# Wide Band Low Noise Amplifier 16GHz~27GHz

## Features

- Gain: 31dB typical
- Noise Figure: 2.0dB typical
- High P1dB: +21dBm typical
- Supply Voltage: +12V /160 mA

## Typical Applications

- Wireless Infrastructure
- 5G communication
- Test and measurement Instrument

RF Microwave & VSAT
Fiber Optics

| Parameter | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Frequency Range | 16 | | 22 | 22 | | 27 | GHz |
| Gain | 29 | 32 | | 28 | 30 | | dB |
| Gain Flatness | | ±0.5 | ±1.0 | | ±1.0 | ±1.5 | dB |
| Gain Variation Over Temperature(-40ºC~+85ºC) | | ±1.0 | | | ±1.5 | | dB |
| Noise Figure | | 2.2 | 3.0 | | 2.2 | 3.0 | dB |
| Input VSWR | | 1.4 | 2.0 | | 1.4 | 2.0 | : 1 |
| Output VSWR | | 1.7 | 2.2 | | 1.4 | 2.0 | : 1 |
| Output 1dB Compression Point (P1dB) | 17 | 21 | | 18 | 21 | | dBm |
| Saturated Output Power (Psat) | | 23 | | | 23 | | dBm |
| Output Third Order Intercept (OIP3) | | 25 | | | 25 | | dBm |
| Supply Current (Vcc=+12V) | | 160 | 200 | | 160 | 200 | mA |
| Isolation S12 | | -70 | | | -65 | | dB |

| | | | |
|---|---|---|---|
| Weight | 1.41ounces | Impedance | 50ohms |
| Input / Output Connectors | 2.92mm-Female | Material | Aluminum |
| Finish | Gold Plated | Package Sealing | Epoxy Sealed (Standard)<br>Hermetically Sealed (Option with extra charge) |

## Absolute Maximum Ratings

| | |
|---|---|
| Operating Voltage | +15V |
| RF Input Power | -2dBm |

## Biasing Up Procedure

| | |
|---|---|
| Step 1 | Connect Ground Pin |
| Step 2 | Connect input and output |
| Step 3 | Connect bias voltage |

## Power OFF Procedure

| | |
|---|---|
| Step 1 | Turn off bias voltage |
| Step 2 | Remove RF connection |
| Step 3 | Remove Ground. |

