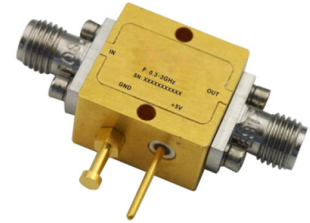




# Ultra Wide Band Low Noise Amplifier 0.3GHz~3GHz



## Features

- Gain: 15dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +5V

## Typical Applications

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

RF Microwave & VSAT  
Fiber Optics

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.3		1	1		2	2		3	GHz
Gain	12	15		10	13		6	9		dB
Gain Flatness		±0.8			±1.5			±1.5		dB
Gain Variation Over Temperature (-40°C~+85°C)		±0.3			±0.3			±0.4		dB
Noise Figure		2.0	2.5		1.6	2.5		1.5	2.8	dB
Input Return Loss		5			8			13		dB
Output Return Loss		7			9			9		dB
Output 1dB Compression Point (P1dB)	20	21		20	21		20	21		dBm
Saturated Output Power (Psat)		23			23			23		dBm
Output Third Order Intercept (OIP3)		28			28			28		dBm
Supply Current (Vcc=+5V)		90	110		90	110		90	110	mA
Isolation S12		-20			-18			-16		dB

Weight	0.5 Max. ounces	Impedance	50 ohms
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	+6V
RF Input Power (RFIN)	15dBm

### Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +5V biasing

### Power OFF Procedure

Step 1	Turn off +5V biasing
Step 2	Remove RF connection
Step 3	Remove Ground

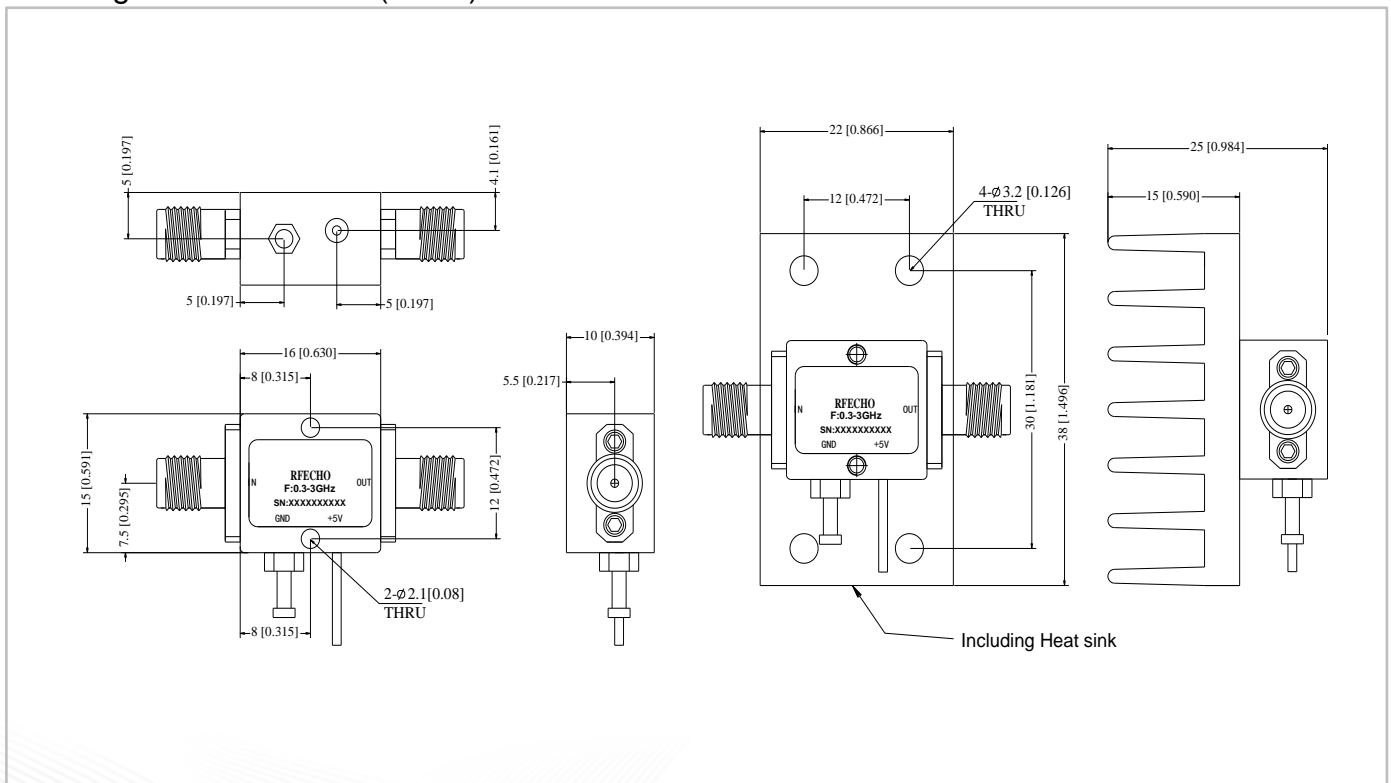
### Environmental Specifications

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:

