



### Low Noise Amplifier 3.2GHz ~ 3.8GHz



#### Features

- Gain: 36dB Typical
- Noise Figure: 1.6dB Typical
- P1dB Output Power: +25dBm Typical
- Supply Voltage: +12V @ 310mA
- 50 Ohm Matched Input / Output
- Size: 1.77x 1.06" x 0.39"

#### Typical Applications

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

#### Electrical Specifications, TA = +25 °C, Vcc = +12V, 50 Ohm System

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	3.2		3.5	3.5		3.8	GHz
Gain	32	36		32	36		dB
Gain Flatness		±0.5	±1.0		±0.5	±1.0	dB
Gain Variation Over Temp (-45 ~ +85°C)		±0.8			±1.0		dB
Noise Figure		1.6	2.5		1.6	2.5	dB
Input VSWR		1.3	1.6		1.3	1.6	
Output VSWR		1.5	2.0		1.5	2.0	
Output 1dB Compression Point (P1dB)	23	25		23	25		dBm
Saturated Output Power (Psat)		27			27		dBm
Output Third Order Intercept (IP3)		33			34		dBm
Isolation S12		-55			-55		dB
Supply Current (Vcc=+12V)		310	350		310	350	mA
Weight	1.06						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)						

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**Absolute Maximum Ratings**

Operating Voltage	+12V $\pm$ 10%
RF Input Power	-8dBm

**Biasing Up Procedure**

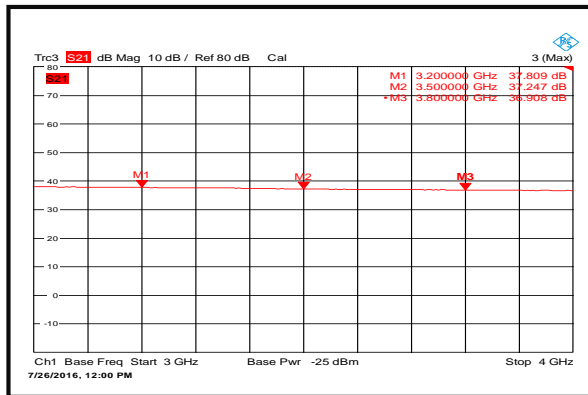
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
<b>Power OFF Procedure</b>	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

**Environmental Specifications**

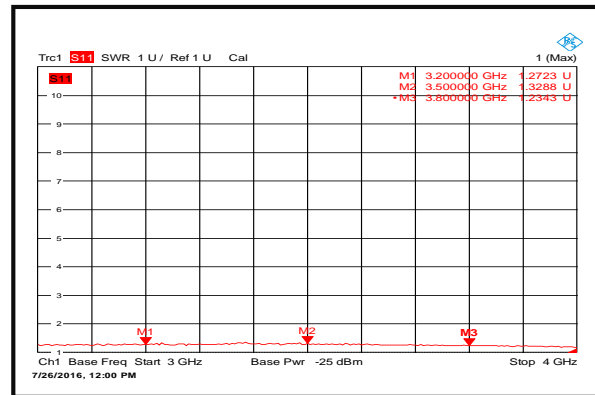
Operational Temperature (°C)	-45 to +85
Storage Temperature (°C)	-55 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c,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

