Ultra Wide Band Low Noise Amplifier
0.01GHz~30GHz

RoHS Compliant

Features

- Gain: 36dB Typical
- Noise Figure: 3.5dB Typical
- P1dB Output Power: 28dBm Typical
- Supply Voltage: AC110V~220V

Typical Applications

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

Electrical Specifications, TA = +25°C

Parameter	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.01		15	15		25	25		30	GHz
Gain	35	40		35	37		32	35		dB
Gain Flatness		±2.0	±3.0		±1.0	±2.0		±1.0	±2.0	dB
Gain Variation Over Temperature (-45 to +85)		±1.0			±1.0			±1.5		dB
Noise Figure		3.5	5.5		3.5	5.5		4.0	5.5	dB
Input VSWR		1.4	1.8		1.4	2.0		1.6	2.0	: 1
Output VSWR		1.5	2.2		1.3	1.8		1.5	2.2	: 1
1dB Point Compression (P1dB)	25	28		23	25		20	23		dBm
Saturated Output Power (Psat)		31			26			24		dBm
Output Third Order Intercept (IP3)		33			30			28		dBm
Supply Current		500	650		500	650		500	650	mA
Isolation S12		-85			-80			-70		dB
Weight	38.45									ounces
Impedance	50									Ohms
Input / Output Connectors	2.92mm-Female									
Finish	Black Paint									
Material	Aluminum									

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Absolute Maximum Ratings	
Operating Voltage	AC110~220V
RF Input Power	-6dBm

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.

Biasing Up Procedure	
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect AC110~220V biasing
Power OFF Procedure	
Step 1	Turn AC110~220V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ 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)

Ordering Information	
Part No.	Description
RAMP00G30GA	0.01-30GHz AC–Low Noise Amplifier

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.

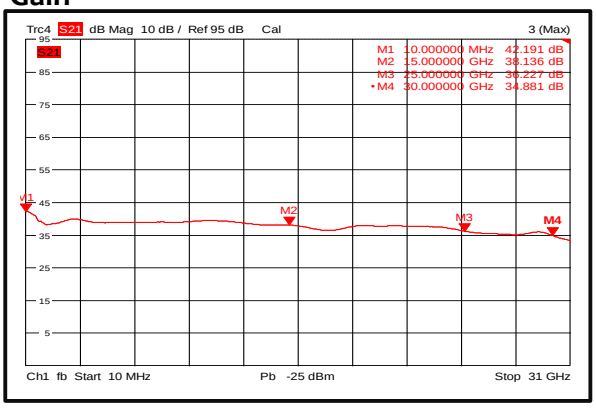
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

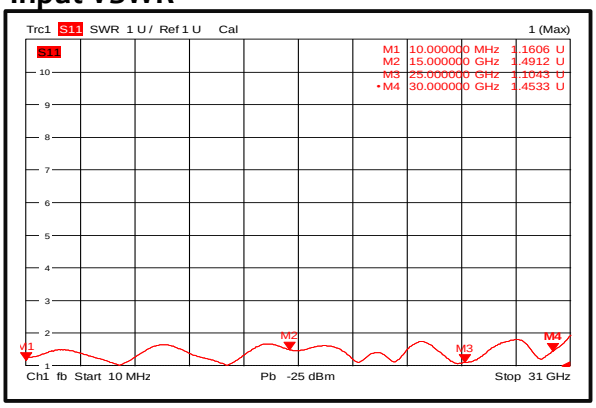
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Typical Performance Plots

