# Low Noise Amplifier 2.5GHz~3.5GHz

RoHS Compliant

## Feature

- Gain: 42dB Typical
- Noise Figure: 1.8dB Typical
- P1dB Output Power: +30dB m full band
- Supply Voltage: +12V @ 280mA
- 50 Ohm Matched Input / Output
- Size:3.55" x1.58" x 1.1"

## Typical Applications

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

*Electrical Specifications, TA = +25 ° C, With VCC=+12V, 50 Ohm System*

| Parameter | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency Range | 2.5 | | 3.5 | GHz |
| Gain | 40.5 | 43 | | dB |
| Gain Flatness | | ±1 | | dB |
| Gain Variation Over Temperature(-45 ~ +85) | | ±1.5 | | dB |
| Noise Figure | | 1.8 | 2.5 | dB |
| Input Return Loss | | 10 | | dB |
| Output Return Loss | | 9 | | dB |
| Output Power for 1 dB Compression (P1dB) | 30 | 31 | | dBm |
| Saturated Output Power (Psat) | | 32 | | dBm |
| Output Third Order Intercept (IP3) | | 40 | | dBm |
| Supply Current (Idd) (Vd=+12V) | | 280 | 450 | mA |
| Isolation S12 | 60 | 65 | | dB |
| Input Max Power(no damage) | | | 5 | dBm |
| Weight | 100 | | | g |
| Impedance | 50 | | | Ohms |
| Input /Output Connector | SMA-Female | | | |
| Finishing | Standard: Gold 40 micron; Nickel 220 micron thickness | | | |
| | Option: Gold 80 micron; Nickel 180 micron thickness | | | |
| Material | Aluminum/copper | | | |
| Package Sealing | Epoxy Sealing (Standard) | | | |
| | Hermetically Seal (Option with extra charge) | | | |

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## Absolute Maximum Ratings

| | |
|---|---|
| Operating Voltage | +12V |
| RF Input Power | +5dB m |
| Operating Temperature(C°) | -45 to +85 |
| Storage Temperature(C°) | -50 to +125 |

## Biasing Up Procedure

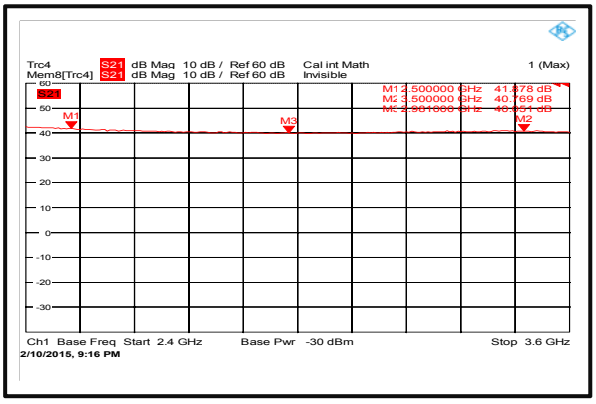
| | |
|---|---|
| Step 1 | Connect Ground Pin |
| Step 2 | Connect input and output |
| Step 3 | Connect +12V biasing |
| Power OFF Procedure | |
| Step 1 | Turn off +12V biasing |
| Step 2 | Remove RF connection |
| Step 3 | Remove Ground. |

## Environment specifications

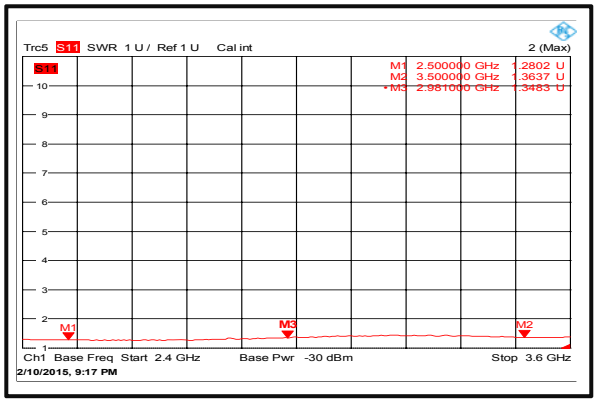
| | |
|---|---|
| Operational Temperature (C°) | -45 to+85 |
| Storage Temperature (C°) | -50 to +125 |
| Altitude | 30,000 ft. (Epoxy Seal Controlled environment)<br>60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) ( Optional ) |
| Vibration | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |
| Humidity | 100% RH at 35c, 95%RH at 40°c |
| Shock | 20G for 11msc half sin wave,3 axis both directions |

