtop Amplifier 0.01GHz~47GHz

RoHS Compliant

Features

- Wideband Solid State Power Amplifier
- Psat: +22dBm
- High P1dB: 20dBm
- Low Noise Figure: 5.0dB Typical
- Supply Voltage: 110/220 VAC

Typical Applications

- Wireless Infrastructure
- Short Haul / High Capacity Links
- RF Microwave and Vsat
- Military & Aerospace Applications
- Test Instrumentation

Electrical Specifications, T_A = +25°C

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.1~25			25~47			GHz
Gain		42			39		dB
Gain Variation Over Temperature		0.5	0.8		0.5	0.8	dB
Noise Figure	2.0	2.5		3.5	4.5		dB
Input VSWR		1.38			1.5		:1
Output VSWR		1.38			1.38		:1
Output Power For 1dB Compression (P-1dB)		23	24		19	20	dBm
Saturated Output Power (Psat)		24.5	25		21	22	dBm
Output Third Order Intercept (IP3)		27.5			25		dBm
Power Supply		110/220			110/220		VAC
Isolation S12		82			75		dB
Input Max		P1dB - Gain			P1dB - Gain		dBm
Weight	1030						g
Impedance	50						Ohms
Input / Output Connectors	2.4-Female						
Finishing	Black Painted Finish						
Material	Aluminum / Copper						

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Absolute Maximum Ratings	
Supply Voltage	110V/ 220V AC
RF Input Power (RFIN)	P1dB - Gain
Storage Temperature (°C)	-50 to +125

Note: Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves

Biasing Up Procedure	
Step 1	Connect input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Connect Ground Pin
Step 3	Turn on the unit
Power OFF Procedure	
Step 1	Turn off the unit
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications	
Operational Temperature (°C)	-45 ~ +55 (Case Temperature must be less than 85C all time)
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msec half sine wave, 3 axis both directions

Ordering Information	
Part No.	Description
RAMP00M47GA	0.1GHz~47GHz LNA

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 of RF-Lambda amplifiers will go through power and temperature stress testing.
Due to fragile of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.

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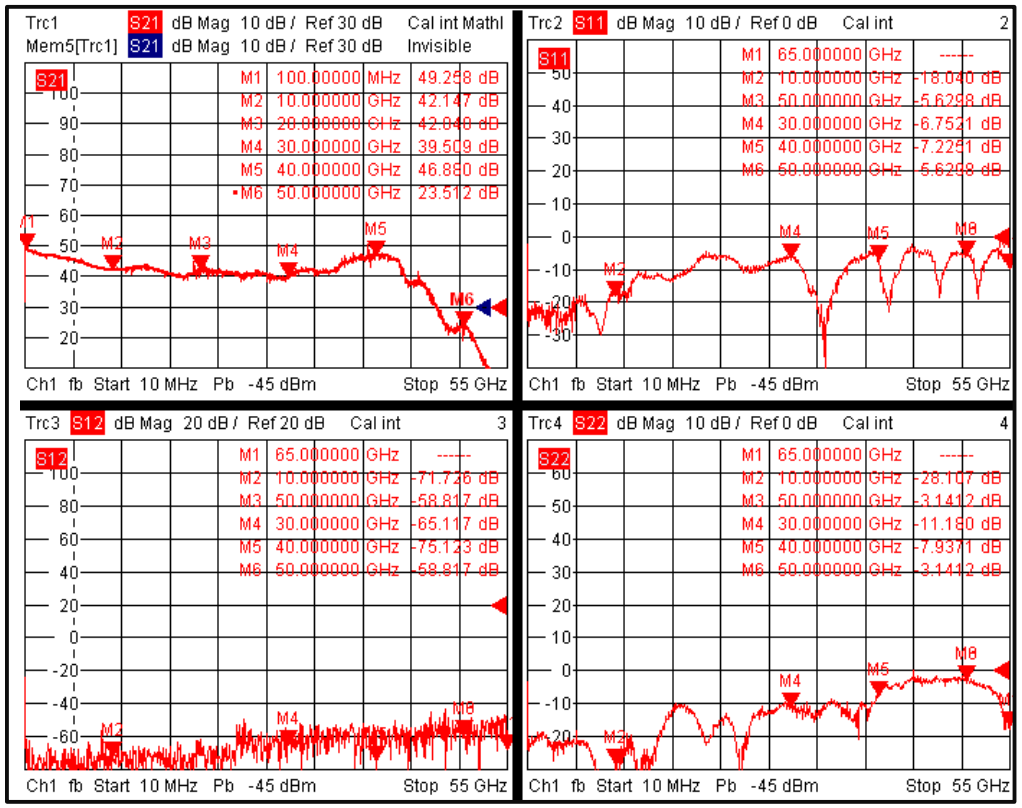
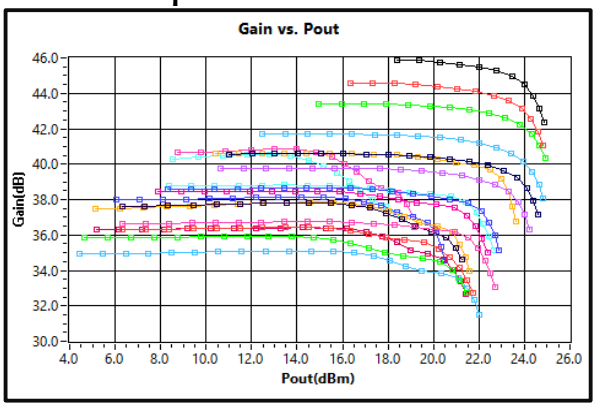
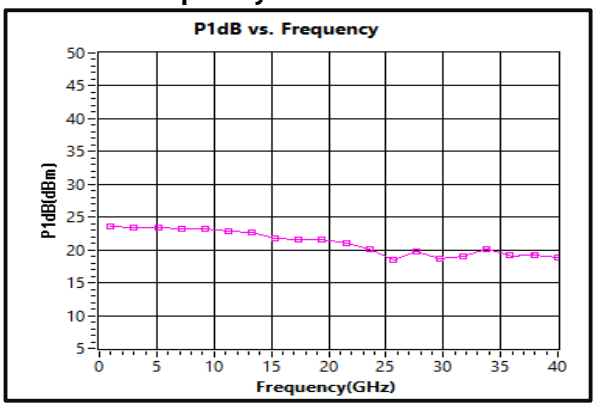
S-Parameters



