



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFLUPA01050

2W Wide Band Medium Power Amplifier 10-500MHz



Features

- Gain: 25dB Typical
- P1dB Output Power: 33dBm Typical
- Functional Bandwidth : 10MHz – 1000MHz
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace

Electrical Specifications, $T_A = +25^{\circ}\text{C}$, $V_{CC} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	10		500	500		1000	MHz
Gain	24	26		23	25		dB
Gain Flatness		± 1.0			± 1.0		dB
Gain Variation Over Temperature (-45 ~ +85)		± 1.0			± 1.0		dB
Input VSWR		1.7			1.5		: 1
Output Power for 1 dB Compression (P1dB)	32	33		28	31		dBm
Saturated Output Power (Psat)		36			34		dBm
The 2 nd harmonic @P1dB		-20			-20		dBc
Supply Voltage	10	12		10	12		V
Supply Current ($V_{CC}=+12\text{V}$) Low Voltage Shutdown ($V_{CC}<+8.5\text{V}$)		720	1500		720		mA
Isolation S12		-55			-60		dB
Impedance	50						Ohms
Weight	4.59						ounces
Input / Output Connectors	SMA-Female						
Finish	Nickel Plated						
Material	Copper						
Package Seal	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	+8dBm

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 Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

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Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C (Case Temperature)
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
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		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)



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.

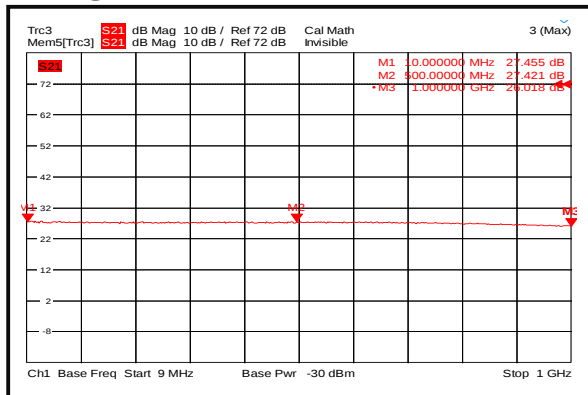
What is not covered with warranty?

Each RF - Lambda amplifier will go through power and temperature stress testing.

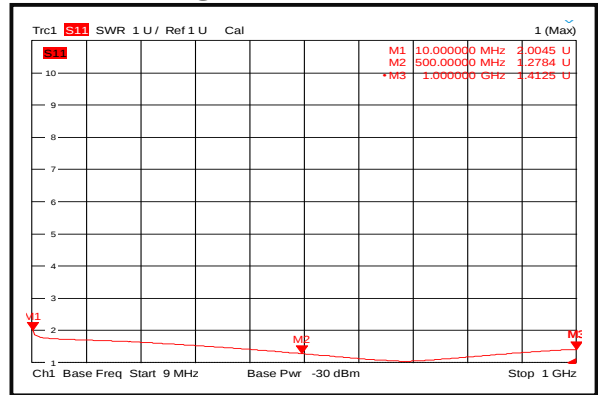
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.



