# Wide Band Low Noise Amplifier
# 6GHz ~ 17GHz


RoHS Compliant

## *Features*

- Gain: 19dB Typical
- Noise Figure: 1.7dB Typical
- P1dB Output Power: +15dBm Typical
- Supply Voltage: +4V
- 50 Ohm Matched

## *Typical Applications*

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

*Electrical Specifications, TA = +25°C, Vcc = +4V*

| Parameter | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Frequency Range | 6 | | 12 | 12 | | 17 | GHz |
| Gain | 18 | 20 | | 17 | 19 | | dB |
| Gain Flatness | | ±1.0 | ±1.5 | | ±0.5 | ±1.0 | dB |
| Gain Variation Over Temperature (-45 ~ +85) | | ±0.5 | | | ±0.8 | | dB |
| Noise Figure | | 2.0 | 2.8 | | 1.7 | 2.5 | dB |
| Input VSWR | | 1.8 | 2.2 | | 1.8 | 2.2 | : 1 |
| Output VSWR | | 1.9 | 2.2 | | 1.8 | 2.2 | : 1 |
| Output 1dB Compression Point (P1dB) | 13 | 15 | | 14 | 16 | | dBm |
| Saturated Output Power (Psat) | | 16 | | | 17 | | dBm |
| Output Third Order Intercept (IP3) | | 25 | | | 27 | | dBm |
| Supply Current (Vcc=+4V) | | 90 | 120 | | 90 | 120 | mA |
| Isolation S12 | | -35 | | | -35 | | dB |
| Weight | 0.35 | | | | | | 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 (Optional with extra charge) | | | | | | |

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## Absolute Maximum Ratings

| | |
|---|---|
| Operating Voltage | +4.5V |
| RF Input Power | +10dBm |

## Biasing Up Procedure

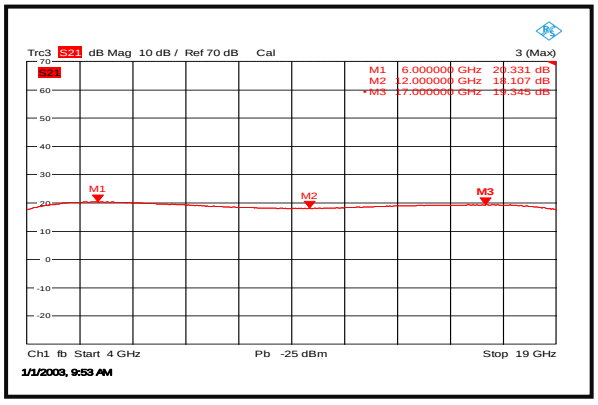
| | |
|---|---|
| Step 1 | Connect Ground Pin |
| Step 2 | Connect input and output |
| Step 3 | Connect +4V biasing |
| Power OFF Procedure | |
| Step 1 | Turn off +4V biasing |
| Step 2 | Remove RF connection |
| Step 3 | Remove Ground. |

## Environmental Specifications

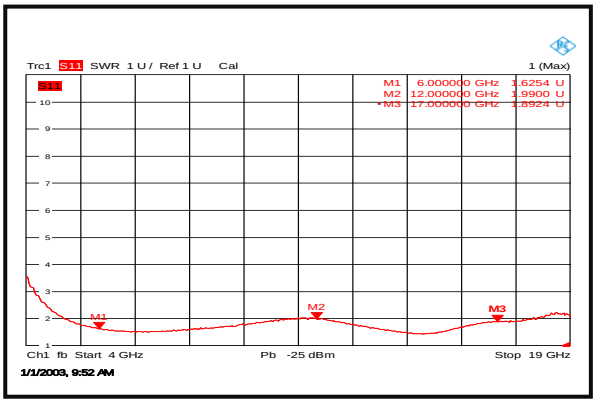
| | |
|---|---|
| Operational Temperature (°C) | -45 to +85 |
| Storage Temperature (°C) | -55 to +125 |
| Altitude | 30,000 ft. (Epoxy Sealed Controlled environment) |
| | 60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional) |
| Vibration | 25g RMS (15 degrees 2KHz) endurance, 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*

