



# Power Amplifier 4.4GHz~5GHz

## Features

- Gain: 36 dB
- Output power +40dBm typical
- High P1dB: +37 dB m Full Band
- Supply Voltage: +12V @ 500 mA
- 50 Ohm Matched Input / Output



## Typical Applications

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

RF Microwave & VSAT  
Fiber Optics

| Parameter                                      | Min.                | Typ. | Max. | Units |
|------------------------------------------------|---------------------|------|------|-------|
| Frequency Range                                | 4.4                 |      | 5.0  | GHz   |
| Gain                                           | 36                  | 38   |      | dB    |
| Gain Flatness                                  |                     | ±0.6 | ±1.0 | dB    |
| Gain Variation Over Temperature(-40°C ~ +85°C) |                     | ±1.5 |      | dB    |
| Input Return Loss                              | 14                  | 20   |      | dB    |
| Output Power for 1 dB Compression (P1dB)       | 37                  | 38   |      | dBm   |
| Saturated Output Power (Psat)                  |                     | 40   |      | dBm   |
| Supply Current (Idd) (Vcc=+12V)                |                     | 0.5  | 3.5  | A     |
| Efficiency @ P1dB                              | 20                  | 23   |      | %     |
| TTL Control                                    | (high~ON) (low~OFF) |      |      |       |
| Isolation S12                                  |                     | -65  |      | dB    |

|                         |                  |                 |                                                |
|-------------------------|------------------|-----------------|------------------------------------------------|
| Weight                  | 6.5 ounces(Max.) | Impedance       | 50 ohms                                        |
| Input /Output Connector | SMA-Female       | Material        | Aluminum                                       |
| Finish                  | Nickel Plated    | Package Sealing | Epoxy Sealed (Standard)                        |
|                         |                  |                 | Hermetically Sealed (Option with extra charge) |



### Absolute Maximum Ratings

|                       |        |
|-----------------------|--------|
| Operating Voltage     | +12.5V |
| RF Input Power (RFIN) | +5dBm  |

### 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         |

### Environmental Specifications

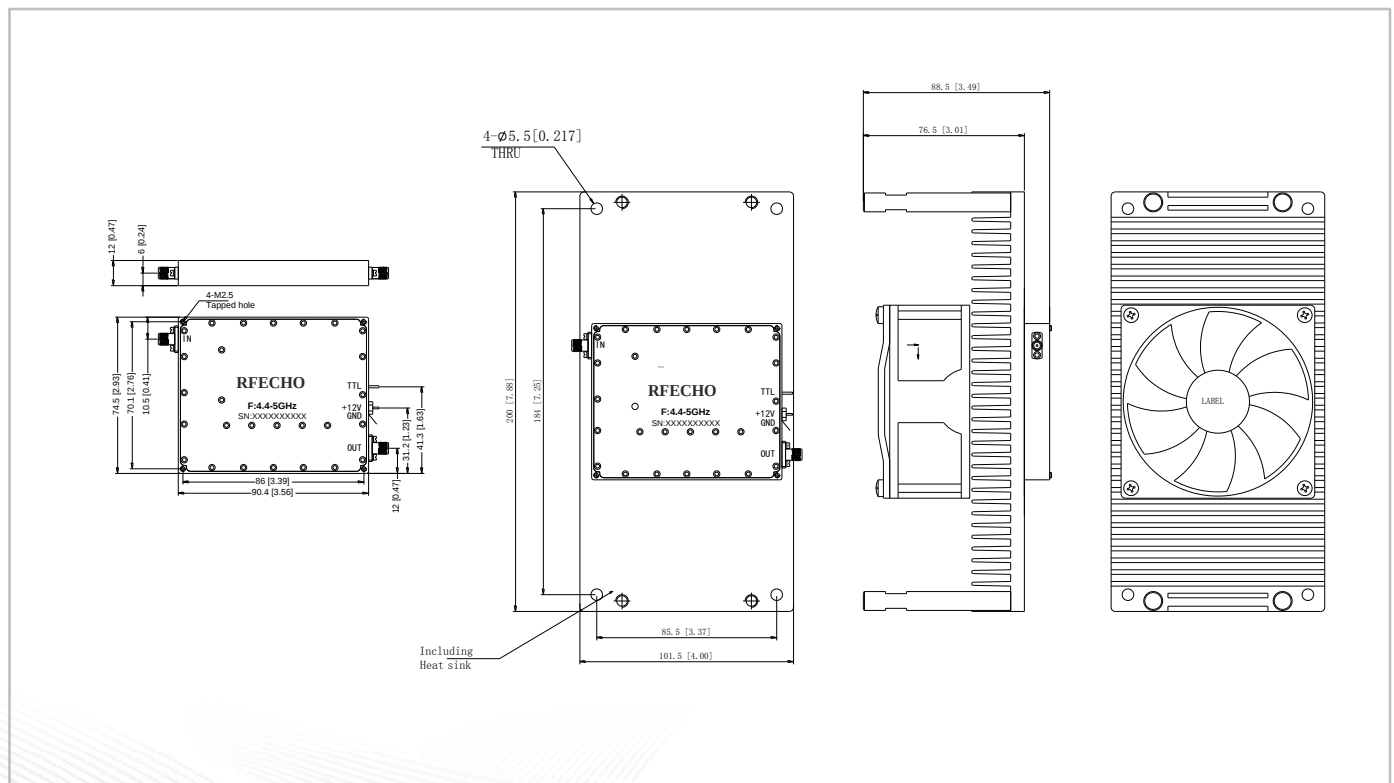
|                         |                                                                                  |
|-------------------------|----------------------------------------------------------------------------------|
| Operational Temperature | -40°C~+85°C                                       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