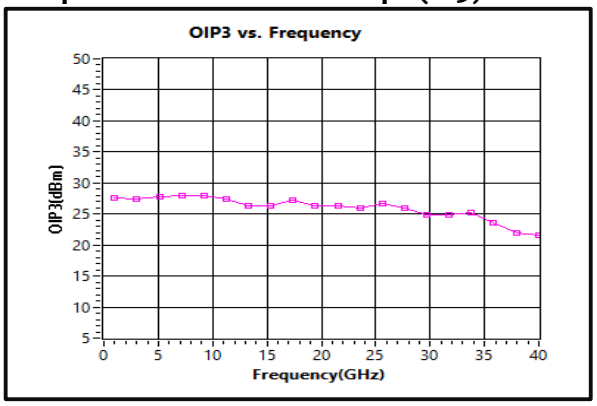
Gain vs. Output Power



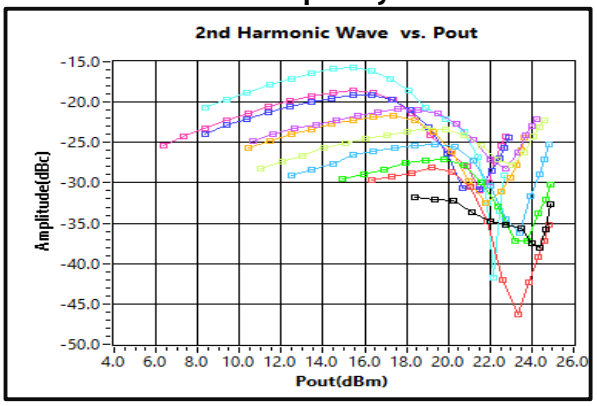
P1dB vs. Frequency



Output Third Order Intercept (IP3)