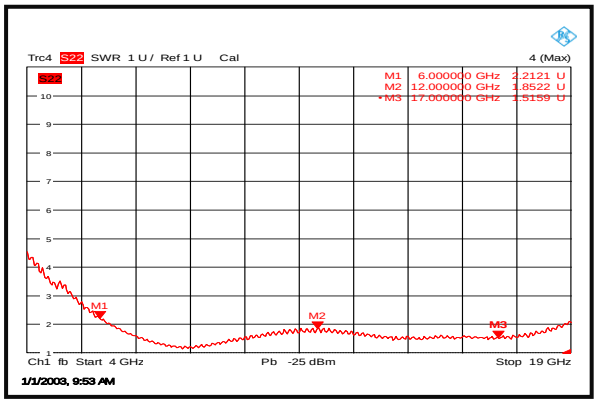
### Gain @+25°C



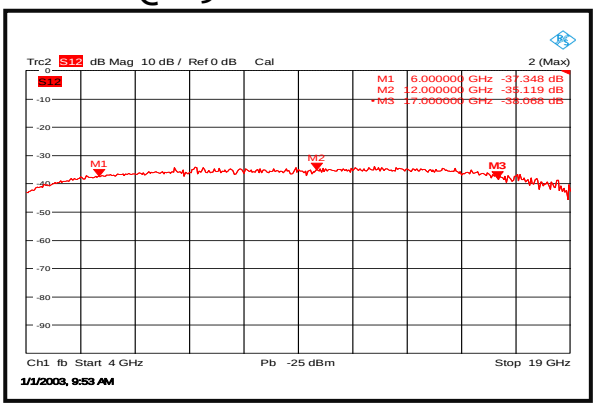

### Input VSWR @+25°C




### Output VSWR @+25°C




### Isolation @+25°C

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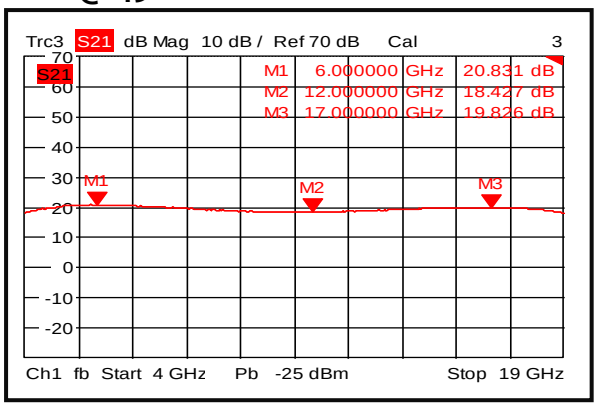
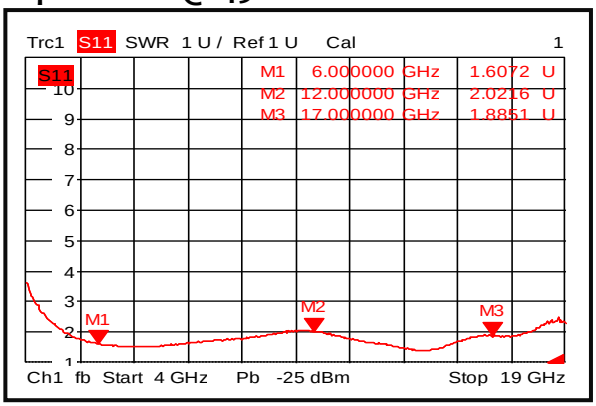
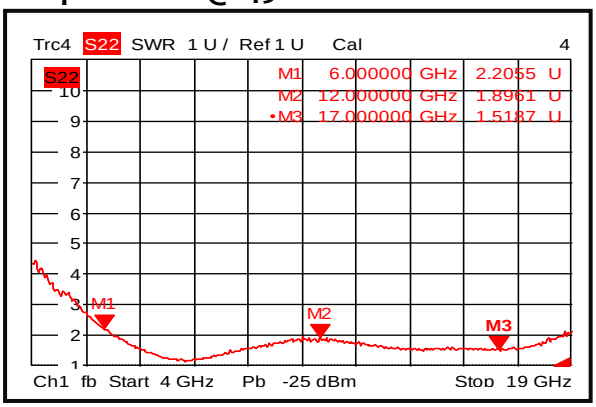
## Gain @-45℃



