



Ultra Wide Band Low Noise Amplifier 0.1GHz~3GHz



Features

- Gain: 33dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +22dBm Typical
- Supply Voltage: +12V @ 310mA
- 50 Ohm Matched Input / Output
- Size: 2.78" x 1.1" x 0.47"

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument
- Fiber Optics

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		1.5	1.5		3	GHz
Gain	31	33		31	33		dB
Gain Flatness		± 0.8	± 1.5		± 0.8	± 1.5	dB
Gain Variation Over Temperature (-45 ~ +85)		± 0.8			± 1.0		dB
Noise Figure		1.8	2.5		2.0	2.5	dB
Input VSWR		1.6			1.6		: 1
Output VSWR		1.5			1.8		: 1
Output 1dB Compression Point (P1dB)	20	22		20	22		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (IP3)		36			34		dBm
Isolation S12		-60			-55		dB
Supply Current (Idd) (Vcc=+12V)		310	360		310	360	mA
Weight	1.76						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA - Female						
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum						
Package Sealing	Epoxy Sealing (Standard)						
	Hermetically Sealed (Option with extra charge)						



Absolute Maximum Ratings

Operating Voltage	+13.5V
RF Input Power	-6dB m

Biassing Up Procedure

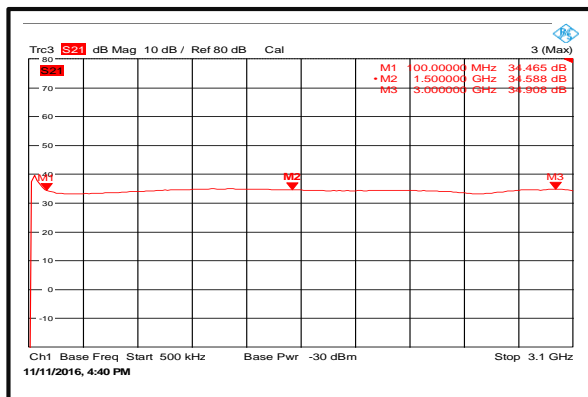
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications

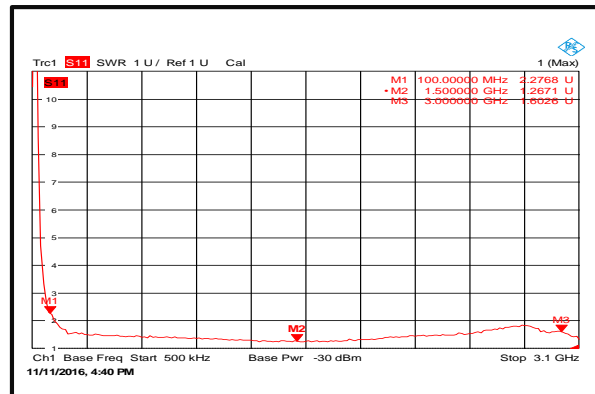
Operational Temperature (°C)	-45 to +85 °C
Storage Temperature (°C)	-55 to +125 °C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Typical Performance Plots

