



# Ultra Wide Band Low Noise Amplifier 0.01GHz~3GHz

## Features

- Gain: 36dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +12V @ 220mA
- 50 Ohm Matched



## 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	0.01		1	1		3	GHz
Gain	34	36		33	35		dB
Gain Flatness		±1.0	±1.5		±1.0	±1.5	dB
Gain Variation Over Temperature (-40°C~+85°C )		±0.8			±0.8		dB
Noise Figure		1.5	2.0		1.7	2.5	dB
Input VSWR		1.8	3.2		1.5	2.0	: 1
Output VSWR		1.8	3.0		1.5	2.2	: 1
Output 1dB Compression Point (P1dB)	20	21		20	21		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (OIP3)		35			35		dBm
Supply Current (Vcc=+12V)		220	250		220	250	mA
Isolation S12		-60			-60		dB

Weight	1.2 ounces (Max.)	Impedance	50ohms
Input /Output Connectors	SMA-Female	Material	Aluminum
Finish	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Option with extra charge)



### Absolute Maximum Ratings

Operating Voltage	+15.5V
RF Input Power	-5dB m

### Biassing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
step3	Connect +12V biasing

### Power OFF Procedure

Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

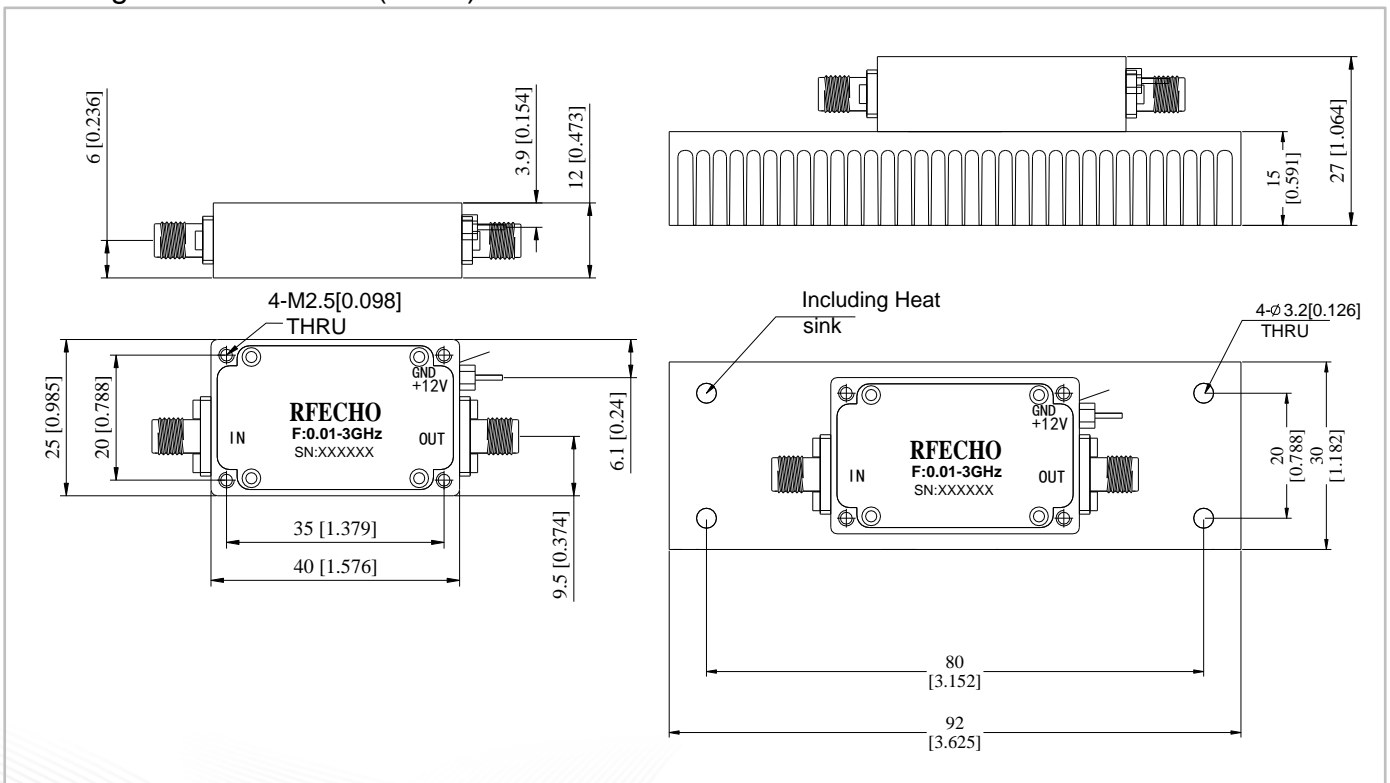
### Environmental Specifications

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:

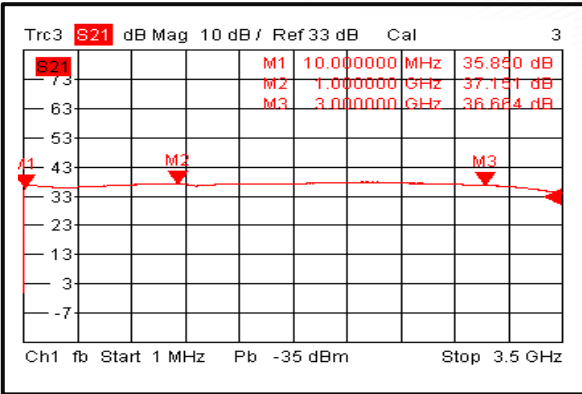
All Dimensions in mm (inches)  
Housing Tolerances  $\pm 0.1(0.004)$

Heat Sink required during operation(Sold Separately)