### Outline Drawing:

All Dimensions in mm (inches)

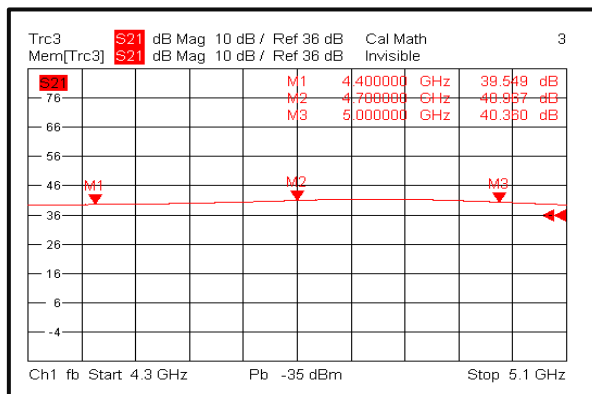
Tolerances  $\pm 0.2$ (0.008) (Excl heatsink)

Heat Sink required during operation(Sold Separately)

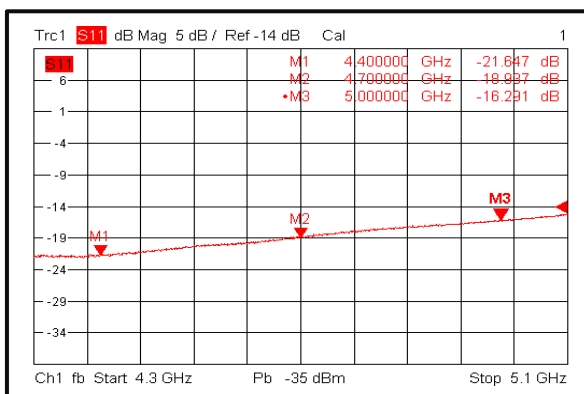




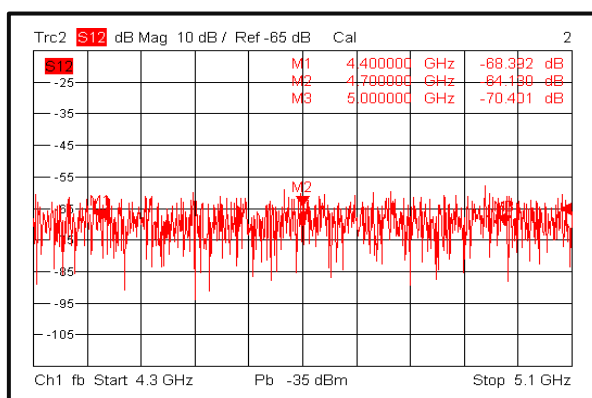
## Gain @+25°C



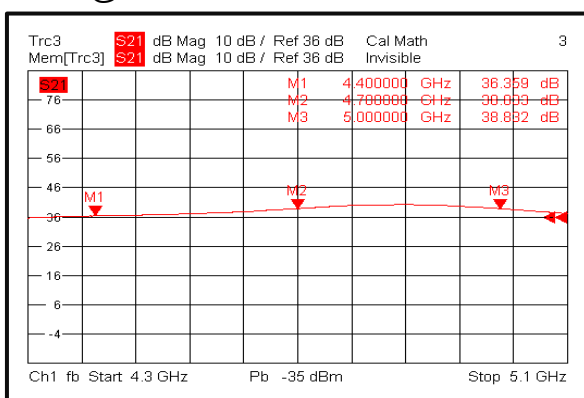
