



RF-LAMBDA

The power beyond expectations

RAMP39G48GA

AC 110V/220V 2W Q Band Power Amplifier 39GHz~48GHz



Features

- Wideband Solid State Power Amplifier
- Gain: 35dB Typical
- Psat: +31dBm Typical
- Convenient A/C Power supply

Typical Applications

- Military & Defense Applications
- Wireless Infrastructure
- Test and Measurement

Parameter	Typical	Units
Frequency Range	39~48	GHz
Gain	35	dB
Input Return Loss	-25	dB
Output Return Loss	-20	dB
Saturated Power (Psat)	31	dBm
Power Supply (AC)	110/220	V
Isolation S12	65	dB
Maximum Input Power	Psat - Gain	dBm
Weight	7600	g
Impedance	50	Ohms
Input / Output Connectors	2.4mm-Female	
Finish	Black Paint	
Material	Aluminum / Copper	

AC 110V/220V 2W Power Amplifier 39GHz~48GHz



Absolute Maximum Ratings	
Supply Voltage	+230VAC
RF Input Power	Psat – Gain

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 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~+55°C (Case Temperature less than 85C)
Storage Temperature		-50°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	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)

Note: The operating temperature for the unit is specified at the package base. It is the user's responsibility to ensure the part is in an environment capable of maintaining the temperature within the specified limits



Ordering Information	
Part No.	Description
RAMP39G48GA	Wide Band Power Amplifier 39 – 48 GHz

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.



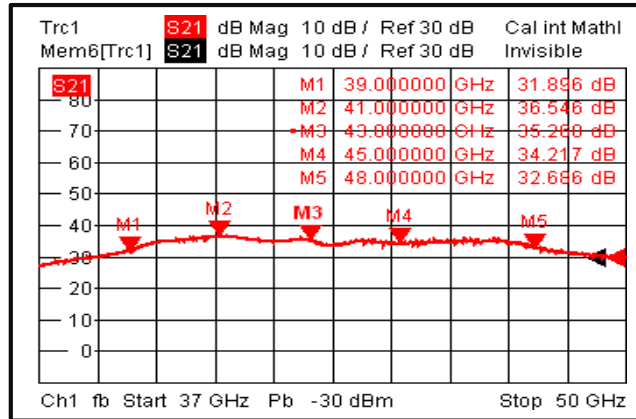
RF-LAMBDA

The power beyond expectations

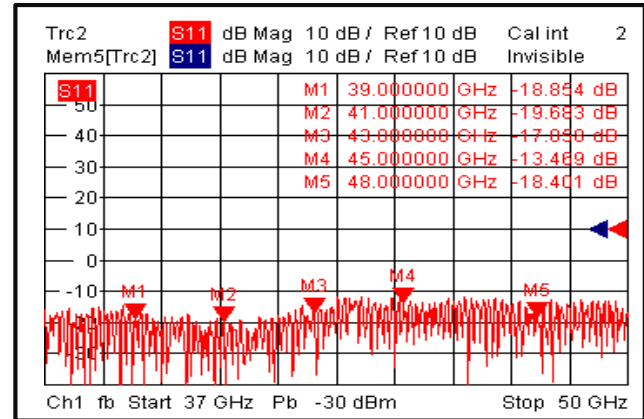
RAMP39G48GA

Typical Performance Plots

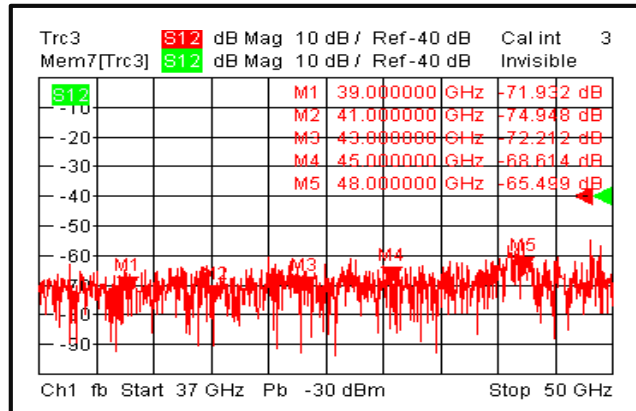
Gain



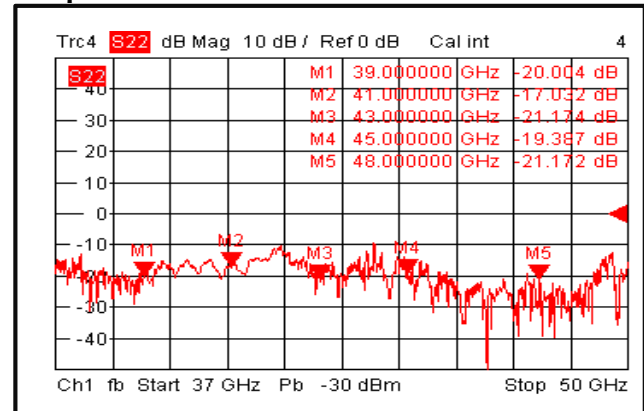
Input Return Loss



Isolation



Output Return Loss



Note: Input/output return loss measurements include attenuators to protect equipment