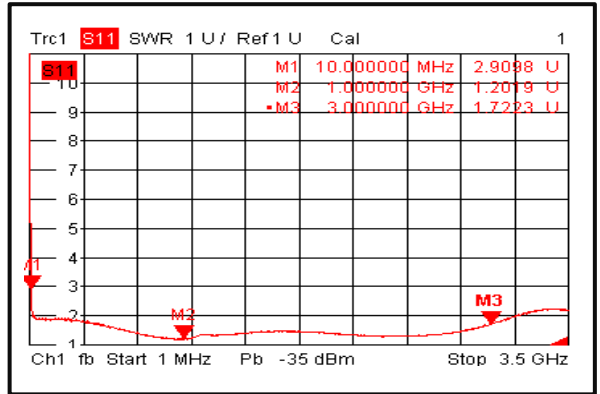




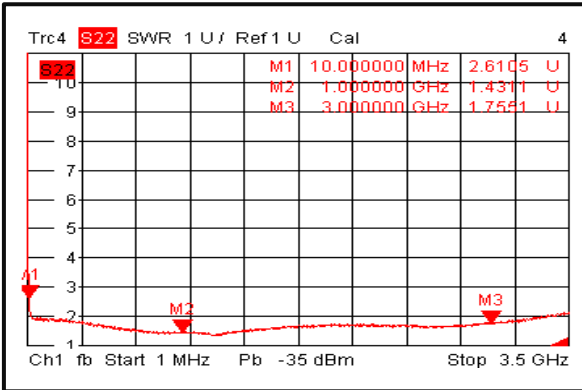
### Gain @+25°C



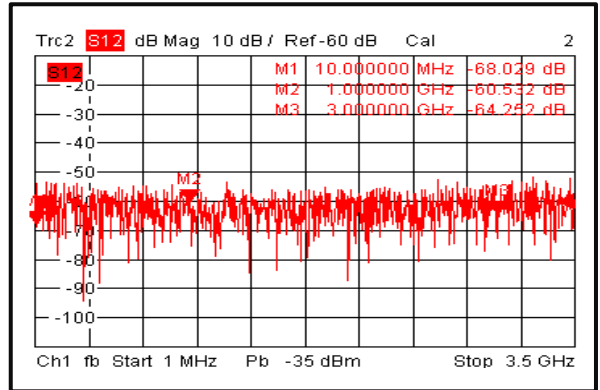
### Input VSWR @+25°C



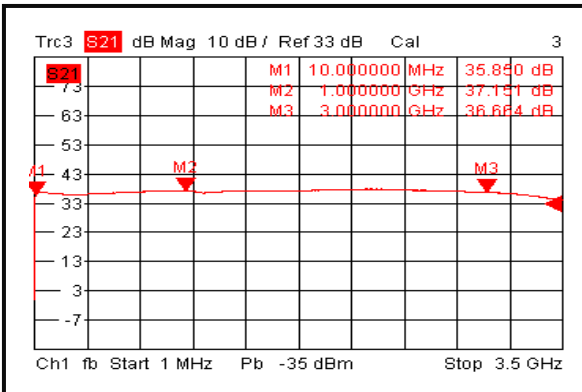
### Output VSWR @+25°C



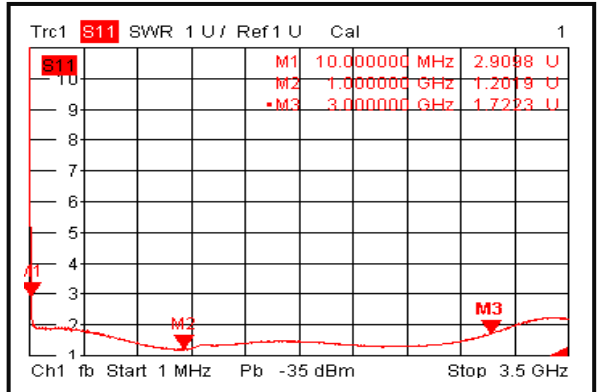