## Input Return Loss @+25°C



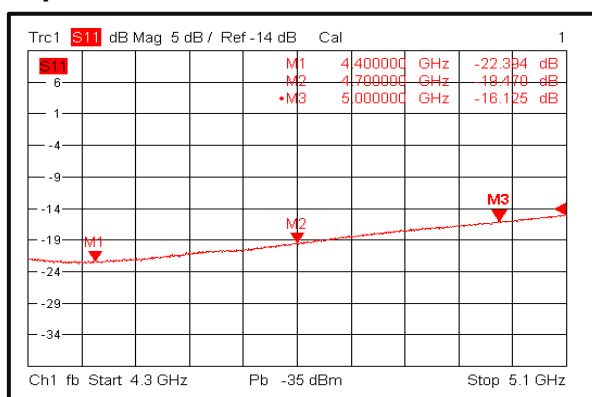
## Isolation @+25°C



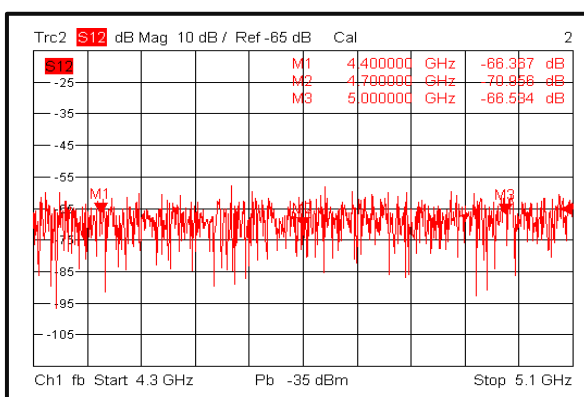
## Gain @-40°C



## Input Return Loss @-40°C

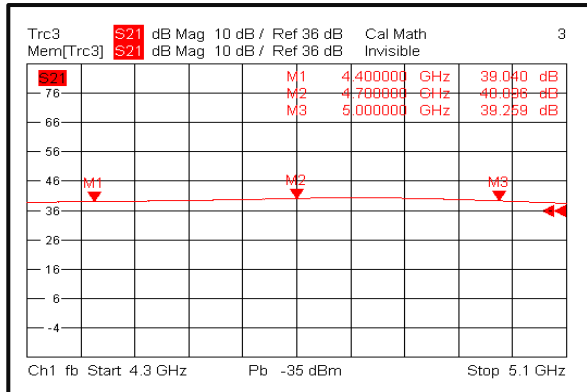


## Isolation @-40°C

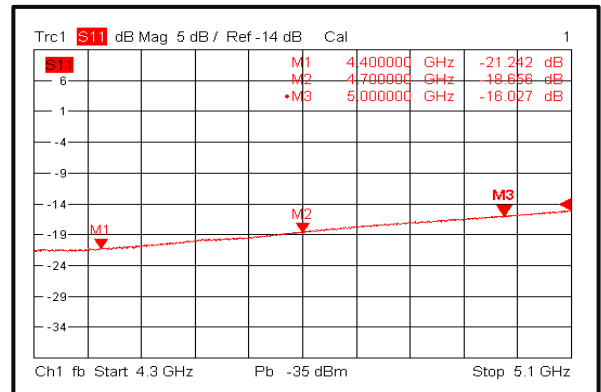




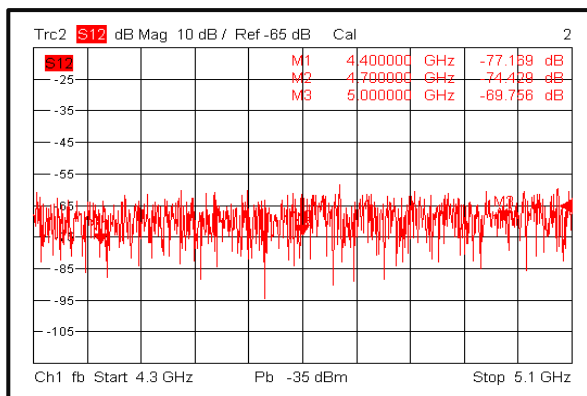
