Ultra Wide Band Low Noise Amplifier
0.5GHz~70GHz

Note: Photo is for illustration only.
Please refer to the outline drawing

Features

- Gain: 28dB Typical
- Noise Figure: +4dB Typical
- P1dB: + 10dBm
- Supply Voltage: +12V
- Connector Type: 1.85mm Female

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, TA = +25 ℃, Vcc = +12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		0.5 ~ 5			6 ~ 40			41 ~ 70		GHz
Gain		35			28			20		dB
Gain Flatness		±2.0			±1.0			±1.0		dB
Gain Variation Over Temperature (-40℃~+85℃)		±1.0			±1.2			±1.5		dB
Noise Figure		4.5			4.3			5		dB
Input VSWR		1.8			1.4			1.5		: 1
Output VSWR		2			1.8			1.8		: 1
Output 1dB Compression Point (P1dB)		10.5			9.1			9		dBm
Saturated Output Power (Psat)		12.5			12.8			11		dBm
Output Third Order Intercept (OIP3)		20.3			20.2			19		dBm
Supply Current		0.2	0.25		0.2	0.25		0.2	0.25	mA
Isolation S12		-70			-50			-30		dB
Weight	125									g
Impedance	50									Ohms
Input / Output Connectors	1.85mm-Female									
Finish	Gold Plated									
Material	Copper									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	Psat – Gain

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +Vcc biasing
Power OFF Procedure	
Step 1	Turn off +Vcc biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°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 No.	**Description**
RLNA05M70GB	**0.5GHz~70GHz 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.

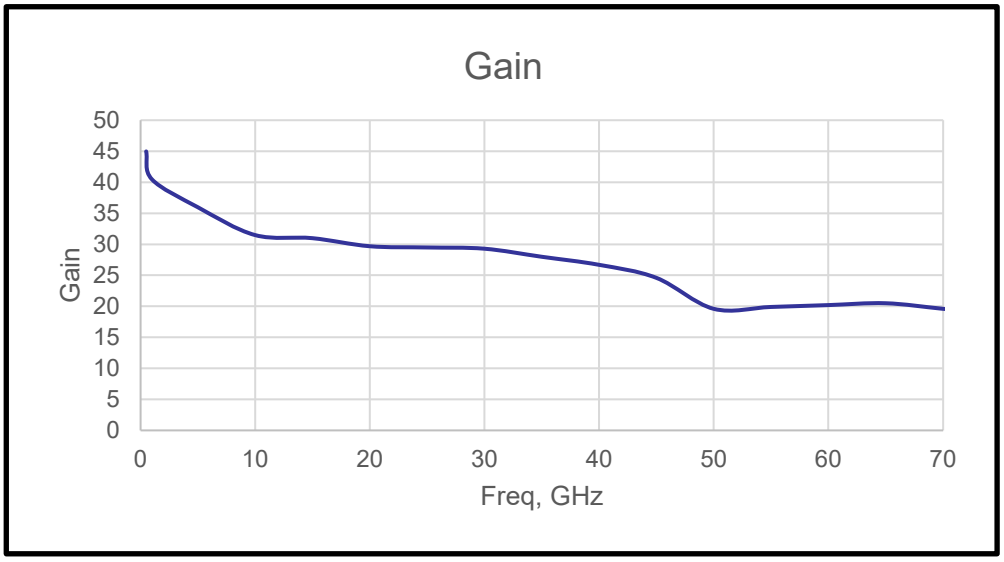
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

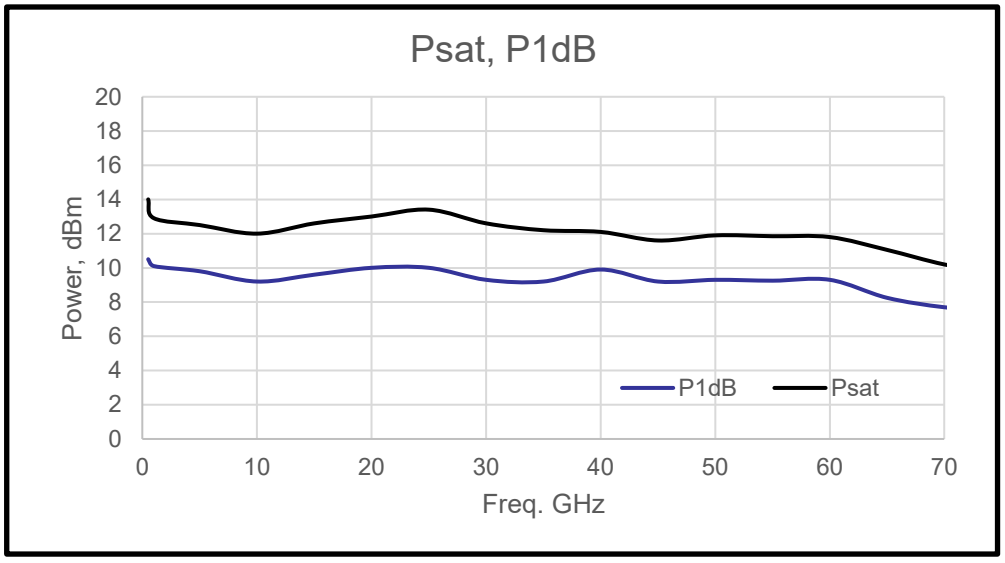
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