### Isolation @+25°C



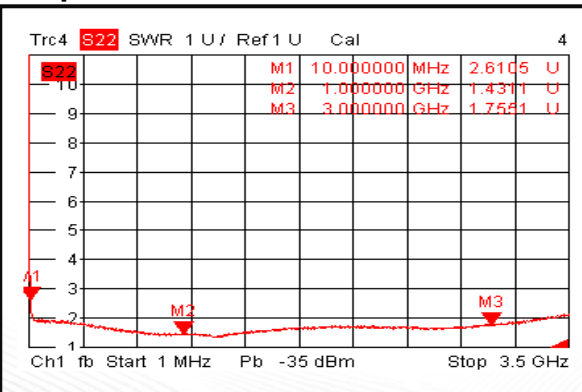
### Gain @-40°C



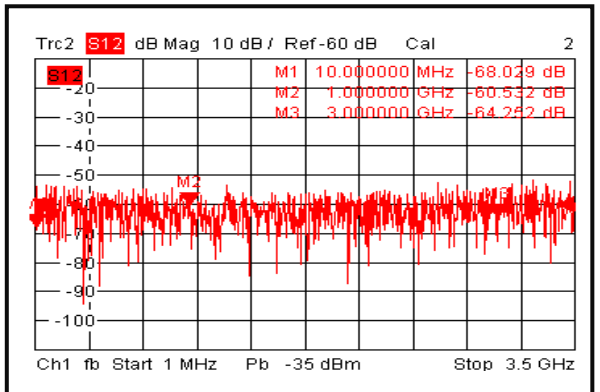
### Input VSWR @-40°C



### Output VSWR @-40°C

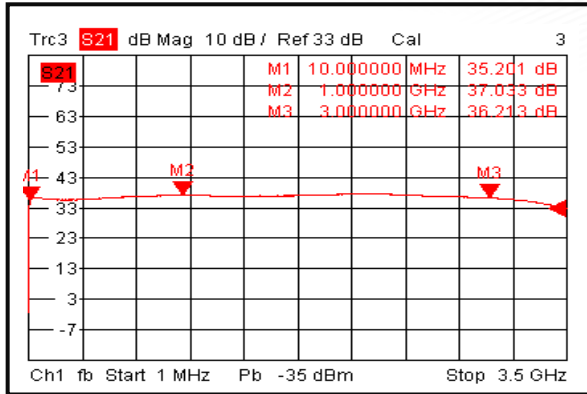


### Isolation @-40°C

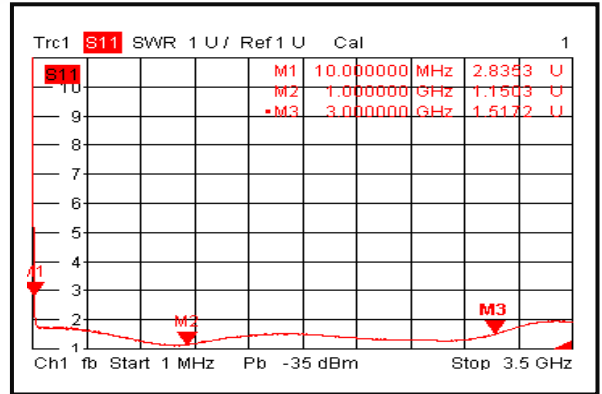




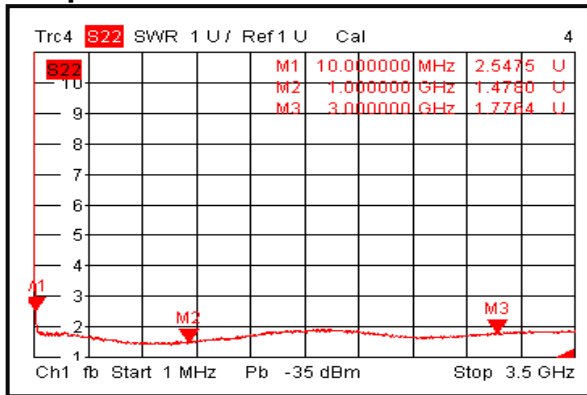