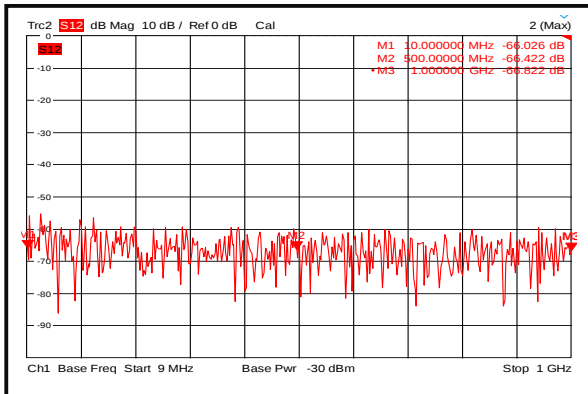
Gain @+25°C



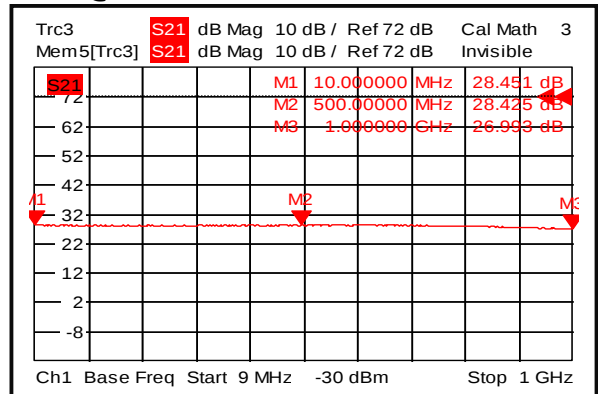
Input VSWR @+25°C



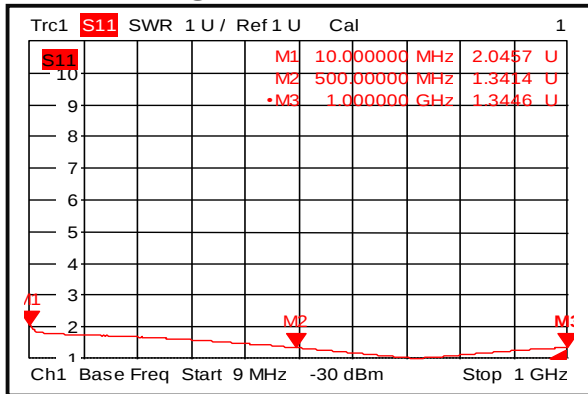
Isolation @+25°C



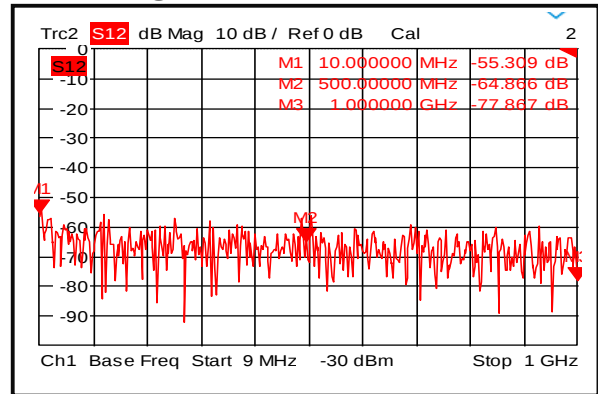
Gain @-45°C



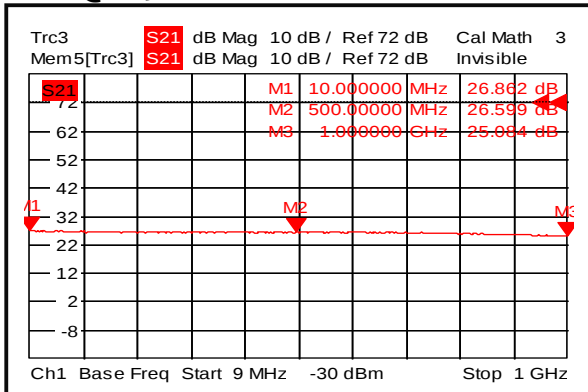
Input VSWR @-45°C



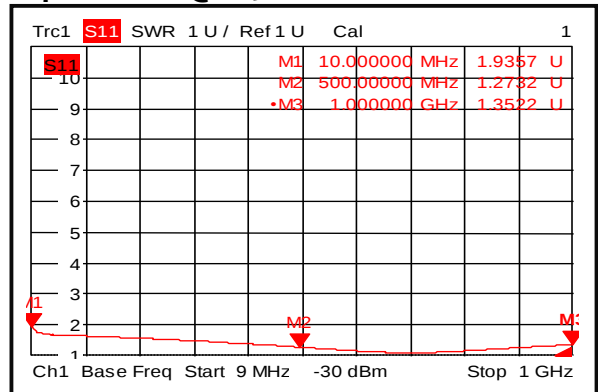
