Wide Band RF Benchtop AC Amplifier
0.01GHz~45GHz

Features

- Low Noise Figure 4.0dB Typical.
- Output power > 24dBm.
- High Output P1dB > 19dBm full band.
- Convenient A/C input.

RoHS Compliant

Typical Applications

- Telecom Infrastructure Applications.
- Aerospace and Military Applications.
- Test and Measurement.

Electrical Specifications, T_A=25 ℃

Parameter	Typical						Units
Frequency Range	0.01 ~ 20			20 ~ 45			GHz
Gain		33			31		dB
Gain Variation Over Temperature		0.5			0.5		dB
Noise Figure		4.5			5		dB
Input VSWR		1.35			1.55		: 1
Output VSWR		1.38			1.38		: 1
Output 1dB Compression Point (P1dB)		23.5			18		dBm
Saturated Output Power (Psat)		24			20		dBm
Output Third Order Intercept (IP3)		30			27		dBm
Power Supply 110 VAC / 220V AC		110/220			110/220		V
Isolation S12		70			57		dB
Maximum Input Power	P1dB - Gain			P1dB - Gain			dBm
Weight	1035						g
Impedance	50						Ohms
Input / Output Connectors	2.92 – Female						
Finish	Black Paint						
Material	Aluminum / Copper						

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Absolute Maximum Ratings	
Supply Voltage	240 VAC
RF Input Power	Psat - Gain
Storage Temperature (°C)	-50 to +125

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 power of the amplifier. Please reference gain and power curves and monitor the temperature.

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℃~+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)

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Ordering Information	
Part Number	**Description**
RAMP00M45GA	**Wide Band RF Benchtop AC Amplifier 0.01 - 45GHz**

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.

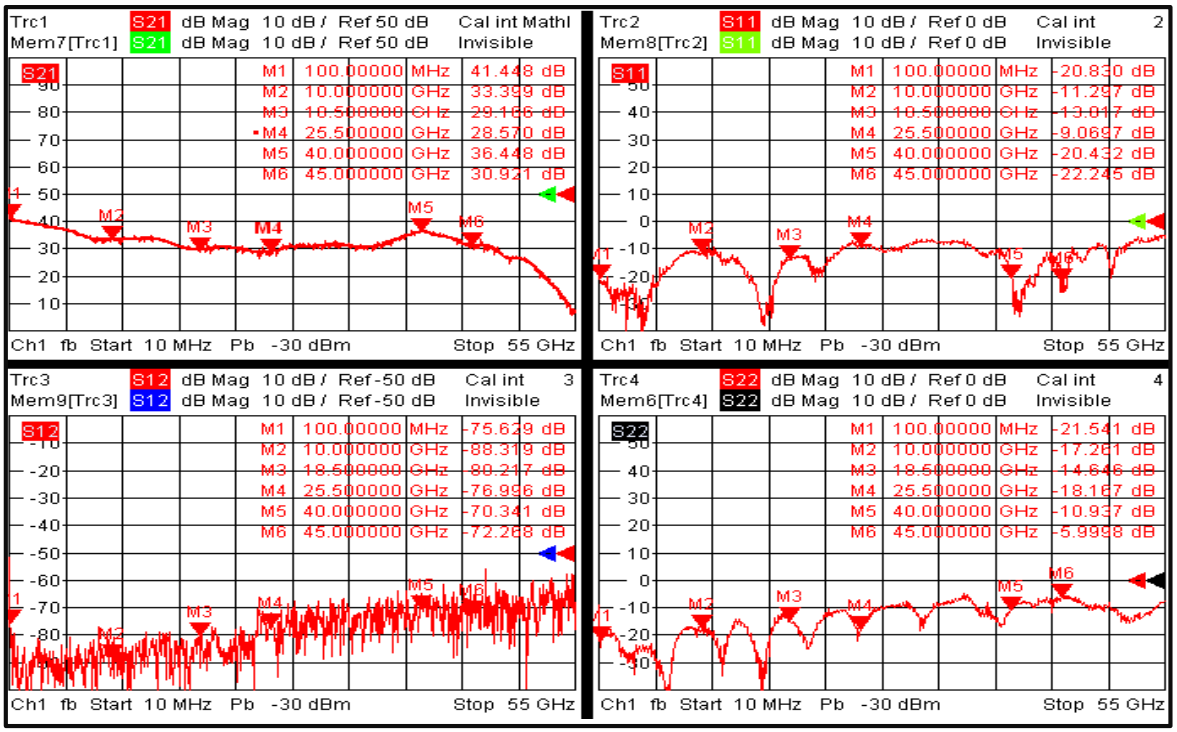
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