### Gain @+85°C



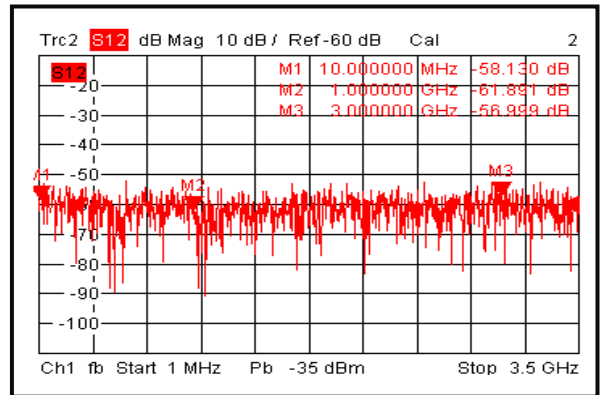
### Input VSWR @+85°C



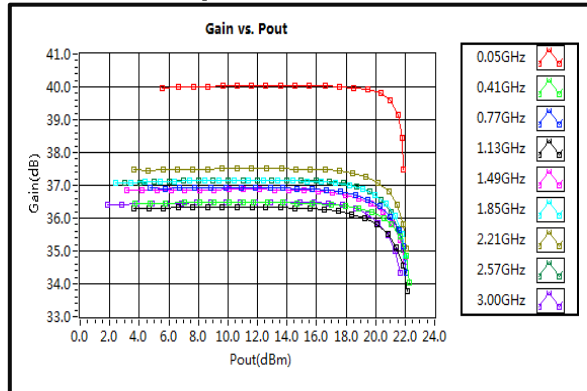
### Output VSWR @+85°C



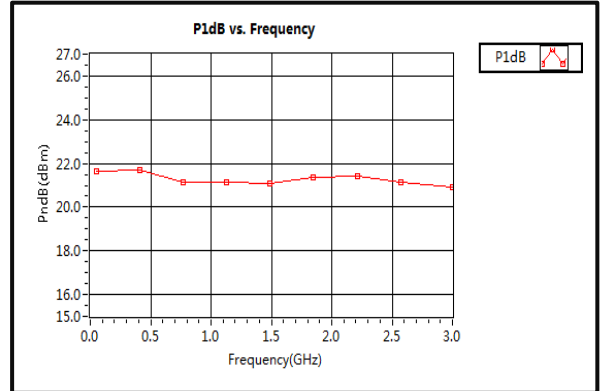
### Isolation @+85°C



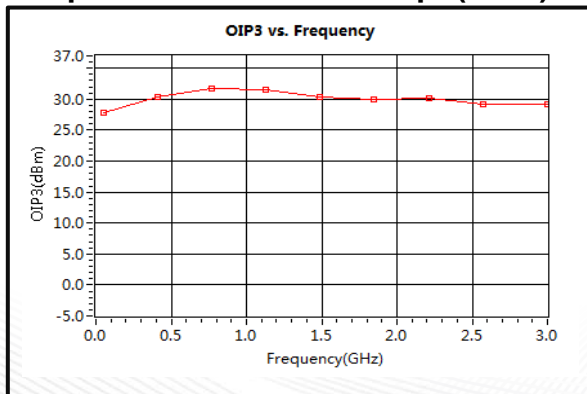
### Gain vs. Output Power



### P1dB vs. Frequency



### Output