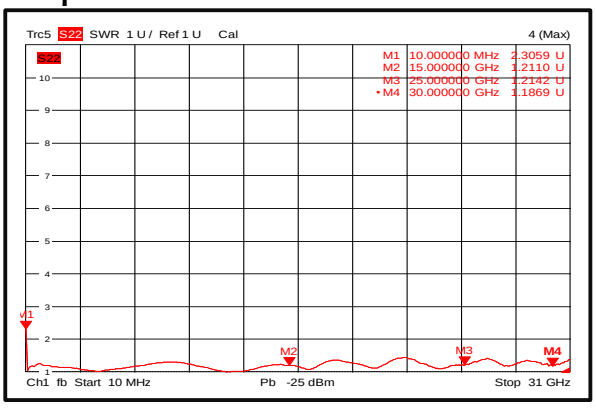
Gain



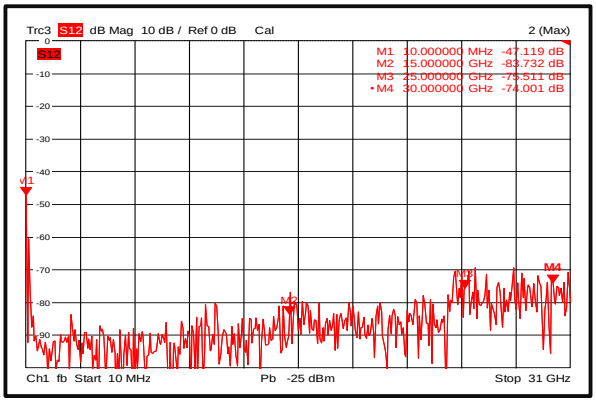
Input VSWR



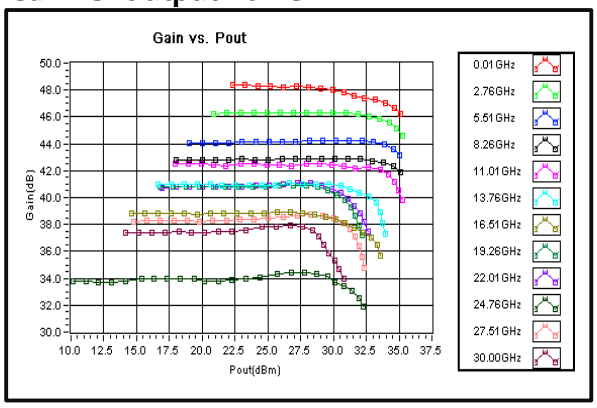
Output VSWR



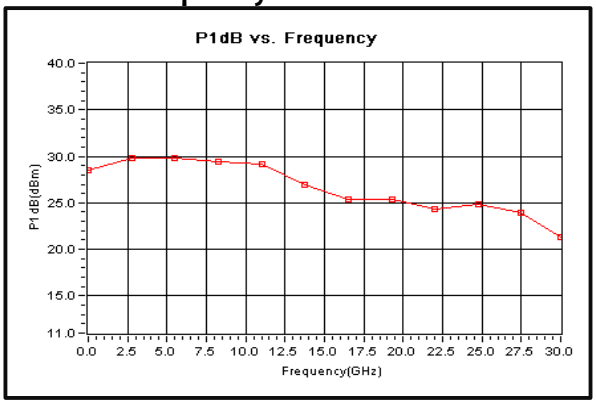
Isolation



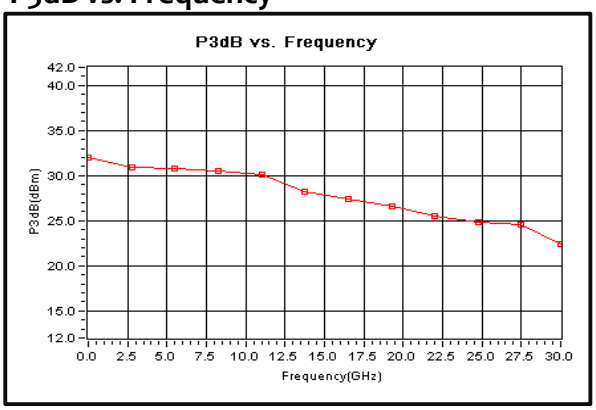
Gain vs. Output Power



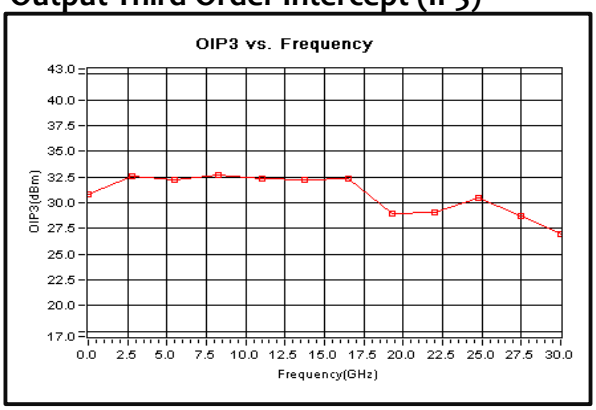