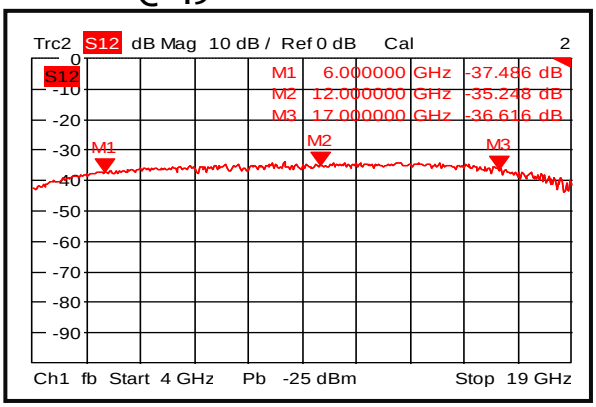

## Input VSWR @-45℃



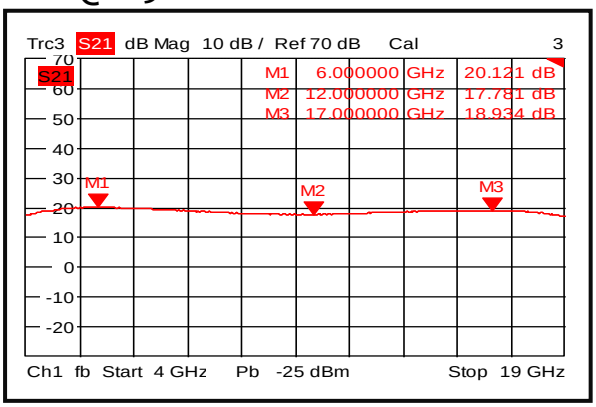

## Output VSWR @-45℃



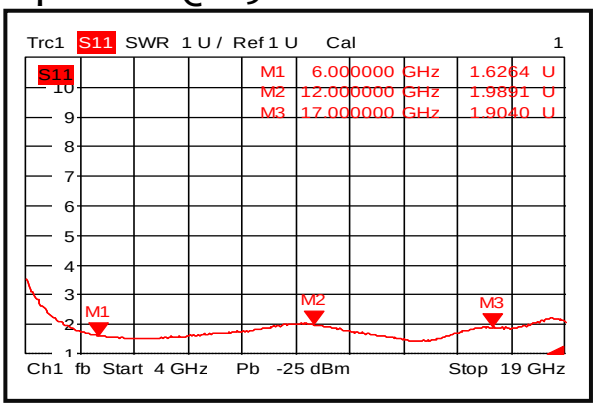

## Isolation @-45℃



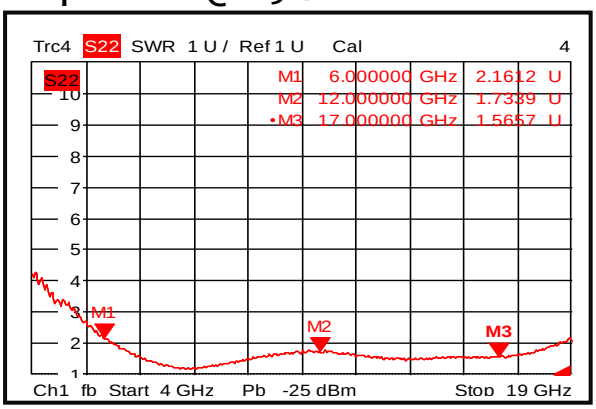

## Gain @+85℃



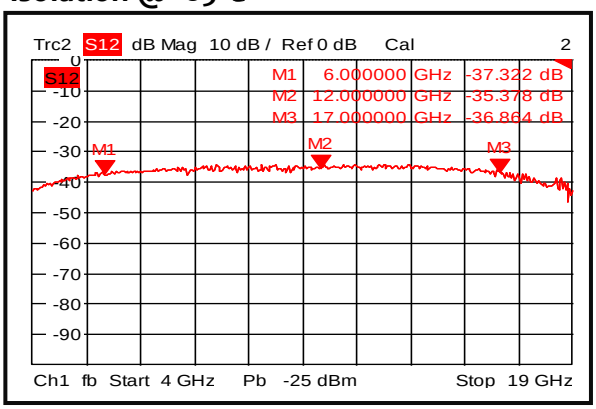