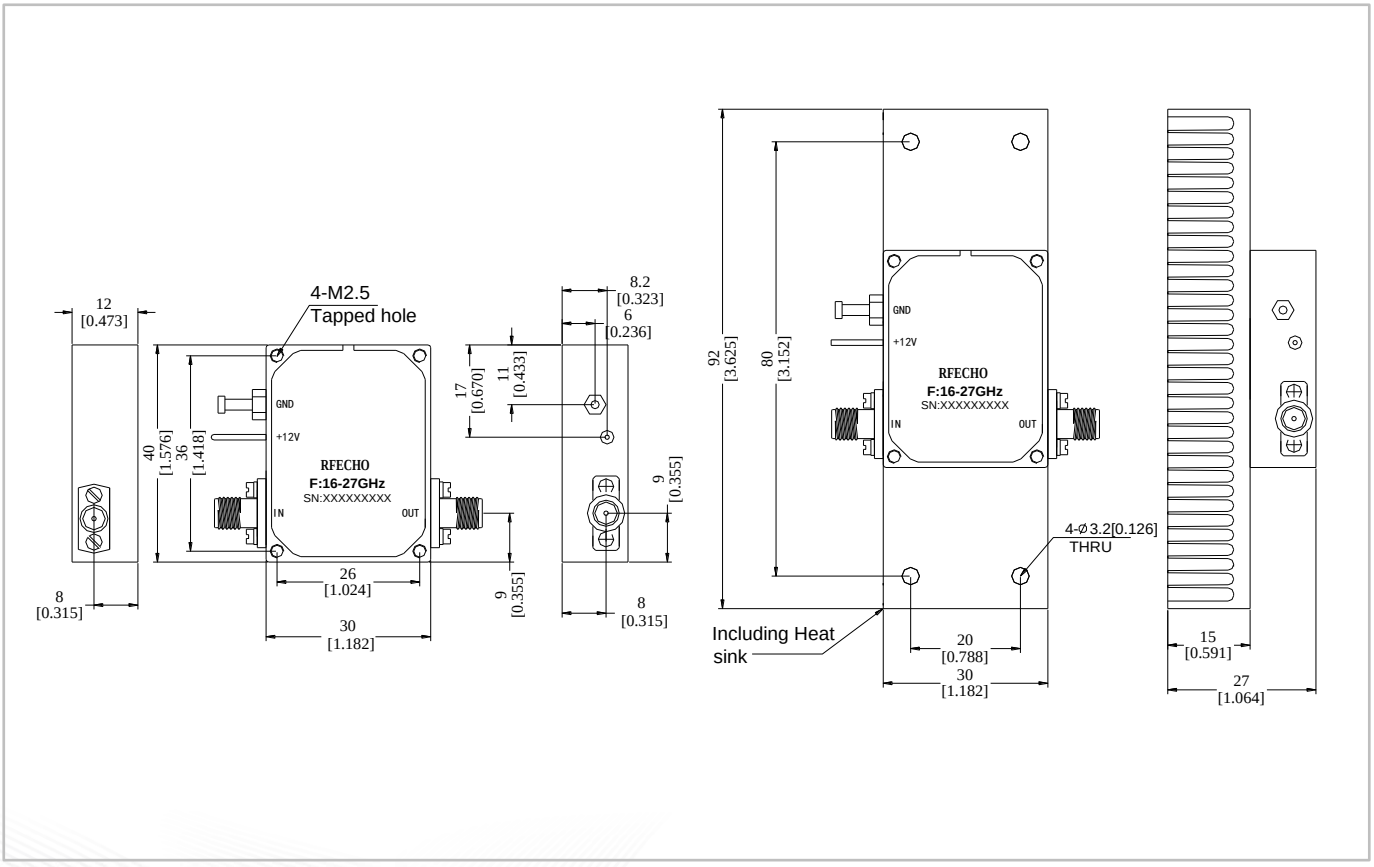
## Environmental Specifications

| | |
|---|---|
| Operational Temperature | -40ºC~+85ºC |
| Storage Temperature | -50ºC~+105ºC |
| 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 35ºc, 95%RH at 40ºc |
| Shock | 20G for 11msec half sine wave,3 axis both directions |

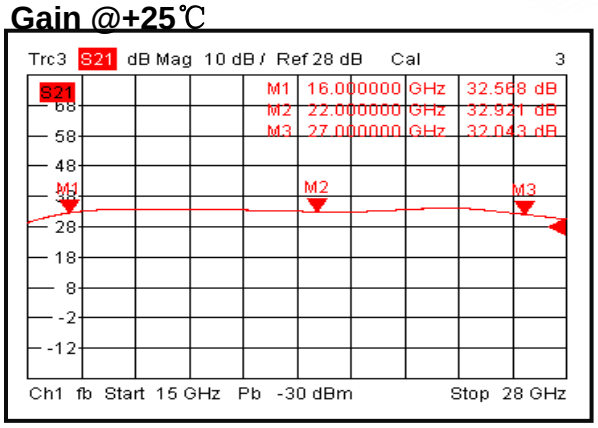
## Outline Drawing:

All Dimensions in mm [inches]