Isolation @-45°C



Gain @+85°C

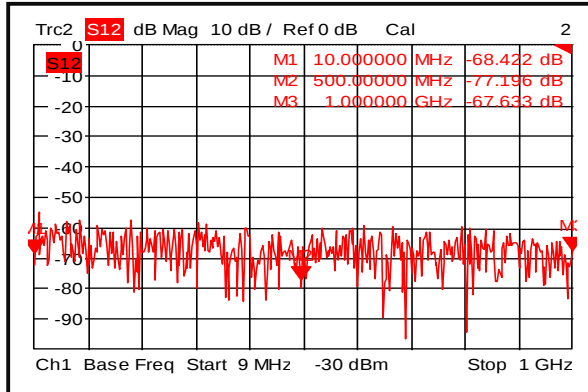


Input VSWR @+85°C

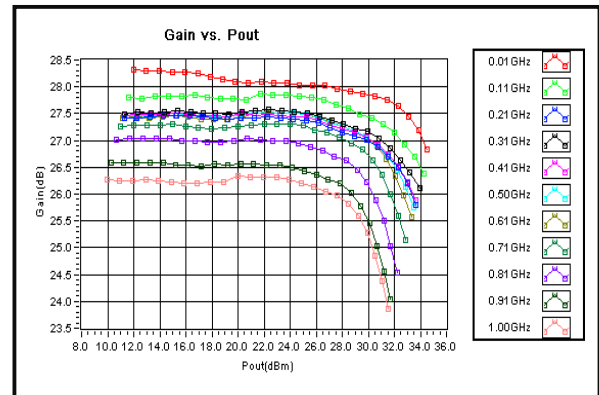




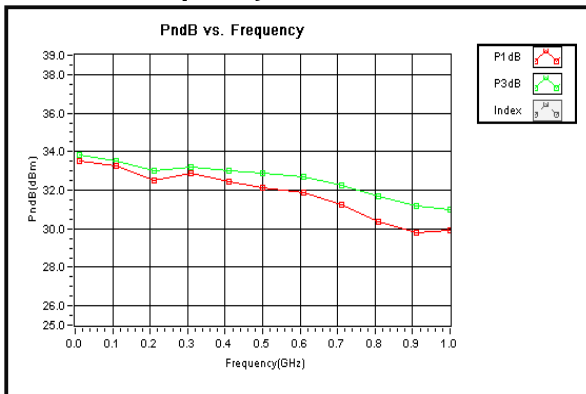
Isolation @+85°C



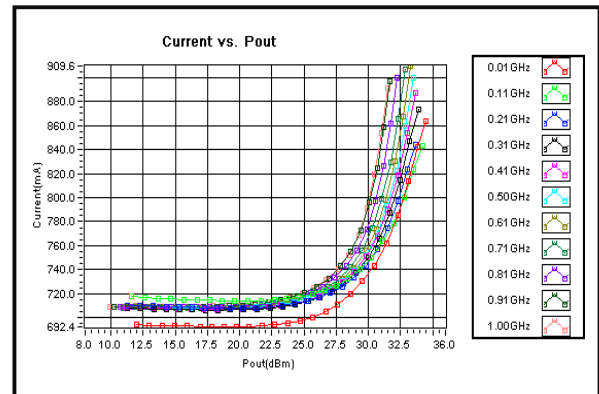
Gain vs. Output Power



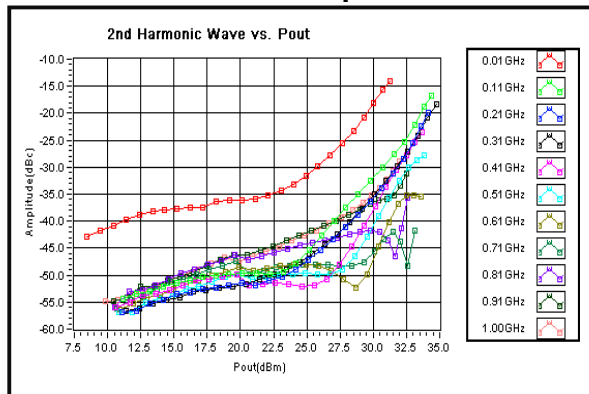
P1dB vs. Frequency