## Gain @+85°C



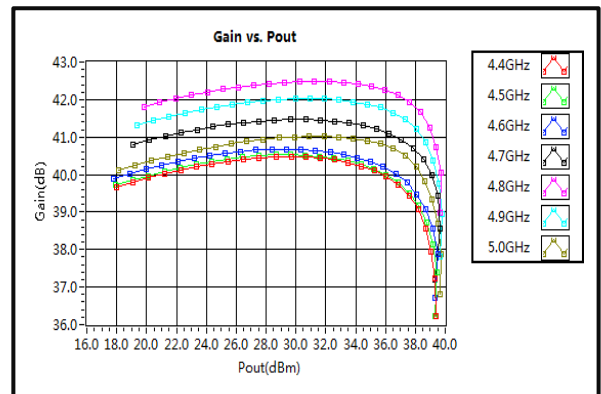
## Input Return Loss @+85°C



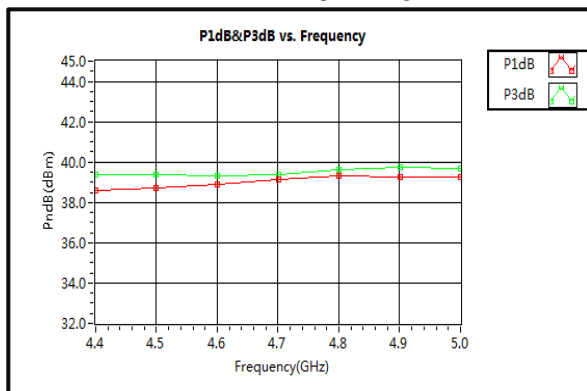
## Isolation @+85°C



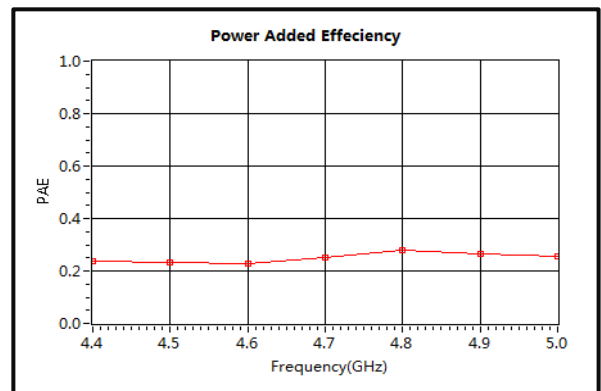
## Gain vs. Output Power



## P1dB&P3dB vs. Frequency

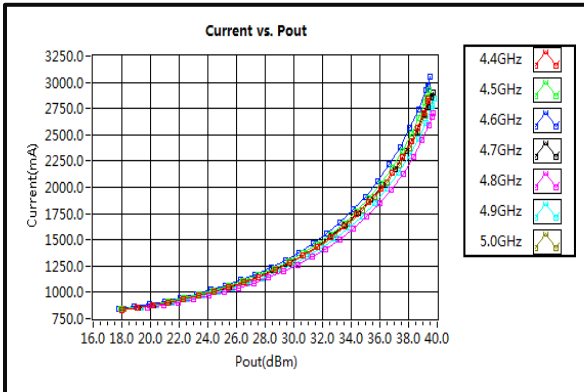