## *Typical performance plots*

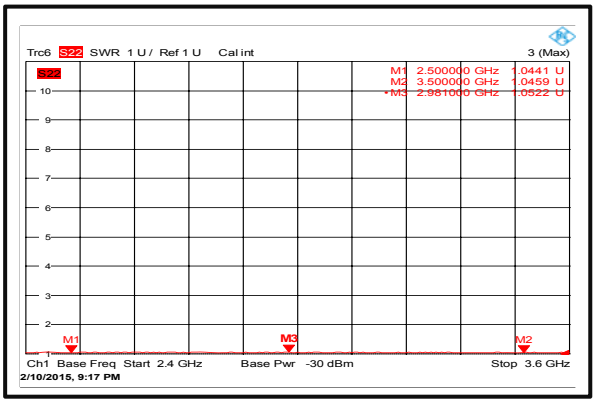
### Gain



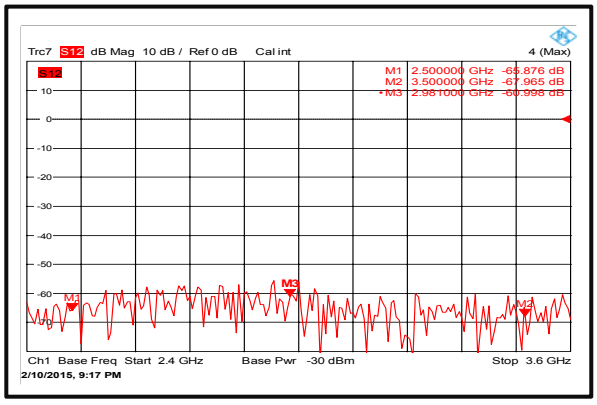

### Input VSWR



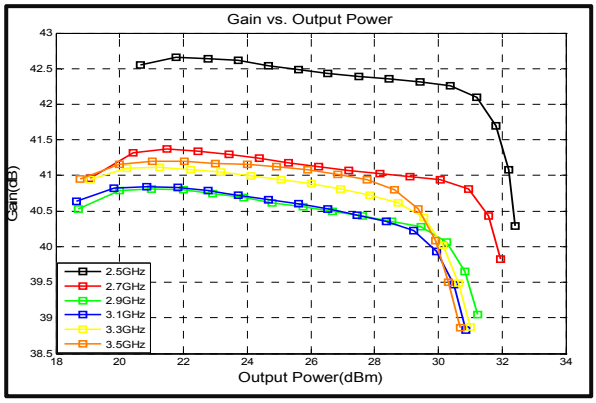

### Output VSWR



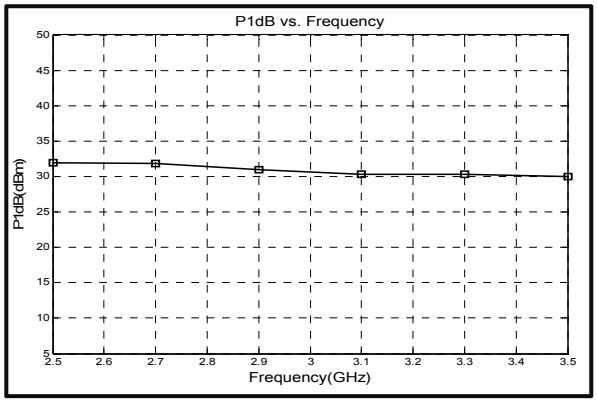

### Isolation



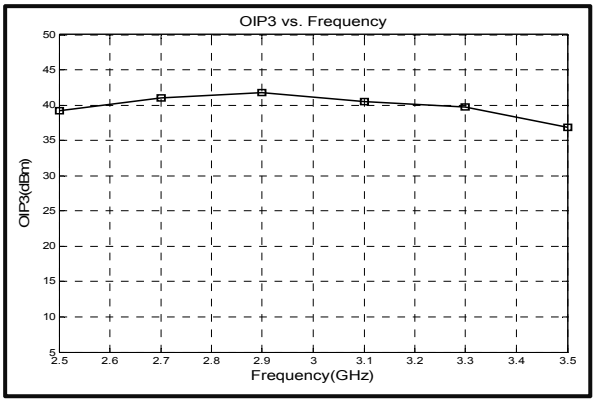
## Cain vs. output power



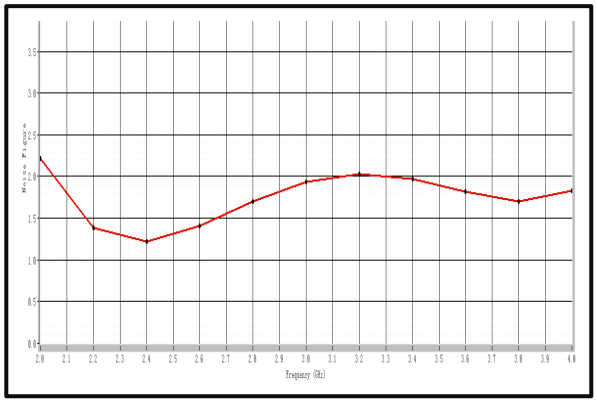

## P1dB vs. Frequency



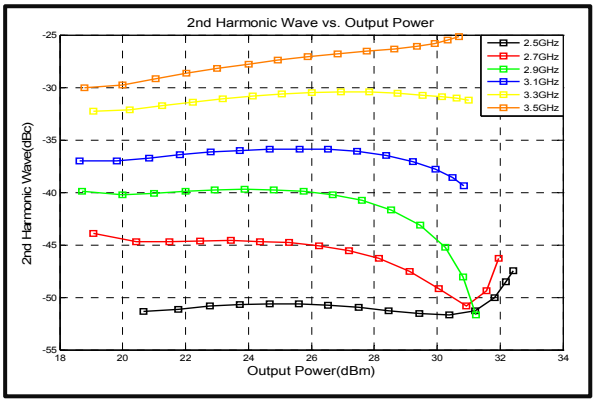

## Output Third Order Intercept (IP3)



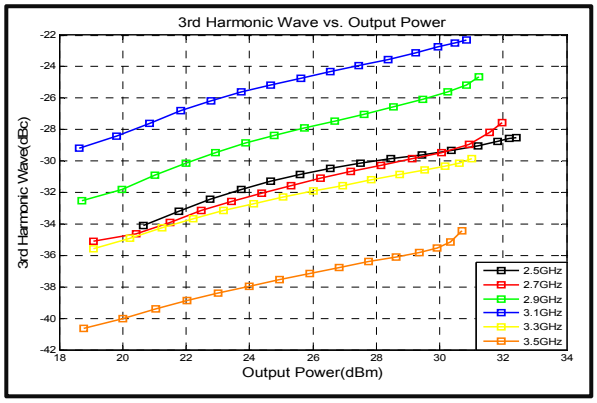