P1dB vs. Frequency



P3dB vs. Frequency



Output Third Order Intercept (IP3)



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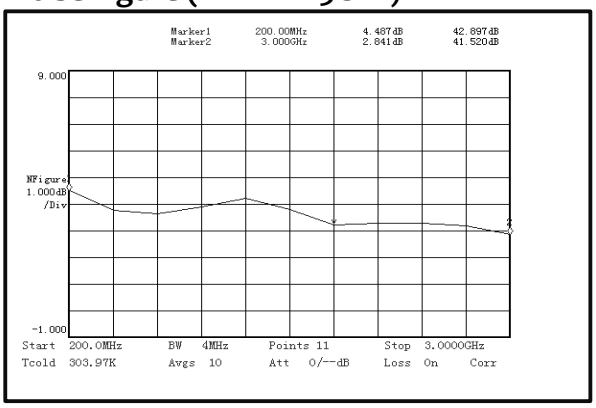
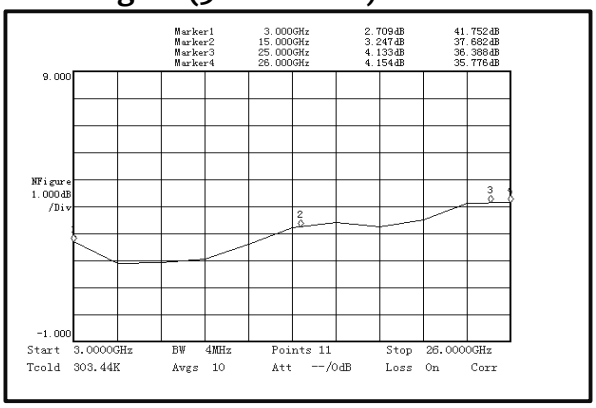
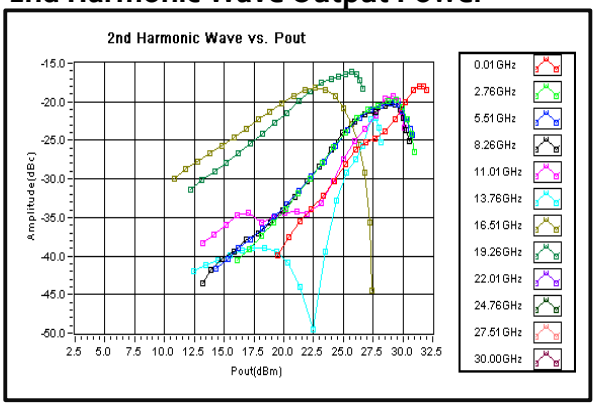
Noise Figure (200MHz-3GHz)