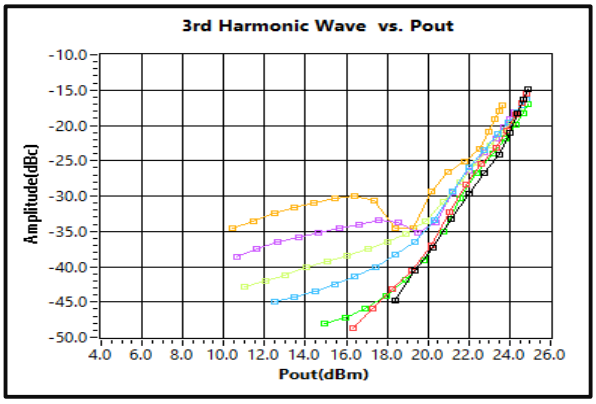


2nd Harmonic vs. Frequency

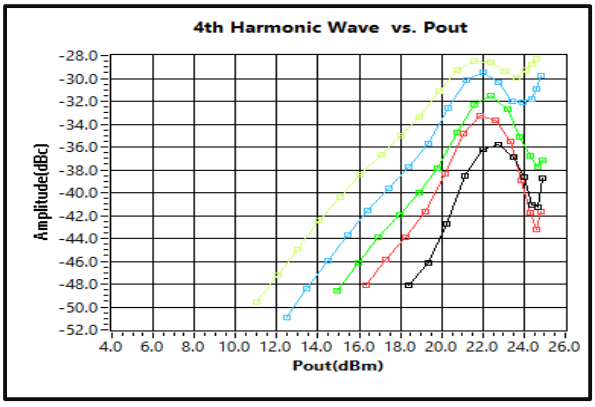


RF-LAMBDA INC. www.rflambda.com
Sales: sales@rflambda.com Technical : support@rflambda.com

