

Ultra Wide Band AC Power Amplifier 20 - 54GHz



Note: The photo is for illustration purposes only.
Please refer to outline drawing

Key Features

- Ultra Wide Band AC Power Amplifier
- Frequency Range 20-54GHz
- Output Power 30dBm Typical
- Noise Figure 7dB

Typical Applications

- Wireless Infrastructure
- Military and Aerospace
- Test and Measurement
- Radar and Satellite
- 5G LTE Communications

Electrical Specifications, TA =+25°C

Description	RFLUPA20G54GA						
	Ultra Wide Band Power Amplifier						
Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	20-40			40-54			GHz
Gain		50			50		dB
Gain Variation Over Temperature		±3			±3		dB
Noise Figure		7			6		dB
Input Return Loss		15			15		: 1
Output Return Loss		19			15		: 1
Output 1dB Compression Point (P1dB)		28			26		dBm
Saturated Output Power (Psat)		30			27		dBm
Output Third Order Intercept (IP3)		38			36		dBm
Power Supply	110/220						V
Isolation S12		60			60		dB
Maximum Input Power	Psat - Gain			Psat - Gain			dBm
Weight	4600						g
Impedance	50						Ohms
Input / Output Connectors	2.4mm – Female						
Finish	Black Paint						
Material	Aluminum / Copper						
Environmental Seal	Epoxy (Standard) Hermetic (Optional)						

Absolute Maximum Ratings

Parameter	Value
Biasing	+240VAC
RF Input Power	Psat – Gain Sat

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.

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +55°C (Case Temperature less than 85°C)
Storage Temperature	-50°C to +125°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High 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 (For Hermetically Sealed Units)

Ordering Information

Part Number	Description
RAMP20G54GA	Ultra Wide Band AC Power 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.

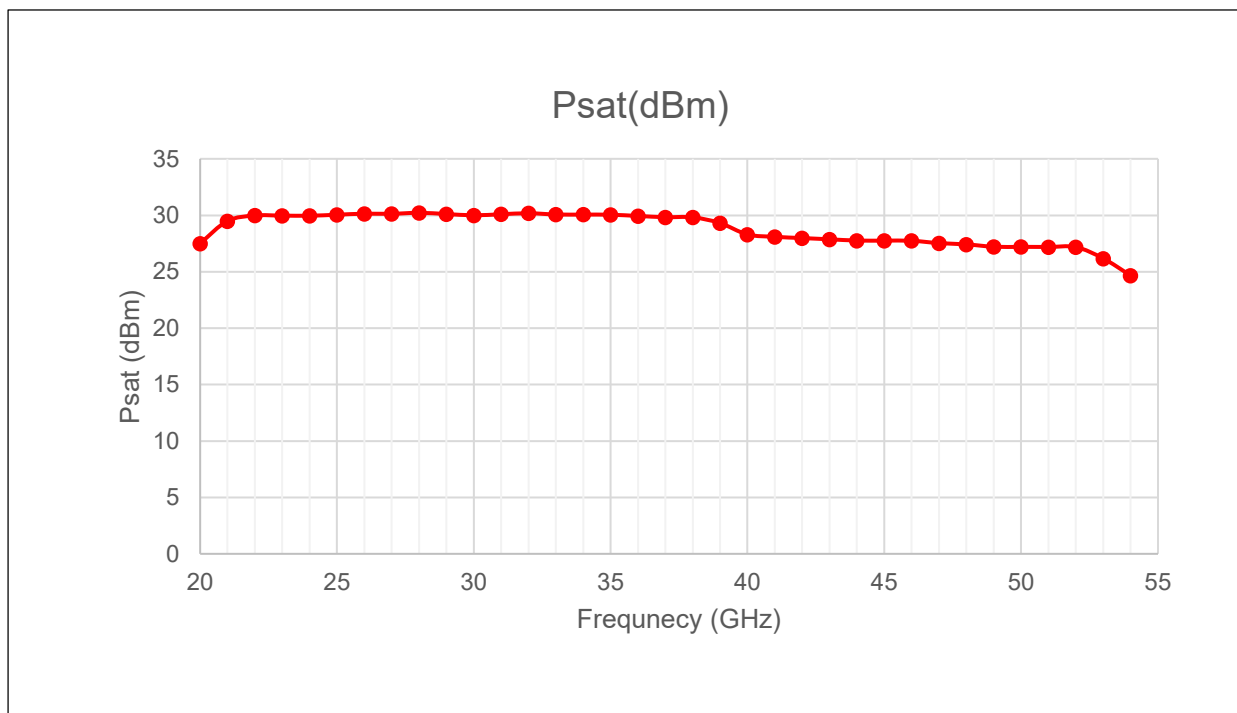
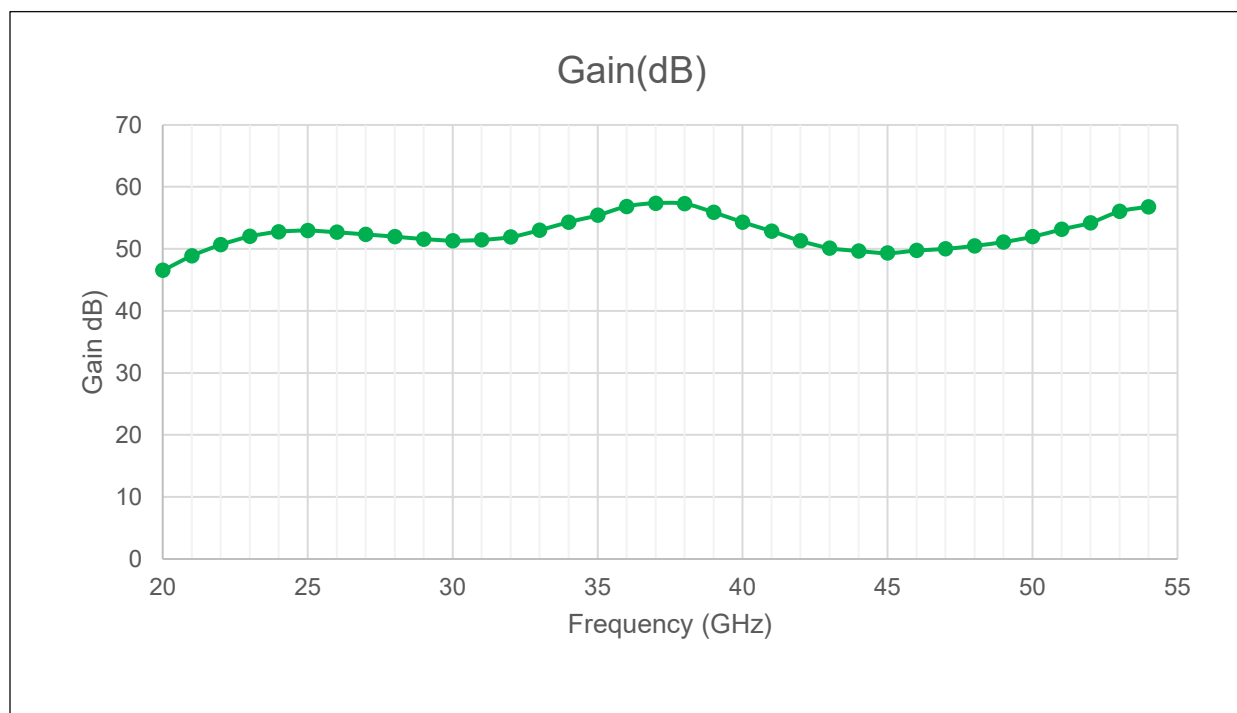
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