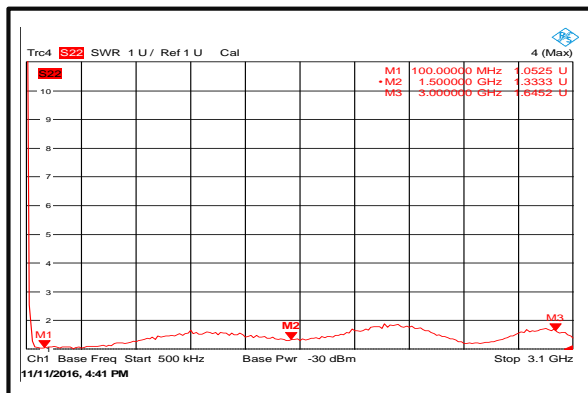
Gain



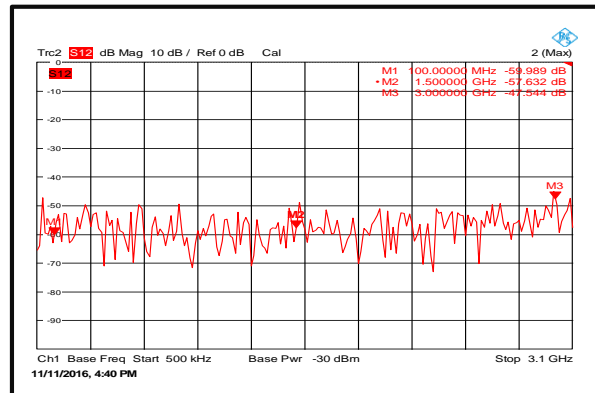
Input VSWR



Output VSWR



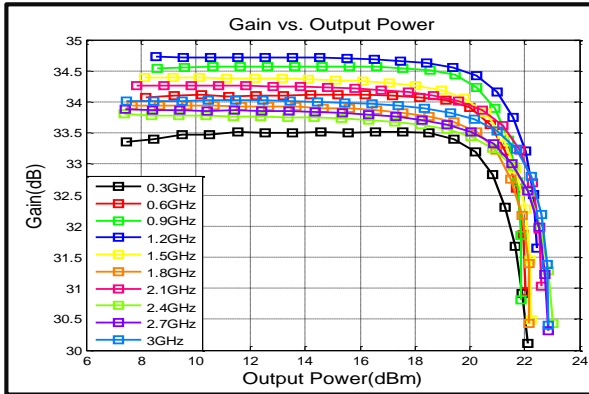
Isolation



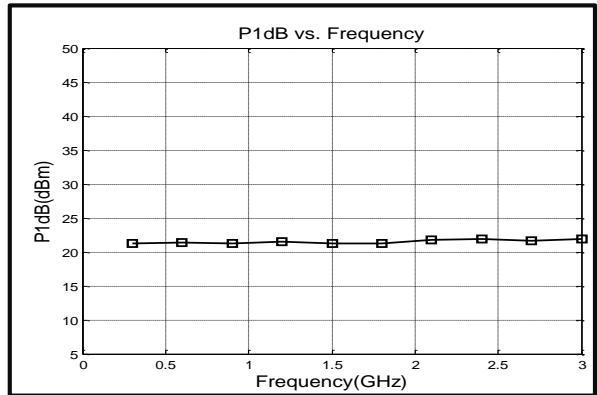
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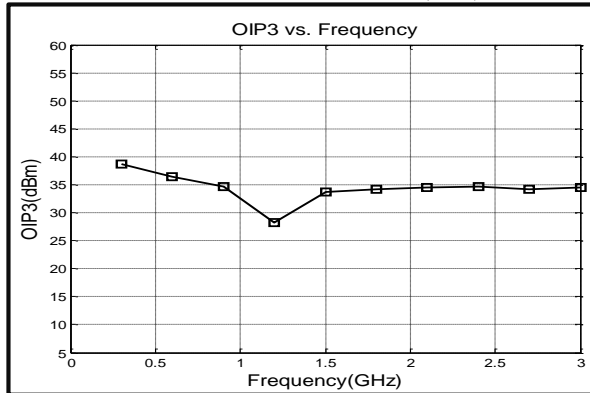
Gain vs. Output Power



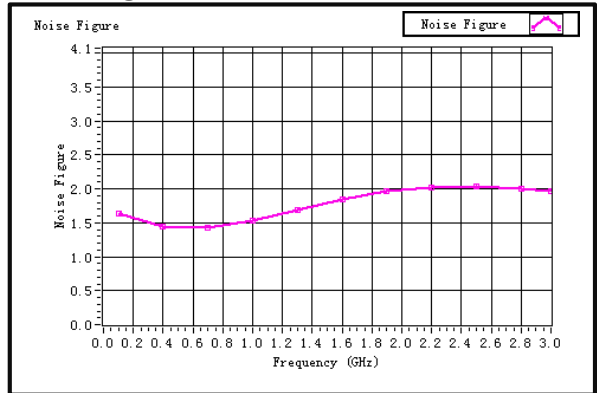
P1dB vs. Frequency



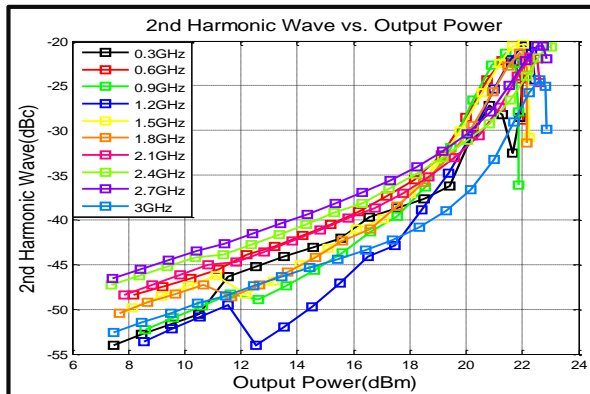
Output Third Order Intercept (IP₃)