Third Order Intercept (OIP3)

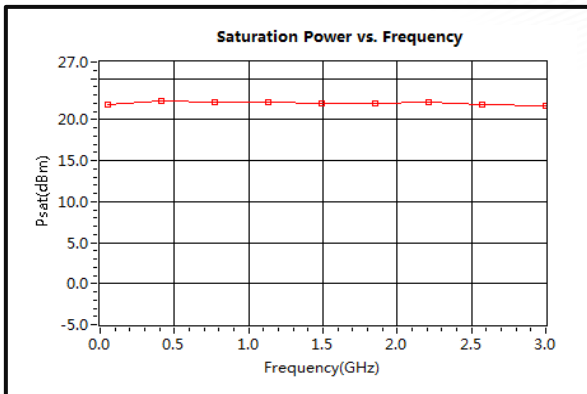


### Noise Figure

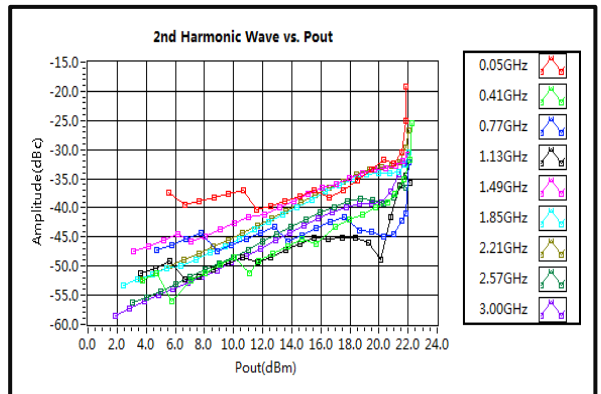




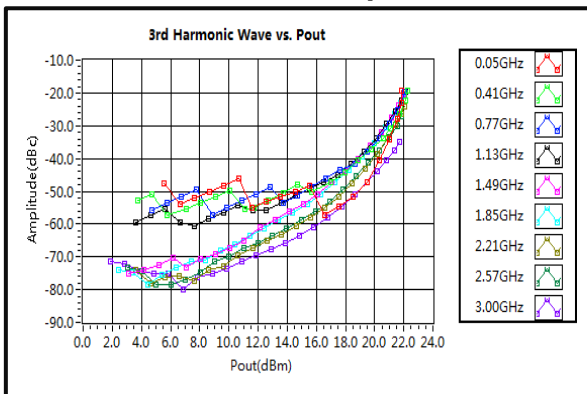
### Saturation Power vs. Frequency



### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



### 4th Harmonic Wave Output Power