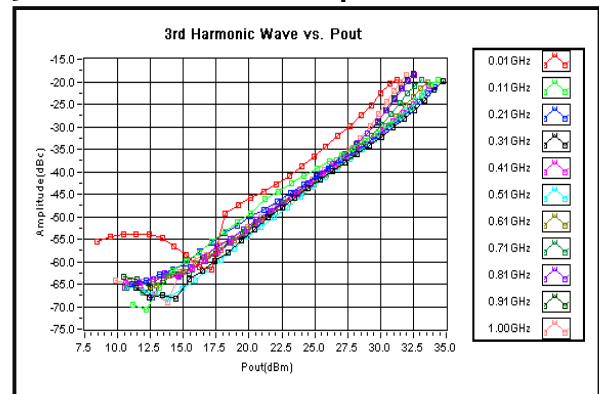
Current



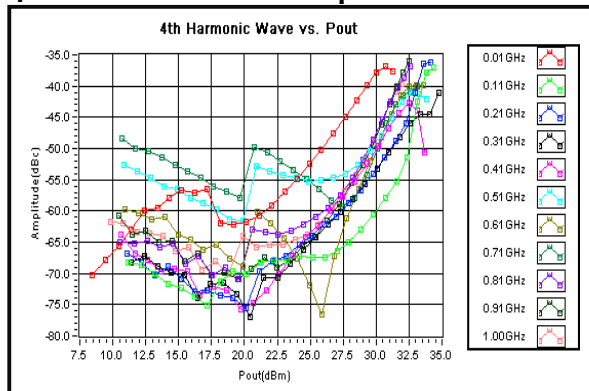
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



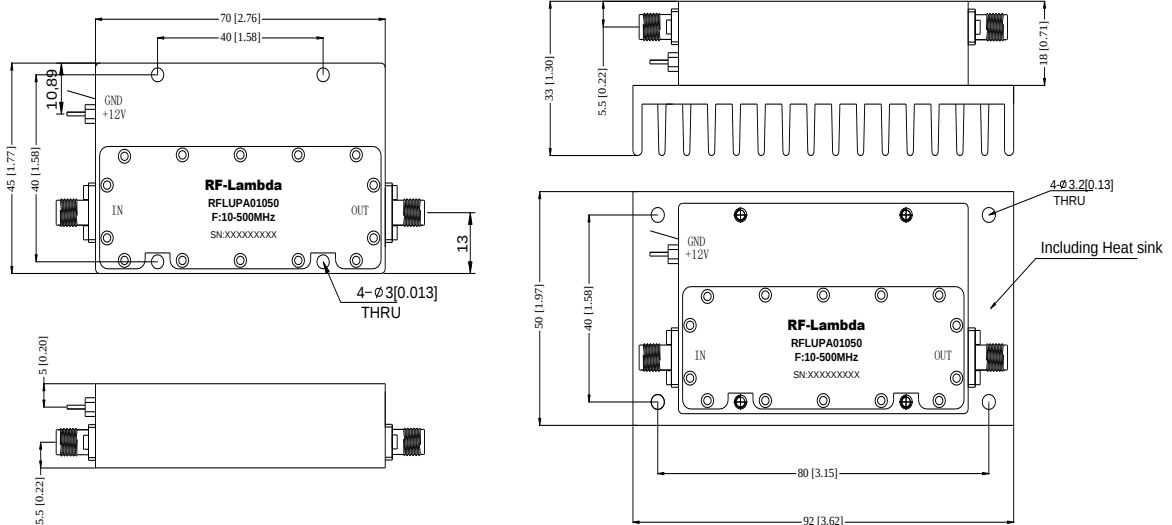
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RFLUPA01050	EAR99	10-500MHz Power Amplifier

Important Notice

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