**Typical Performance Plots**

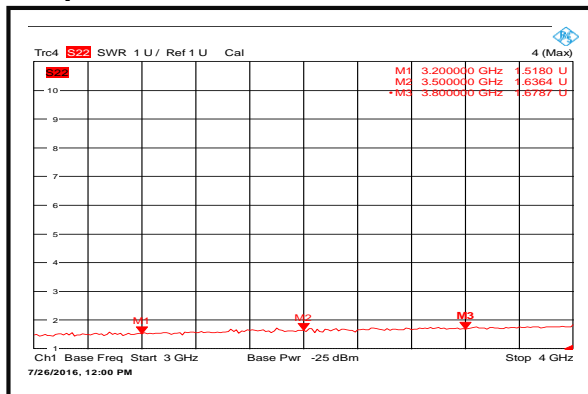
**Gain**



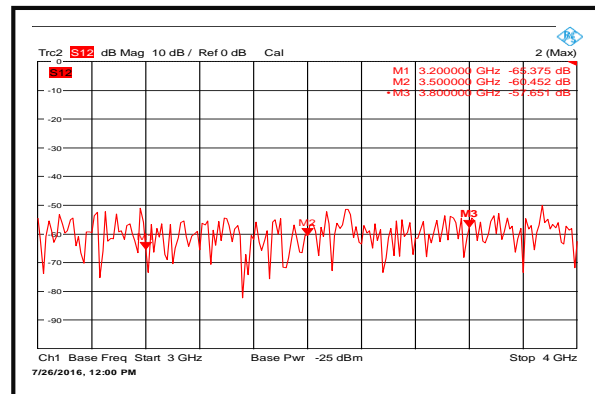
**Input VSWR**



**Output VSWR**



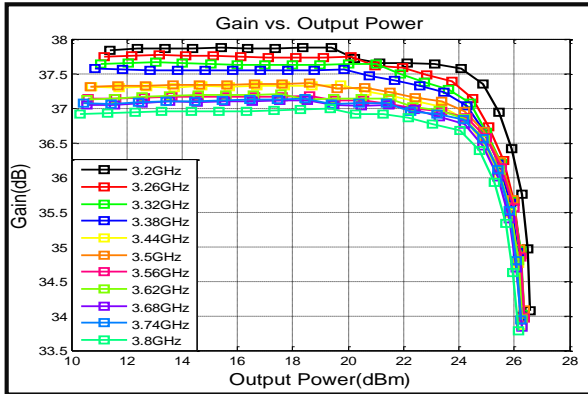
**Isolation**



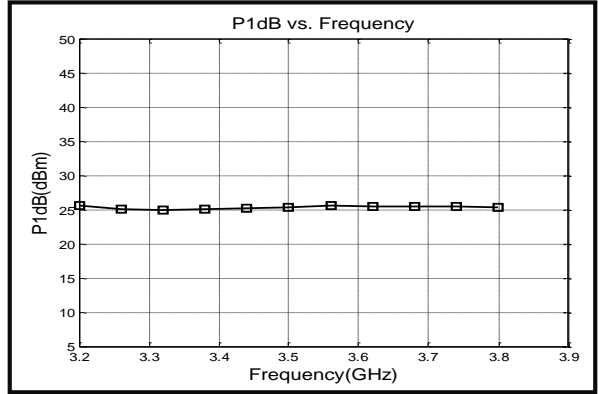
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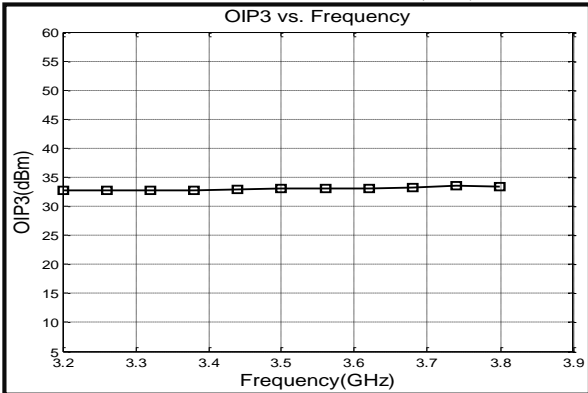
### Gain vs. Output Power



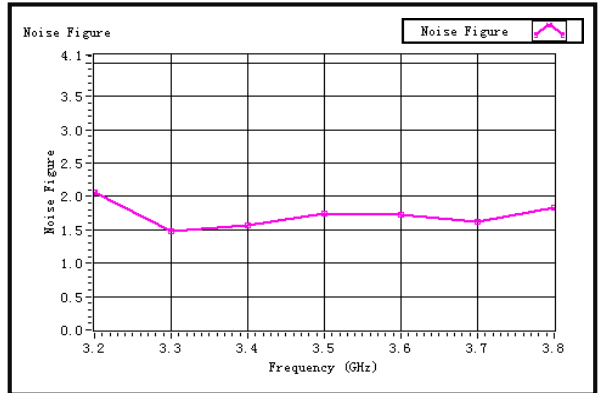
### P1dB vs. Frequency



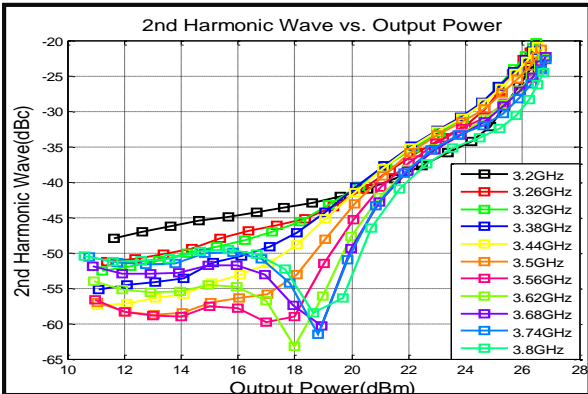
### Output Third Order Intercept (IP<sub>3</sub>)