AC 110V/220V 2W Power Amplifier 39GHz~48GHz

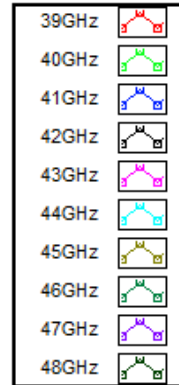
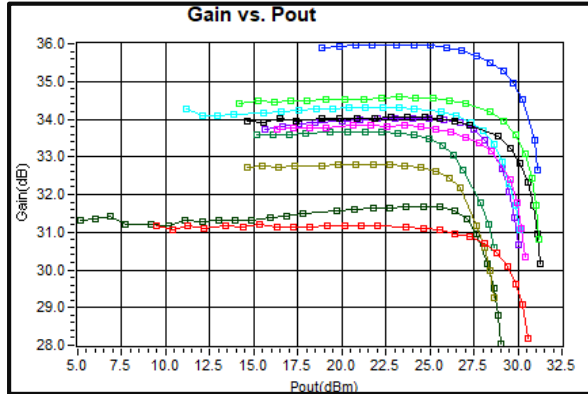


RF-LAMBDA

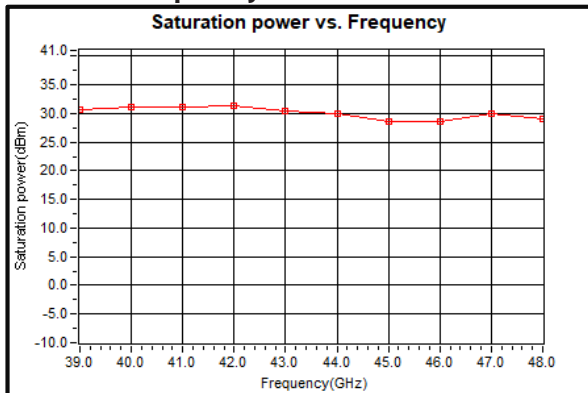
The power beyond expectations

RAMP39G48GA

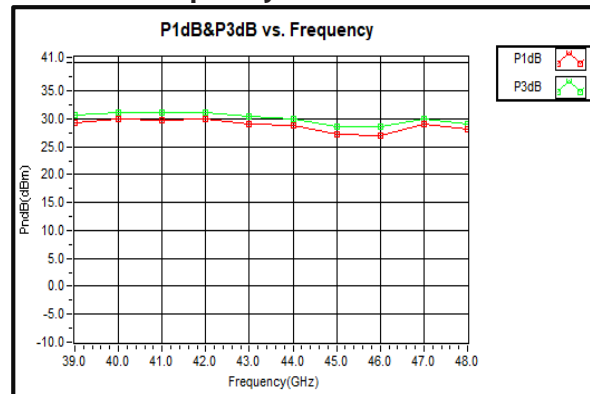
Gain vs. Output Power



Psat vs. Frequency



PxdB vs. Frequency



AC 110V/220V 2W Power Amplifier 39GHz~48GHz



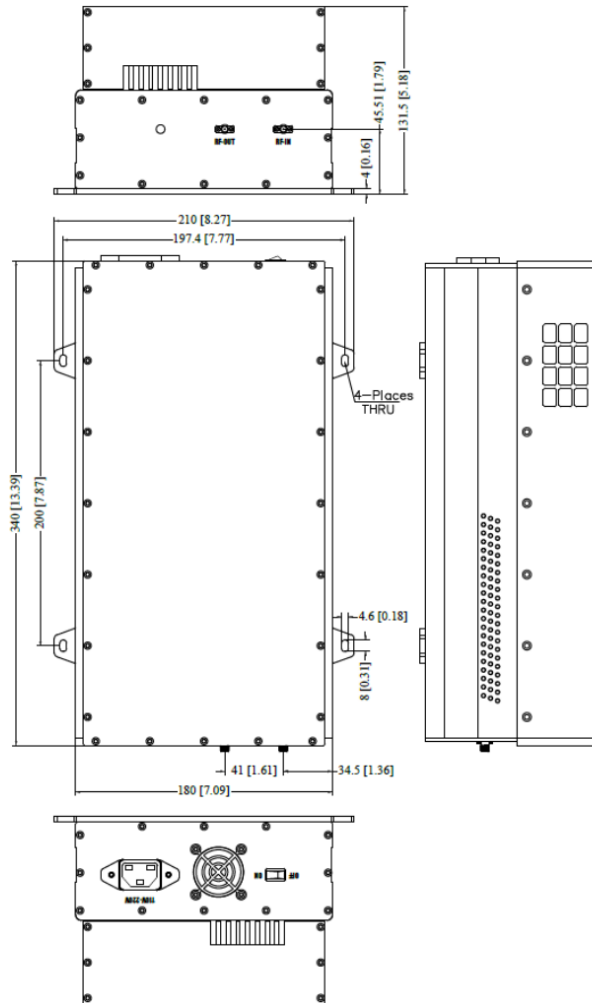
RF-LAMBDA

The power beyond expectations

RAMP39G48GA

Outline Drawing :

All Dimensions in mm [inches]



Includes current protection and over temp shutdown protection



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.