## Input VSWR @+85℃




## Output VSWR @+85℃




## Isolation @+85℃

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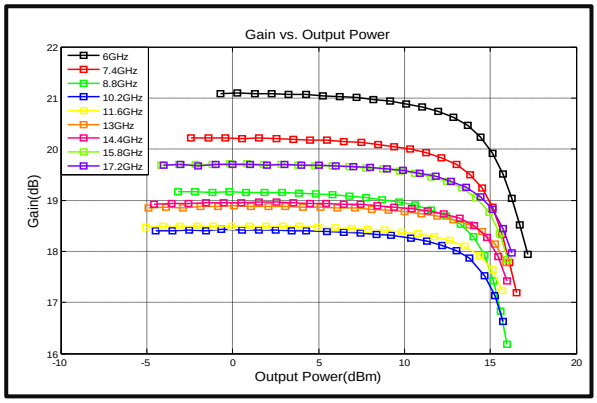
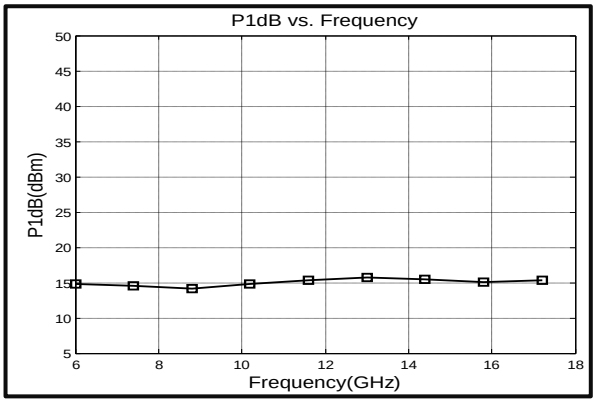
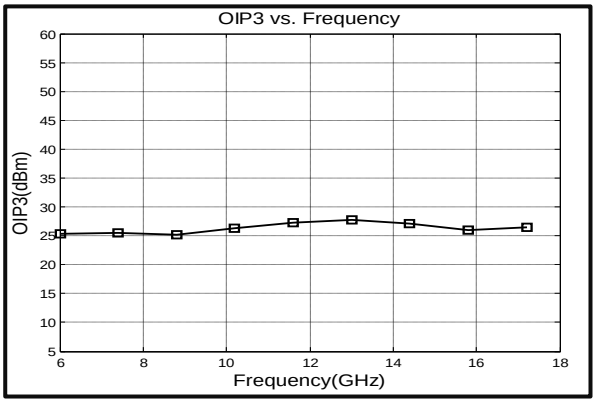
## Gain vs. Output Power