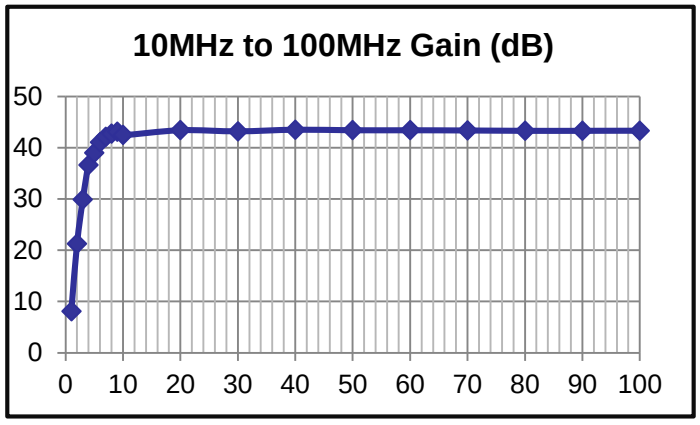
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

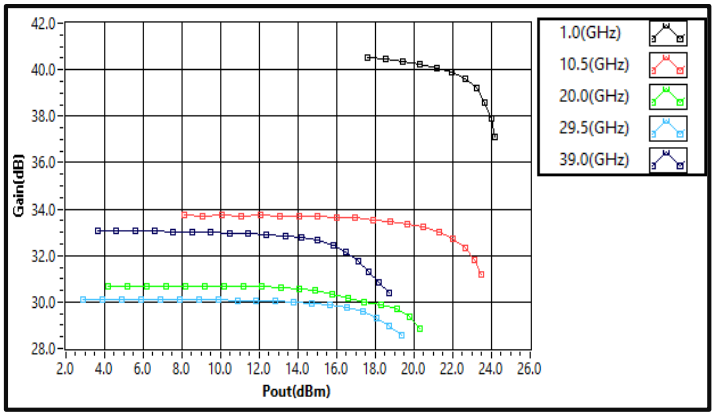
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Wideband S-Parameters

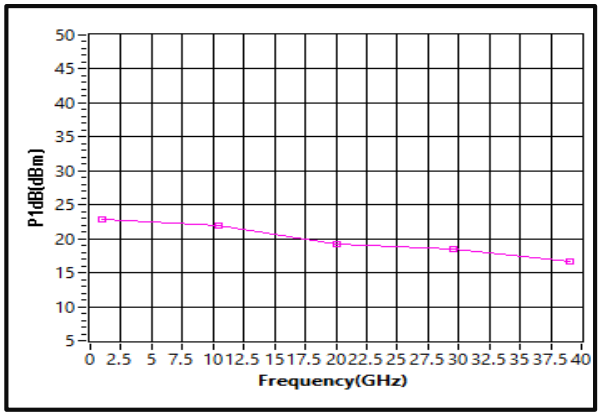




Gain vs. Output Power



P1dB vs. Frequency



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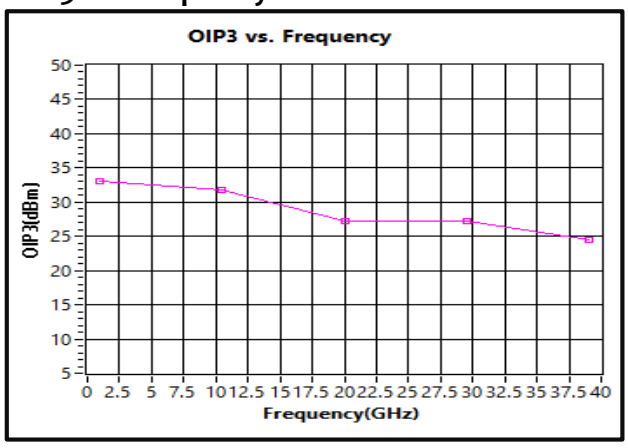
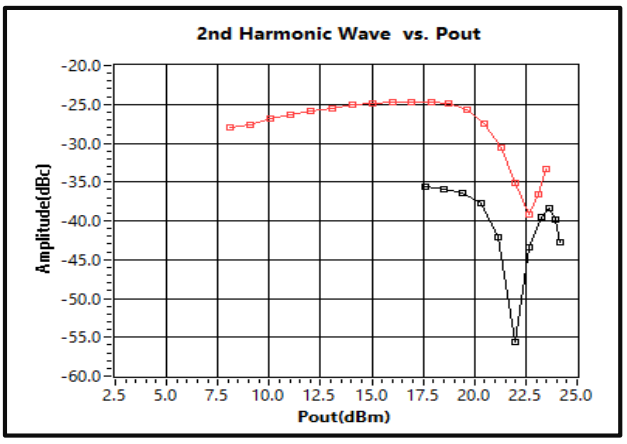
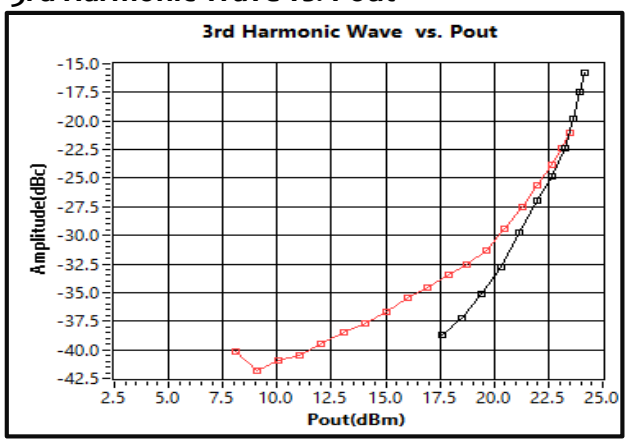
OIP3 vs. Frequency