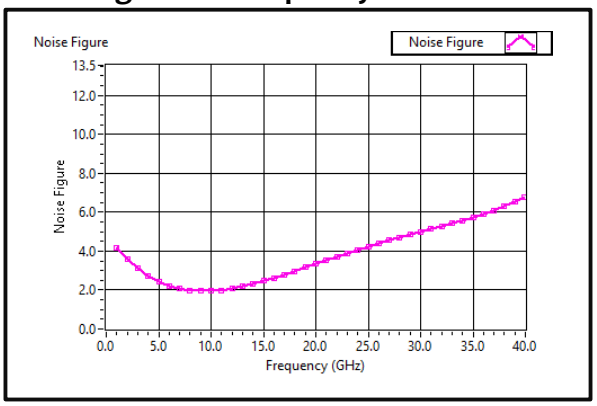
3rd Harmonic vs. Frequency



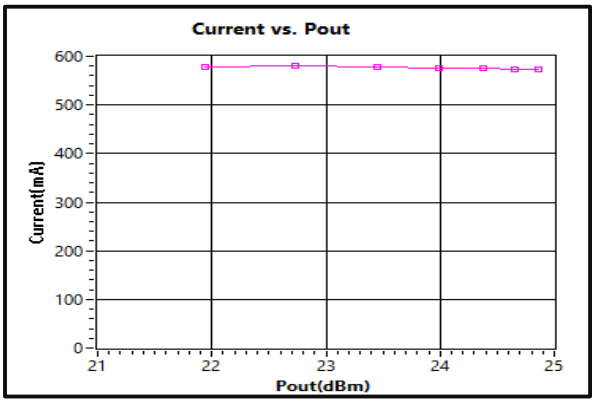
4th Harmonic vs. Frequency



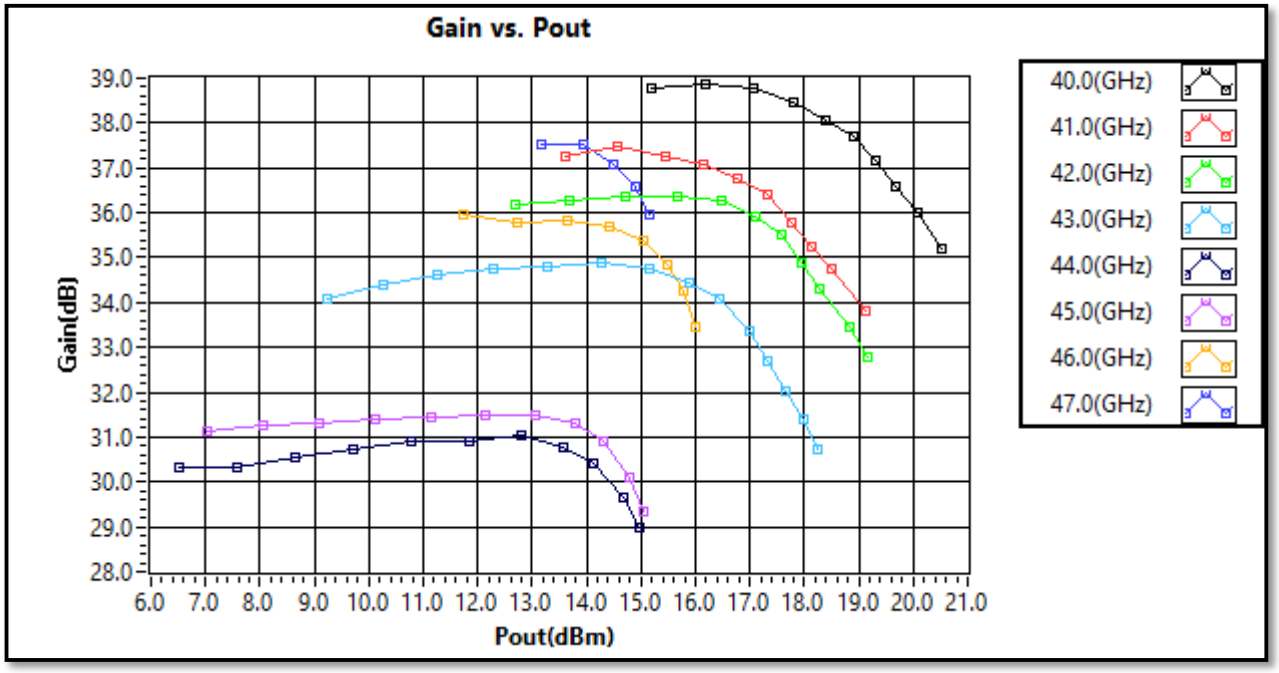
Noise Figure vs. Frequency



Current vs. Pout



Gain vs. Pout



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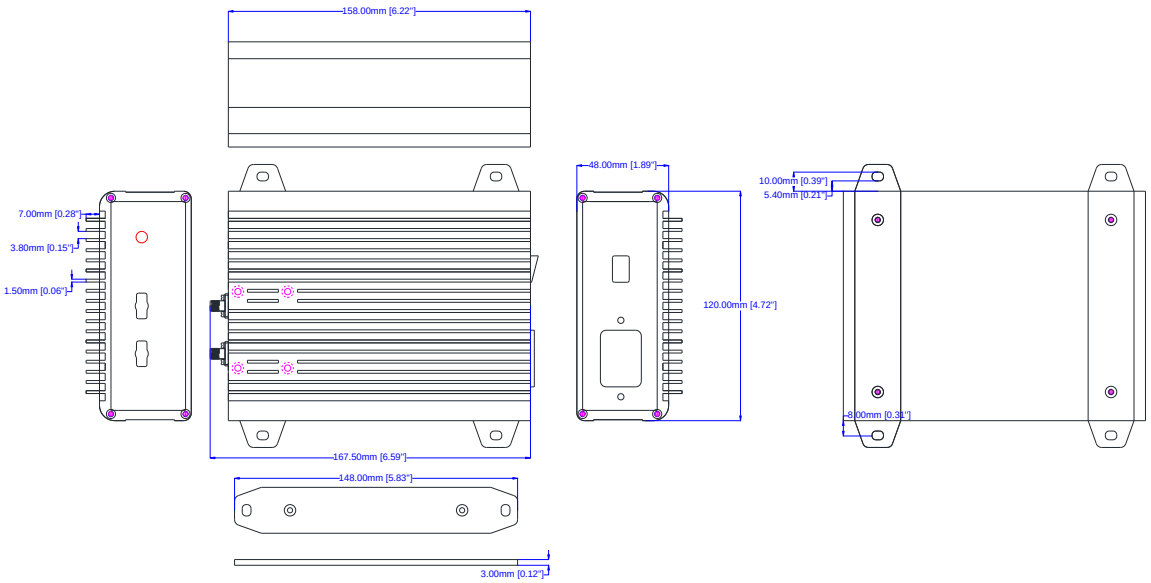
Outline Drawing:

All Dimensions in mm [inches]



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