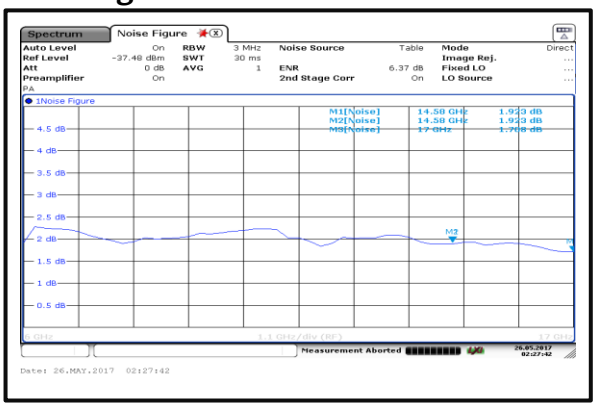

## P1dB vs. Frequency



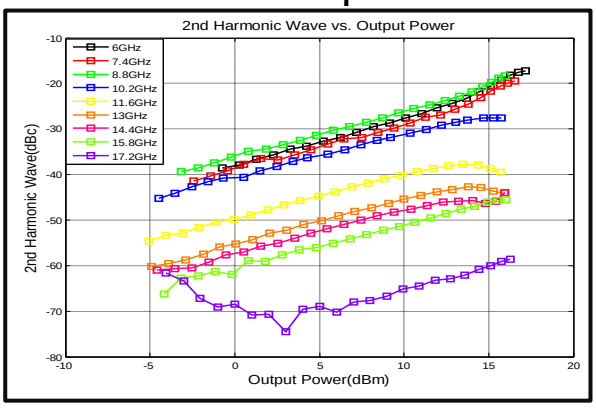

## Output Third Order Intercept (IP3)



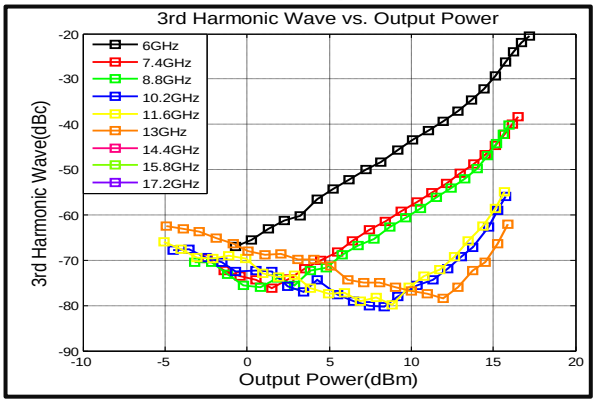

## Noise Figure



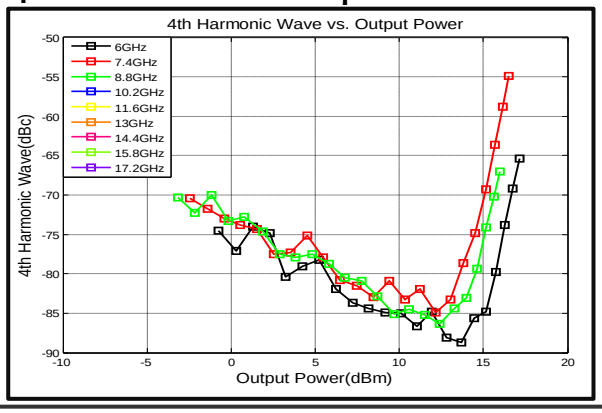

## 2nd Harmonic Wave Output Power




## 3rd Harmonic Wave Output Power




## 4th Harmonic Wave Output Power

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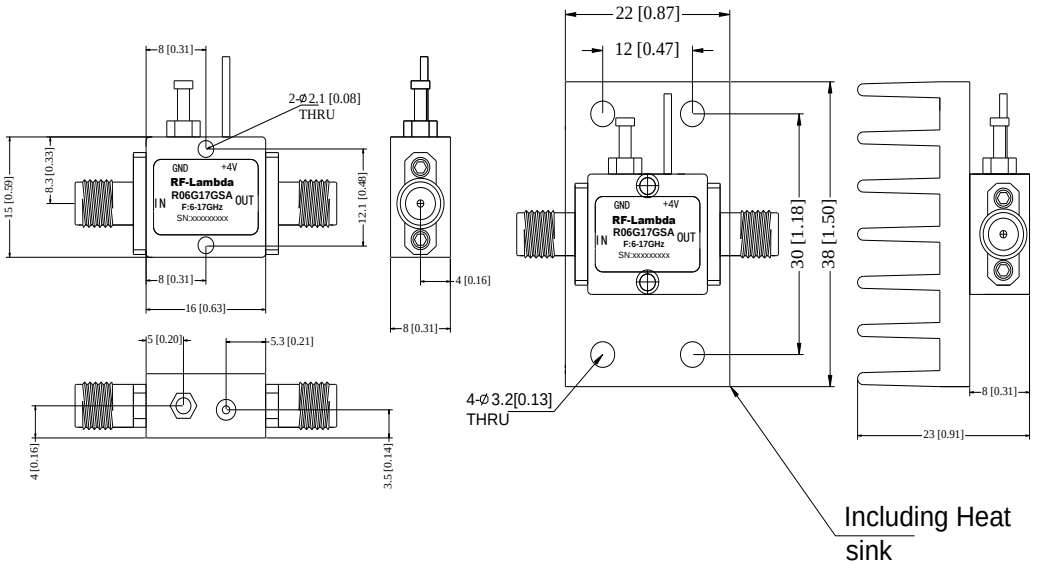
## Outline Drawing:

All Dimensions in mm [inches]




Heat Sink required during operation (Sold Separately)


## Ordering Information

| Part No. | ECCN | Description |
|---|---|---|
| R06G17GSA | EAR99 | 6-17GHz Low Noise Amplifier |

## Important Notice

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