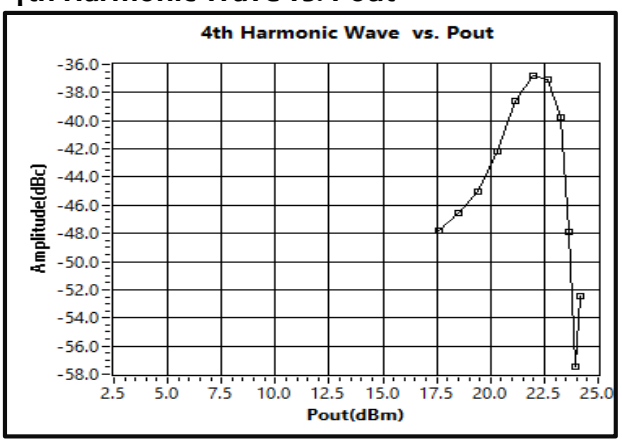
2nd Harmonic Wave vs. Pout



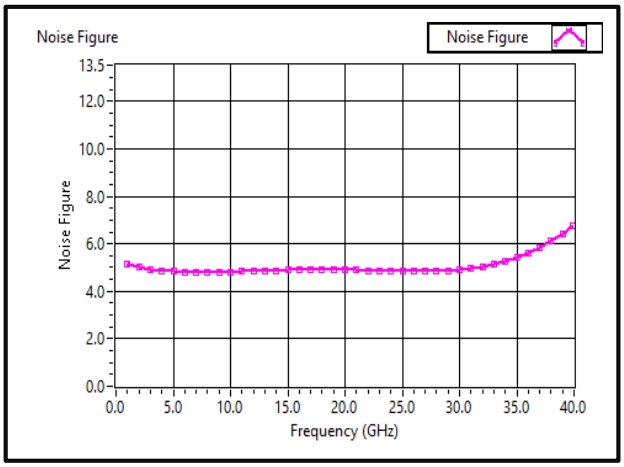
3rd Harmonic Wave vs. Pout



4th Harmonic Wave vs. Pout



Noise Figure vs. Frequency



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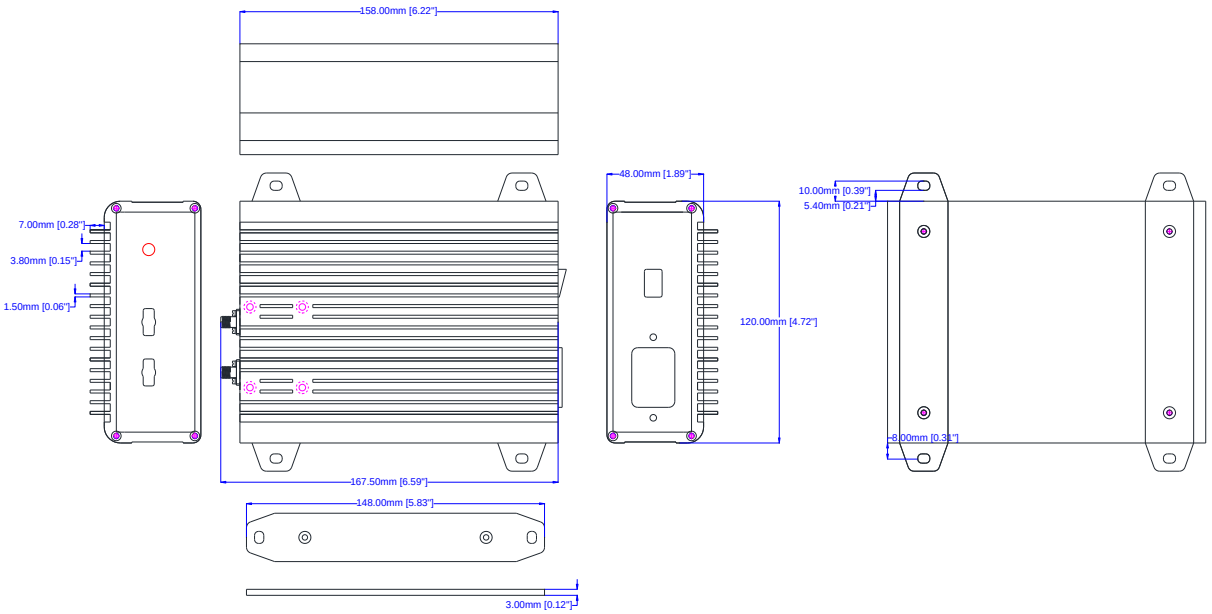
Outline Drawing:

All Dimensions in mm [inches]



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