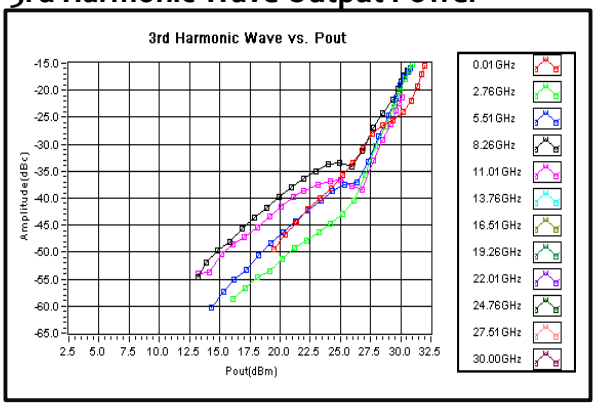
Noise Figure (3GHz-26GHz)



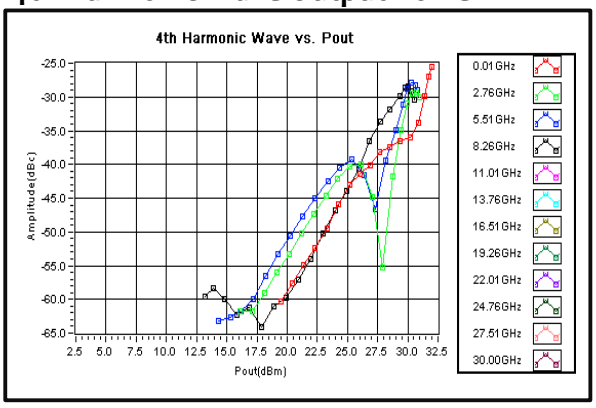
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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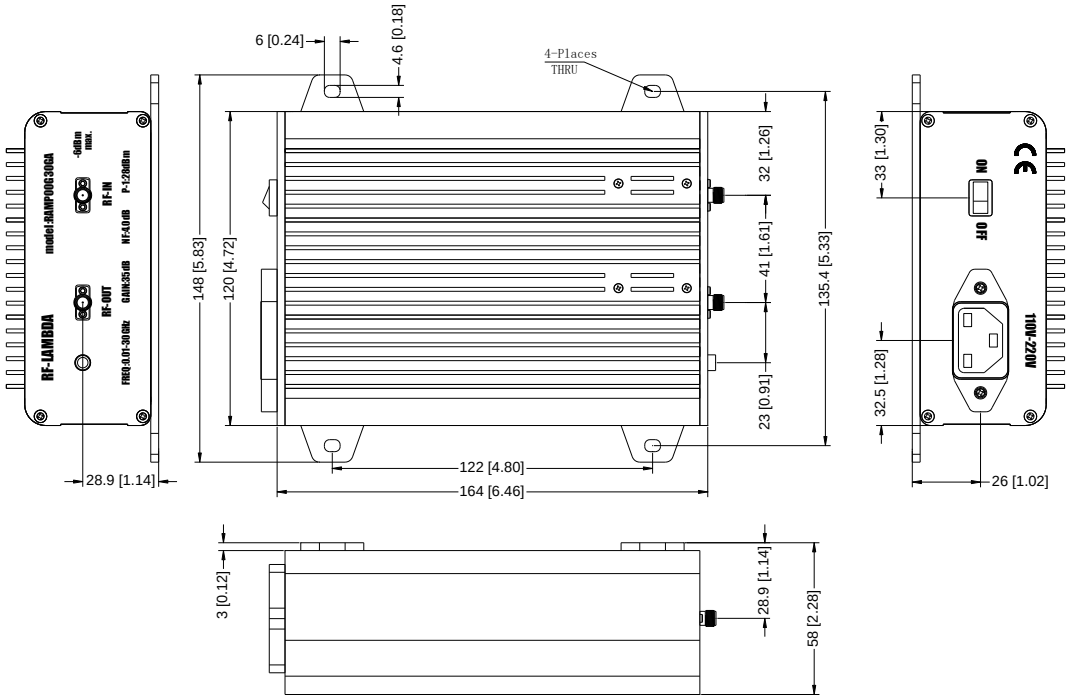
Outline Drawing:

All Dimensions in mm [inches]



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