## Noise Figure



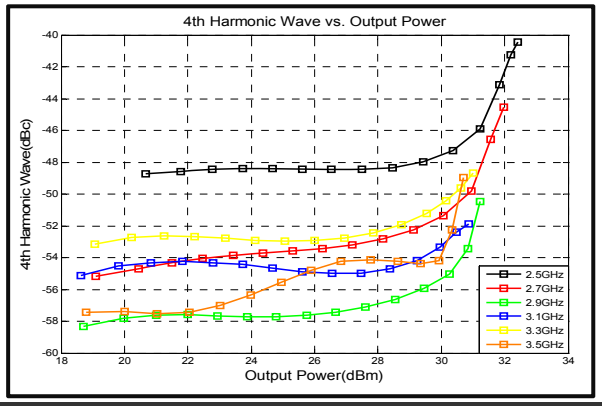
## 2nd Harmonic Wave output Power




## 3th Harmonic Wave output Power




## 4nd Harmonic Wave output Power

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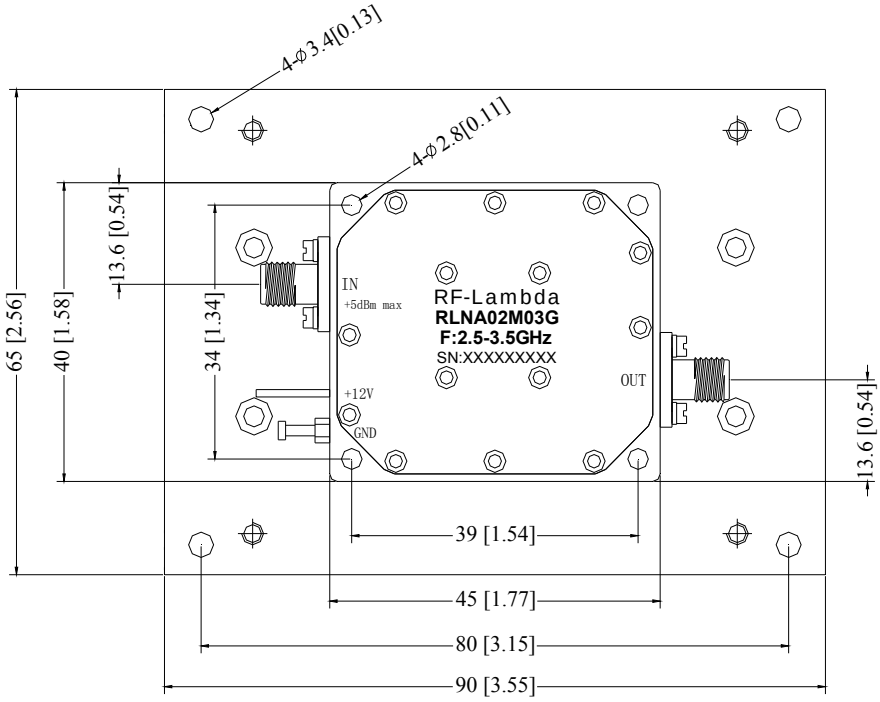
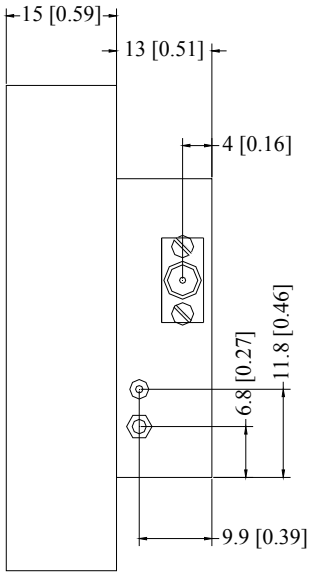
## Outline Drawing:

All Dimensions in mm（inches）
Heat Sink required during operation





## Ordering Information

| Part No | ECCN | Description |
|---|---|---|
| RLNA02M03G | EAR99 | 2.5-3.5GHz LNA Amplifier |

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