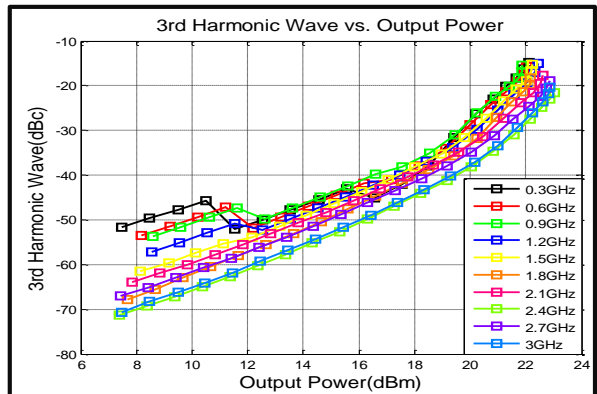
Noise Figure



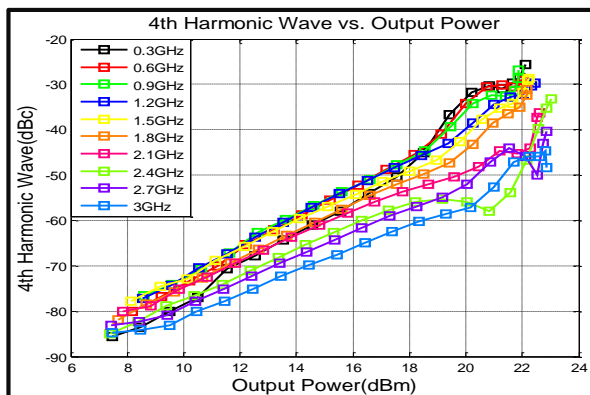
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



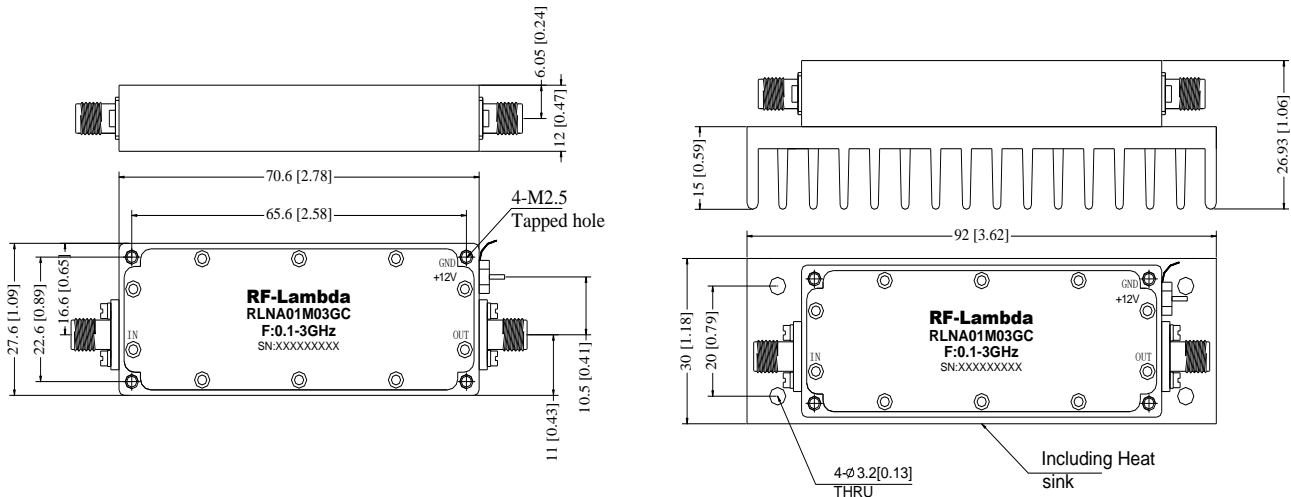
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Outline Drawing:

All Dimensions in mm [inches]

Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA01M03GC	EAR99	0.1-3GHz Low Noise Amplifier

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