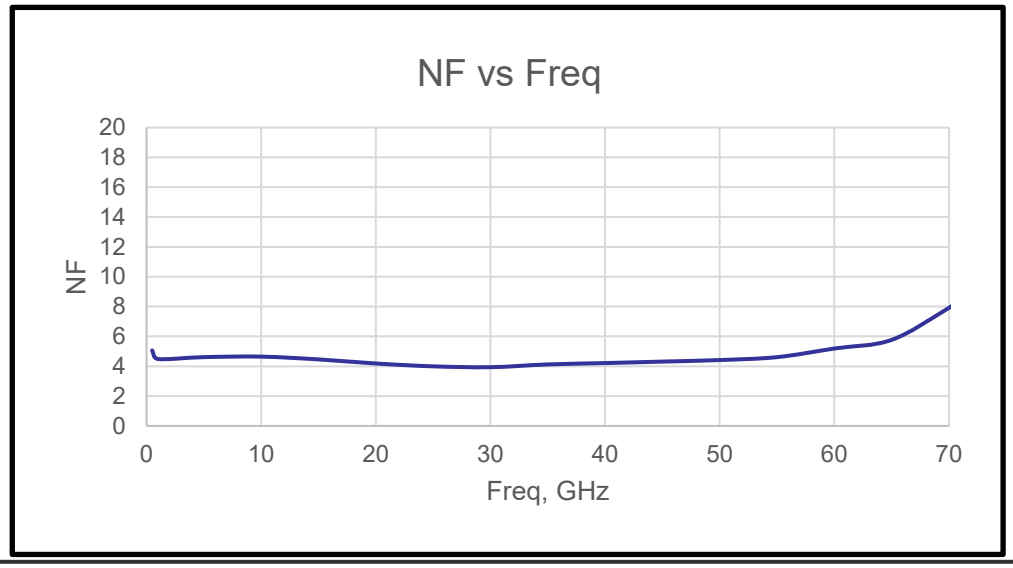
What is not covered with warranty?

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

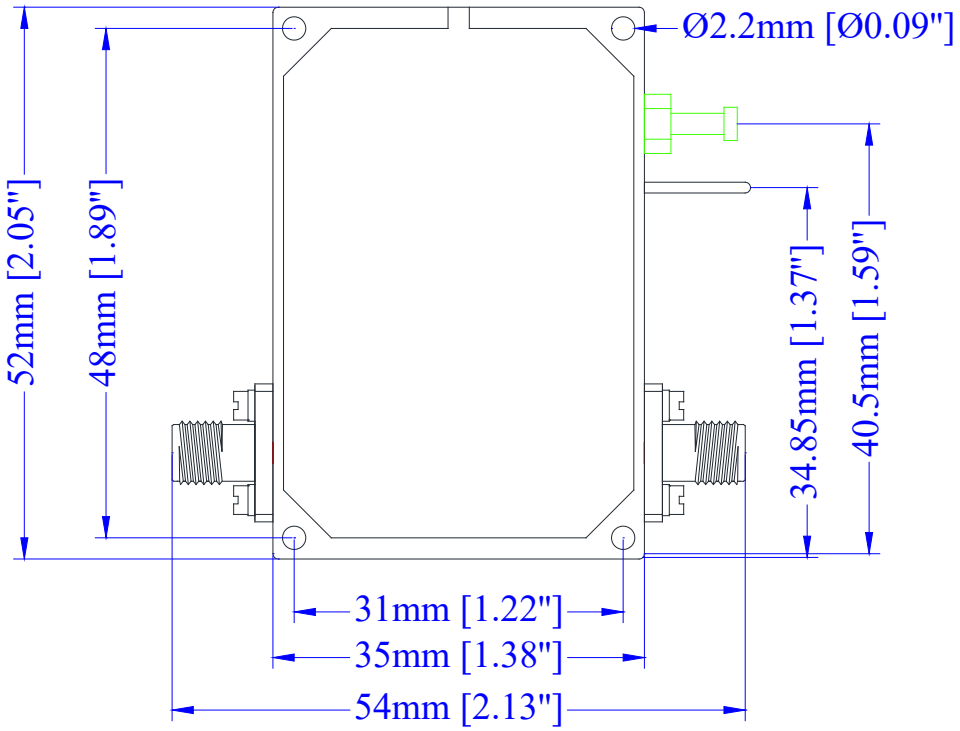






Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Important Notice

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