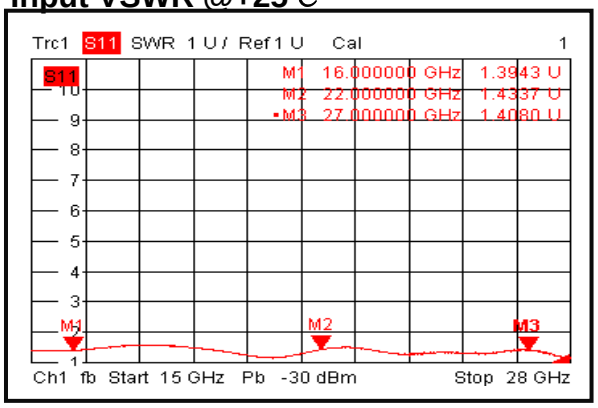
Heat Sink required during operation ( Sold Separately )



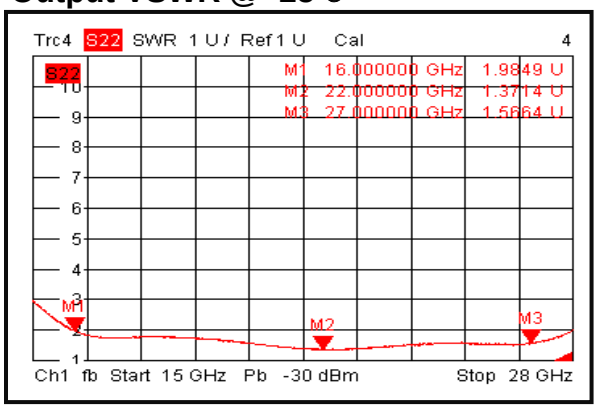
## Gain @+25℃



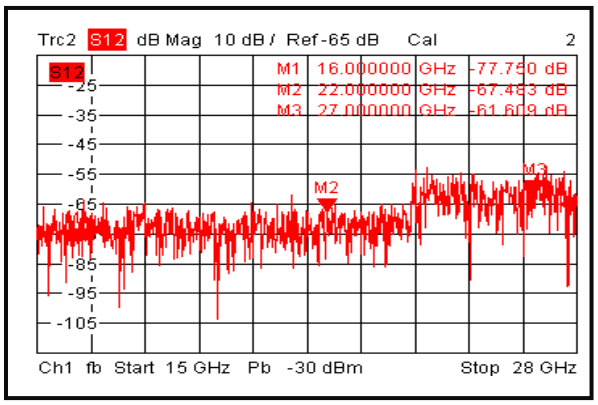

## Input VSWR @+25℃



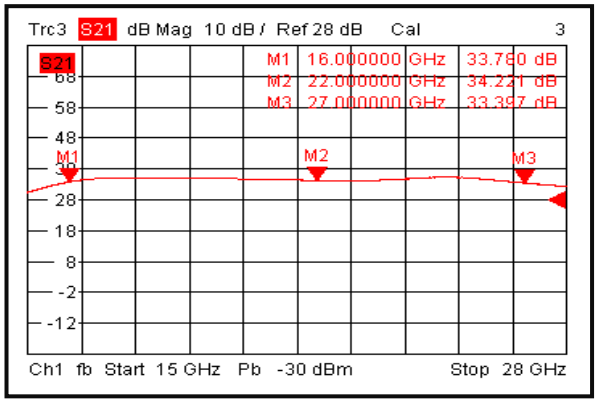

## Output VSWR @+25℃



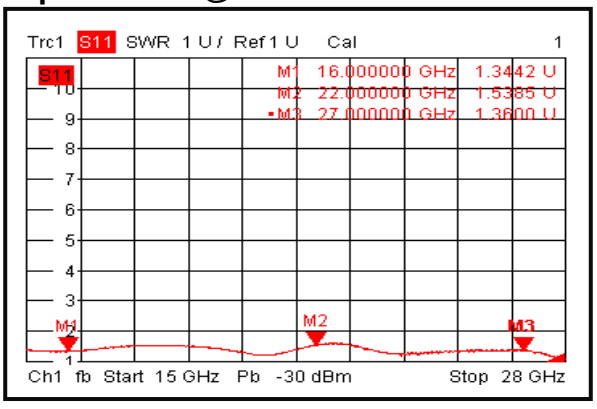