What is not covered with warranty?

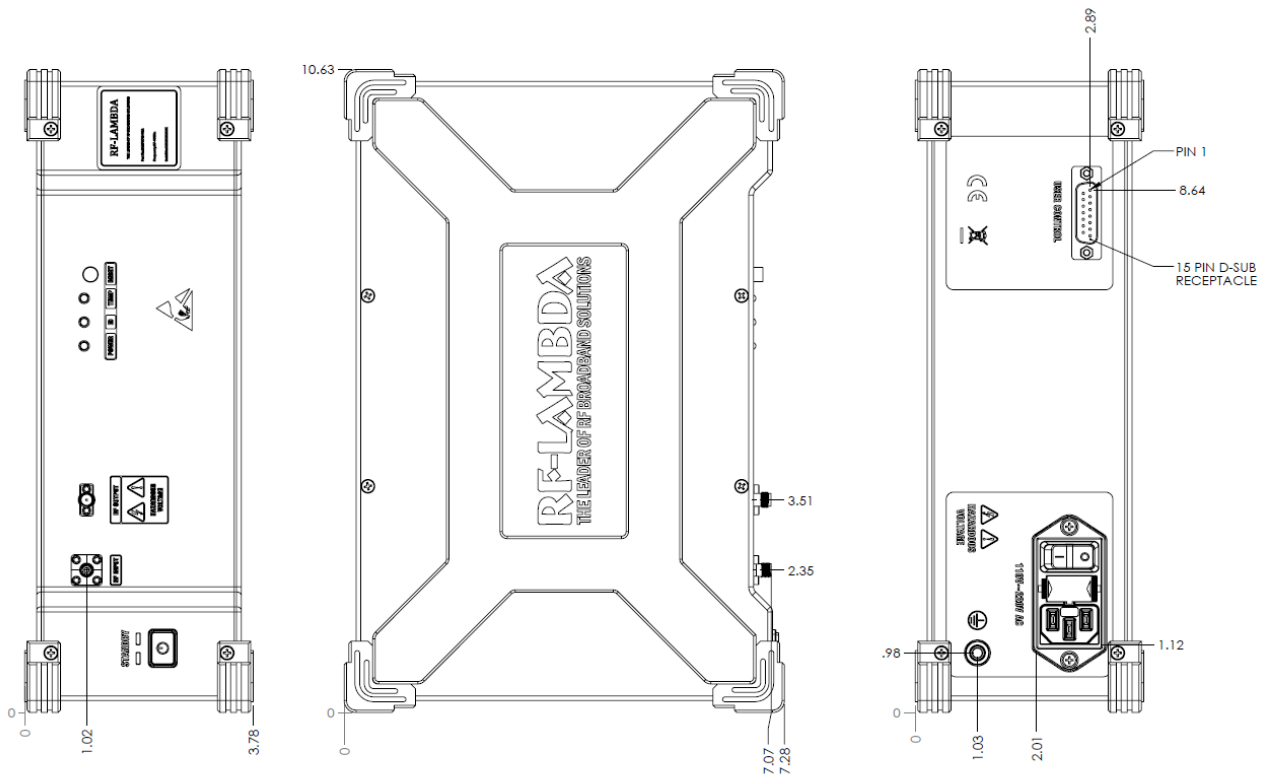
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Typical Performance Plots



Outline Drawing

All Dimensions in mm [inches]



Notes:
Standard torque wrench must be used to secure RF connectors.



Important Notice

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