## Power Added Efficiency

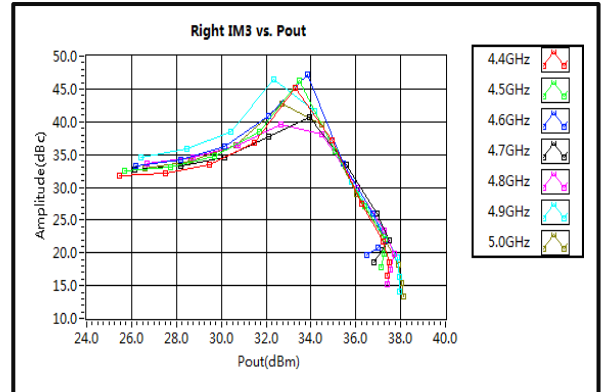




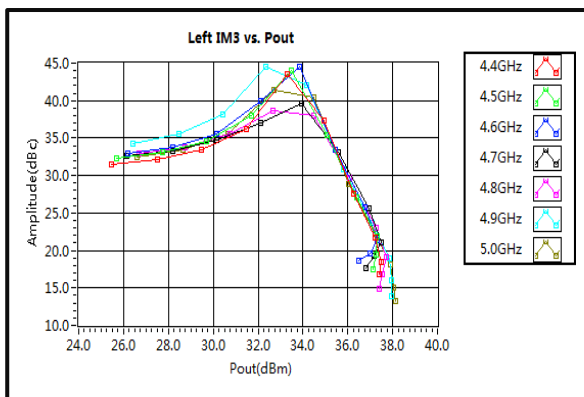
## Current



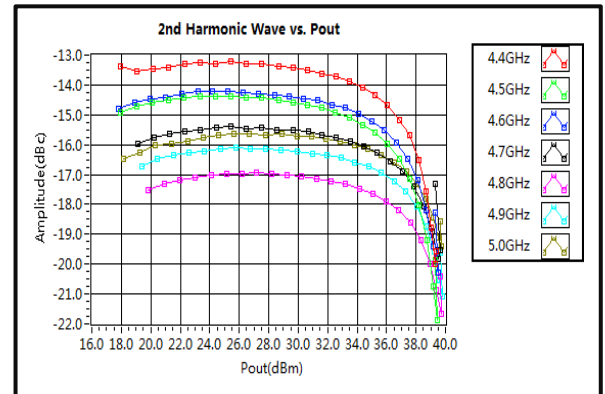
## Right IM3 vs. Pout



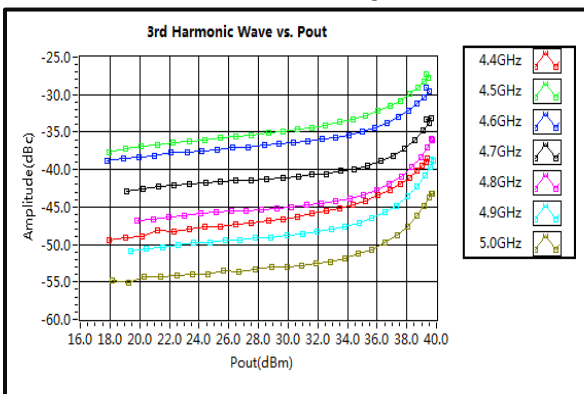
## Left IM3 vs. Pout



## 2nd Harmonic Wave Output Power



## 3rd Harmonic Wave Output Power



## 4th Harmonic Wave Output Power