## Isolation @+25℃



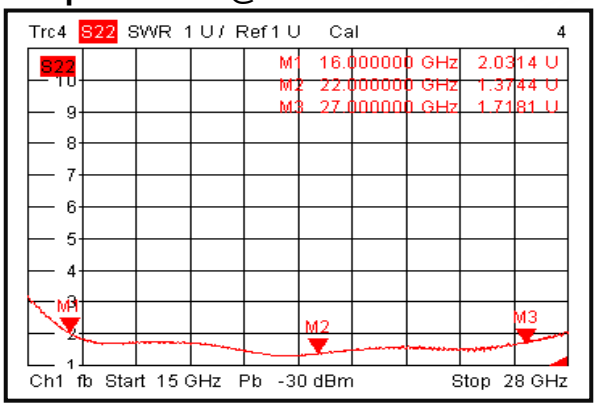

## Gain @-40℃



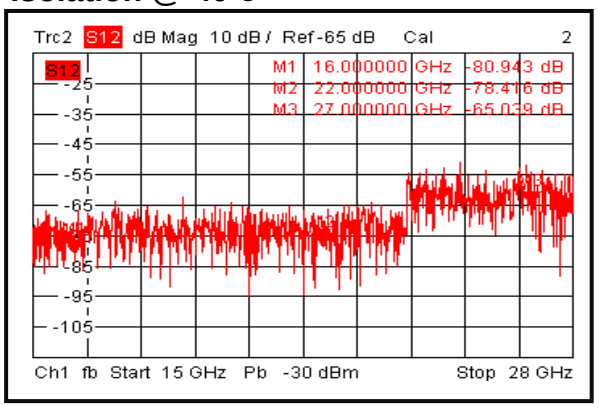

## Input VSWR @-40℃



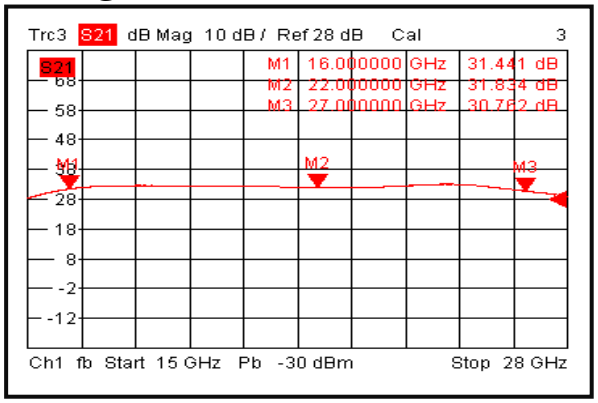
## Output VSWR @-40℃



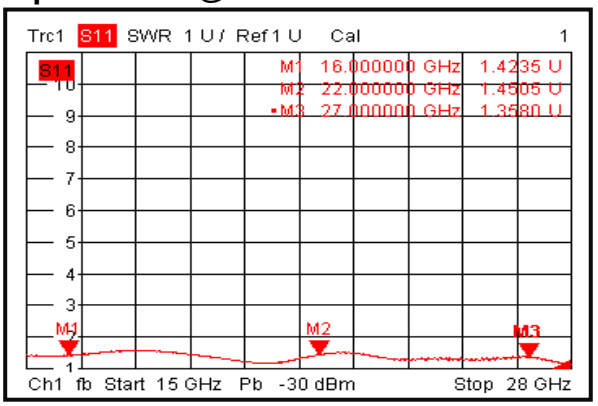

## Isolation @-40℃



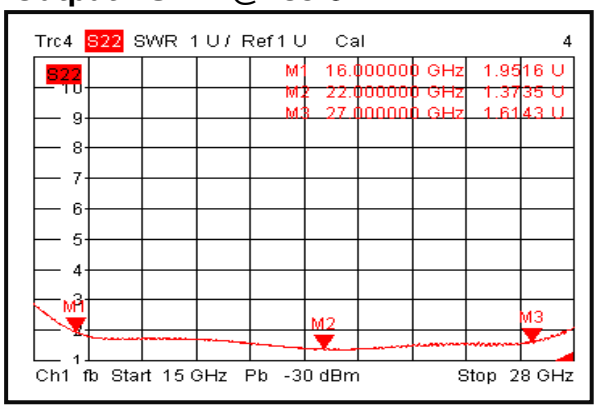

## Gain @+85℃



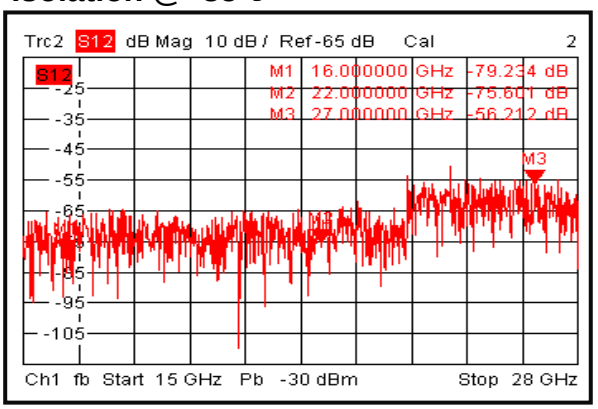