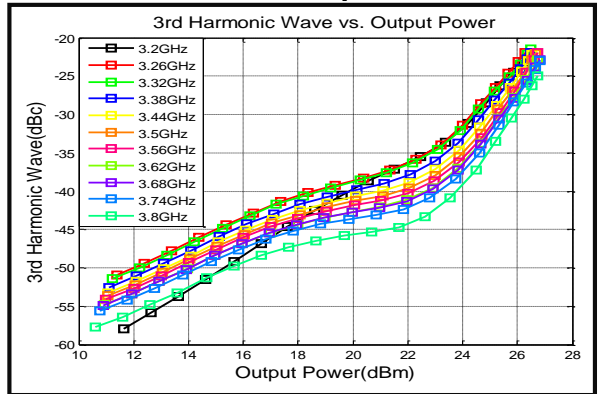
### Noise Figure



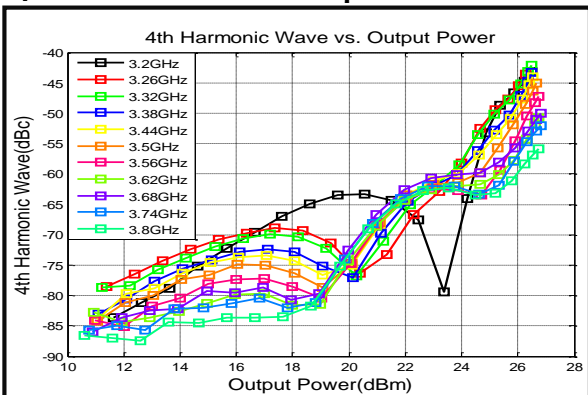
### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



### 4th Harmonic Wave Output Power

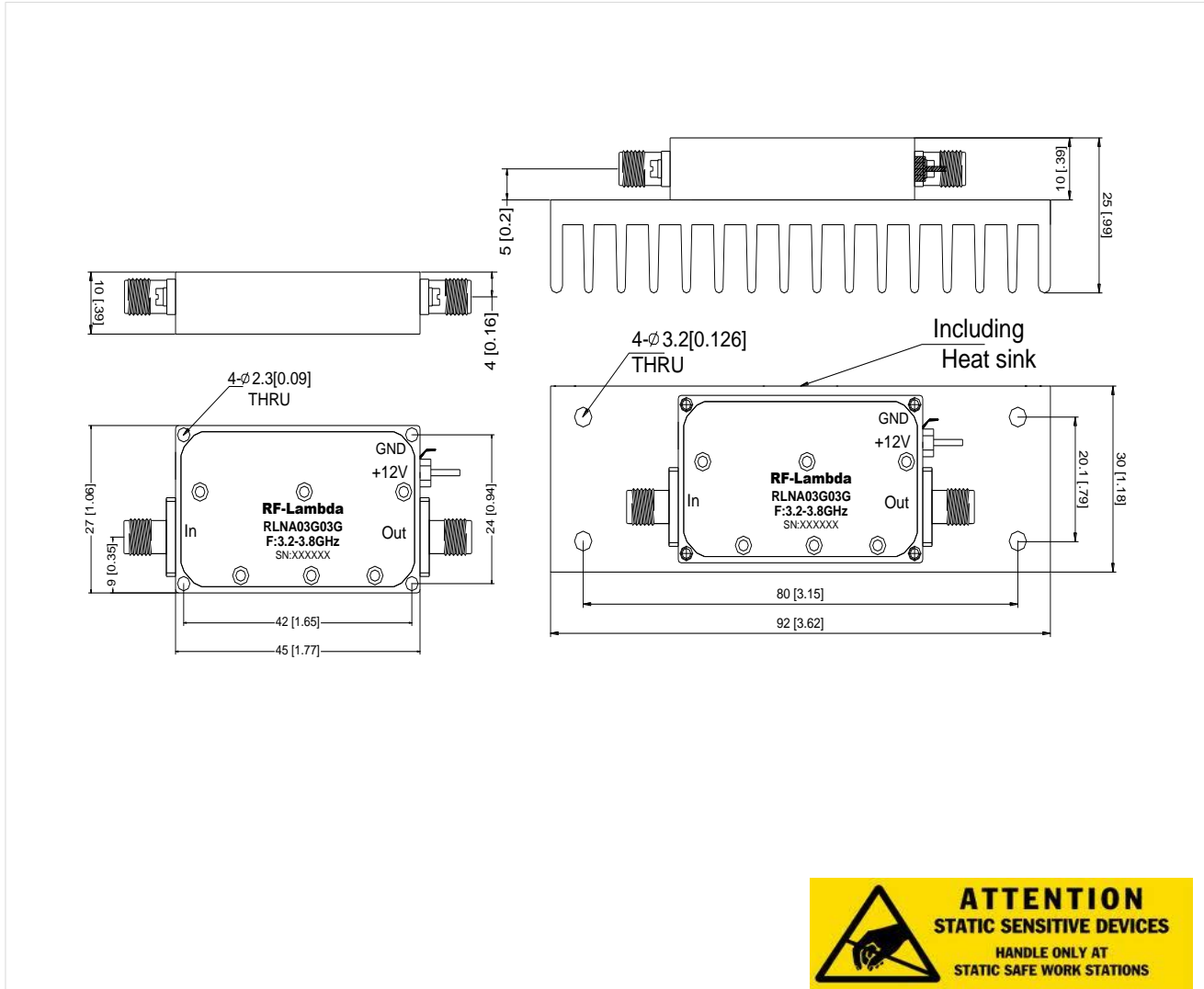


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**Outline Drawing:**

All Dimensions in mm [inches]  
Heat Sink required during operation (Sold Separately)



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**Ordering Information**

Part No.	ECCN	Description
RLNA03G03G	EAR99	3.2-3.8GHz Low Noise Amplifier

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