

AC-Low Noise Amplifier 40 - 60GHz



Features

- High Output Power 22dBm Typical.
- High peak to average handling capability.
- High linearity and low noise figure.
- Convenient AC Power Input. (AC 110V/220V)
- Integrated Heat Sink and Fan.

Typical Applications

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

Electrical Specifications, $T_A=25^\circ\text{C}$

Parameters	Min.	Typ.	Max.	Units
Frequency Range	40		60	GHz
Gain		40		dB
Gain Flatness		± 4		dB
Gain Variation Over Temperature (-45 to +85)		-		dB
Noise Figure		8		dB
Input VSWR		2		:1
Output VSWR		2		:1
Output 1dB Compression Point (P1dB)		20		dBm
Saturated Output Power (Psat)		22		dBm
Output Third Order Intercept (OIP3)		28		dBm
Isolation S12		-60		dB
Supply Current (AC=110/220V)	200			mA
Weight	38.45			Ounces
Impedance	50			Ohms
Input /Output Connectors	WR19			
Finish	Black Painted Finish			
Material	Aluminum / Copper			

Absolute Maximum Ratings	
Operating Voltage	AC110~240V
RF Input Power	-10dBm

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.

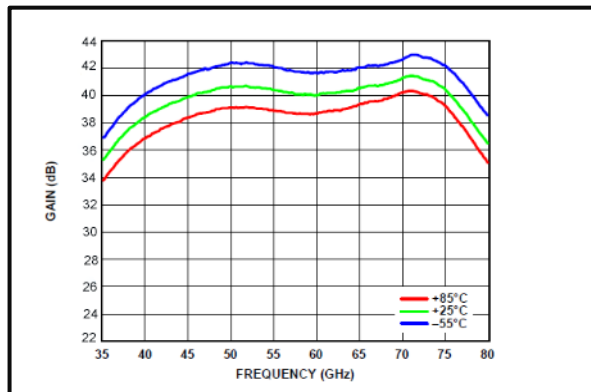
Biasing Procedure	
Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position
Power OFF Procedure	
Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

Environmental Specifications and Test Standards

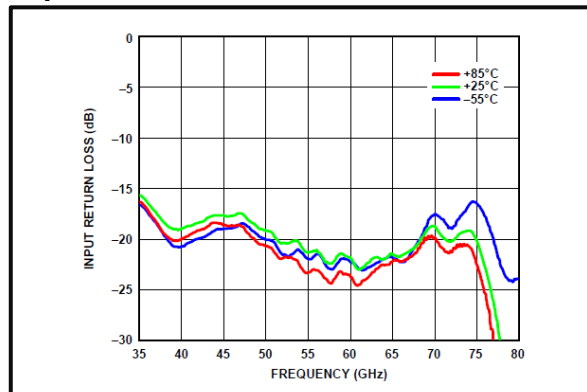
Parameter	Description
Operational Temperature	-45°C~+85°C
Storage Temperature	-55°C~+125°C
Thermal Shock	1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration	Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half 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)

Typical Performance Plots

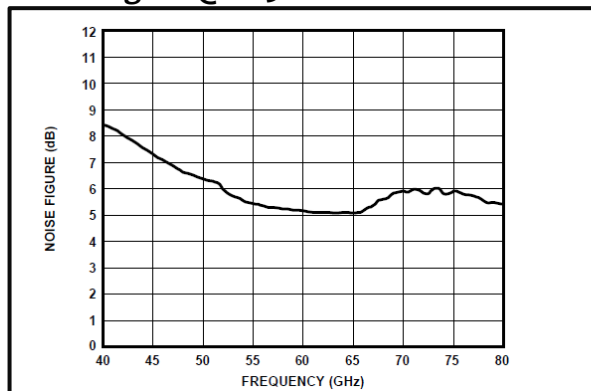
Gain



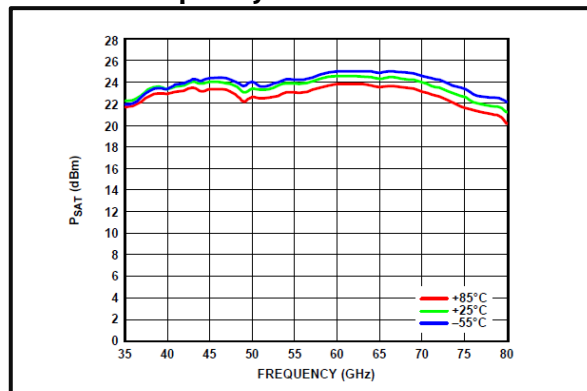
Input Return Loss



Noise Figure @ +25°C



Psat vs. Frequency



Ordering Information

Part No.	Description
RAMP4060GW19A	40-60GHz 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.

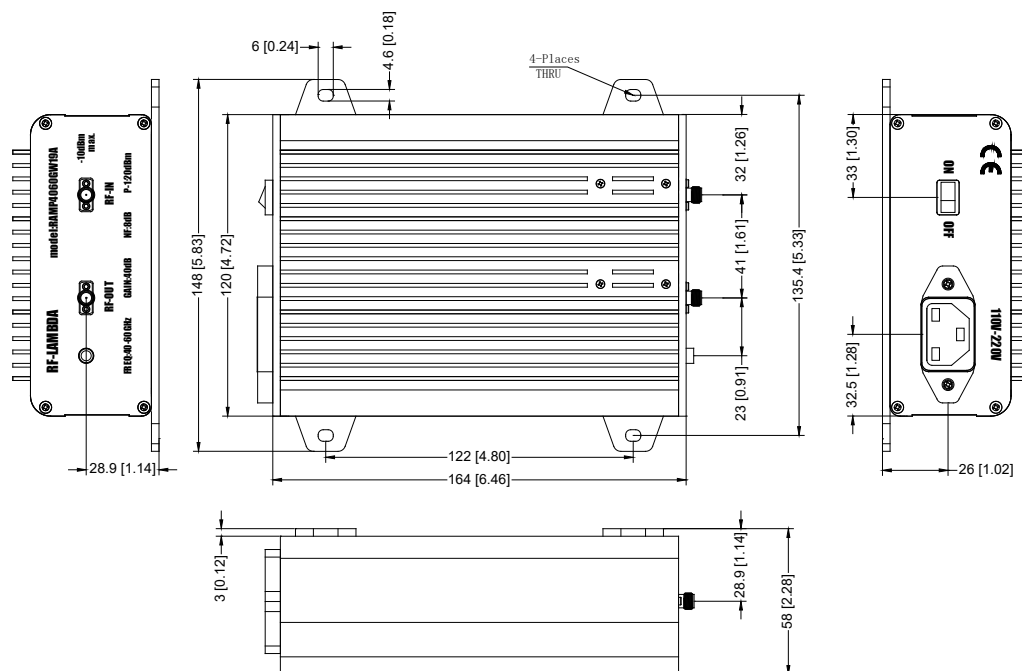
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

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.

Amplifier Outline Drawing:

All Dimensions in mm [inches]



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



Important Notice

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