## Input VSWR @+85℃



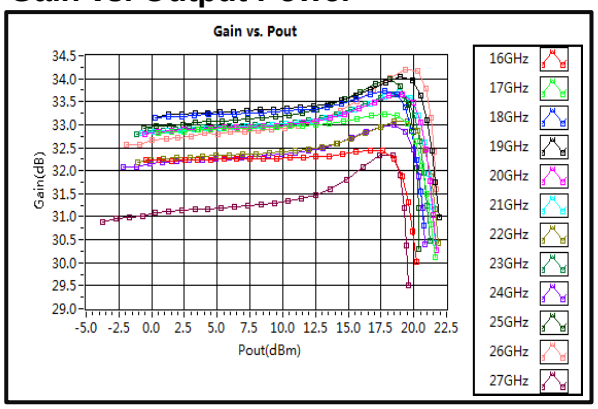

## Output VSWR @+85℃



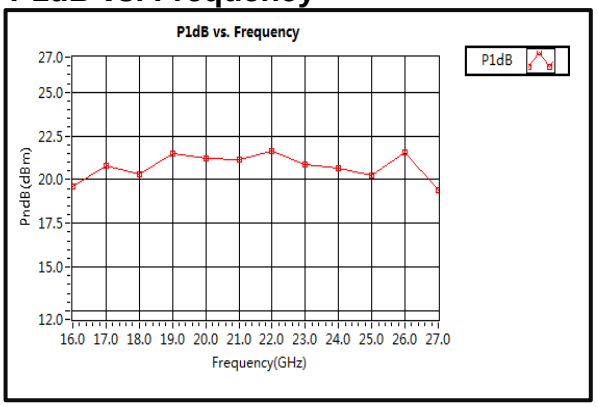

## Isolation @+85℃



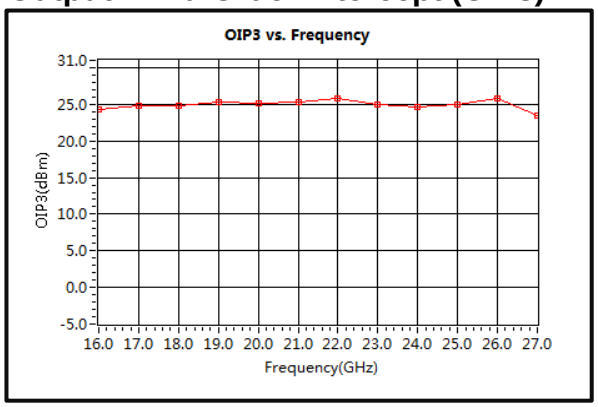
## Gain vs. Output Power




## P1dB vs. Frequency




## Output Third Order Intercept (OIP3)




## Noise Figure


## 2nd Harmonic Wave Output Power