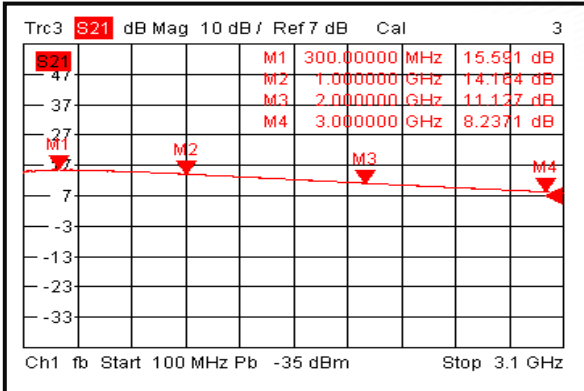
All Dimensions in mm (inches)  
Housing Tolerances  $\pm 0.1$  (0.004)

Heat Sink required during operation (Sold Separately)

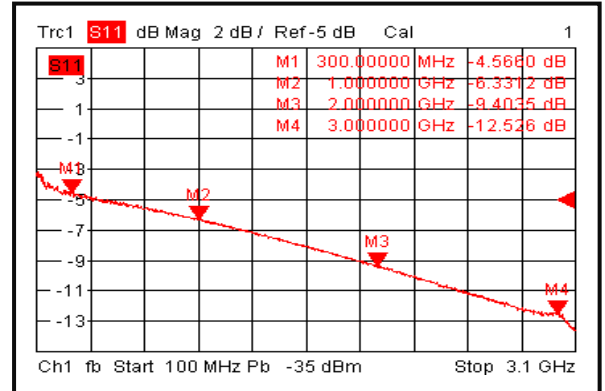




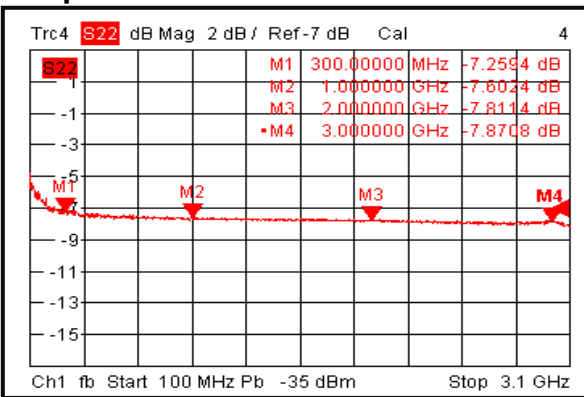
### Gain @+25°C



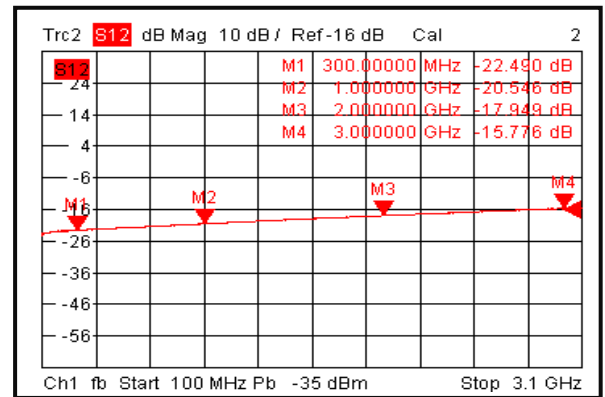
### Input Return Loss @+25°C



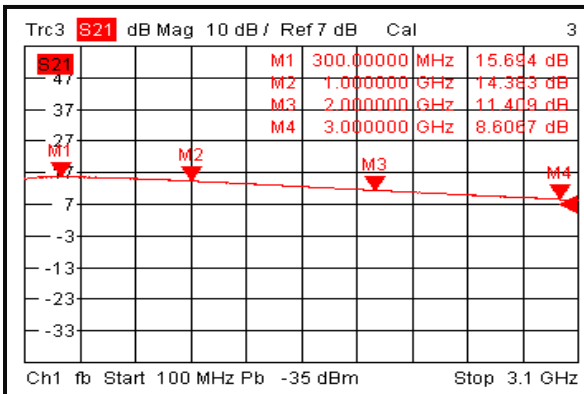
### Output Return Loss @+25°C



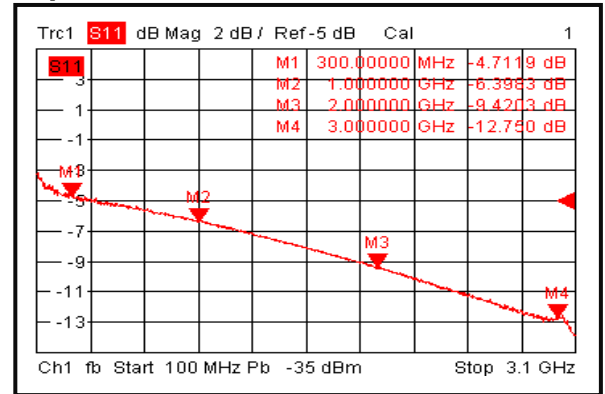
### Isolation @+25°C



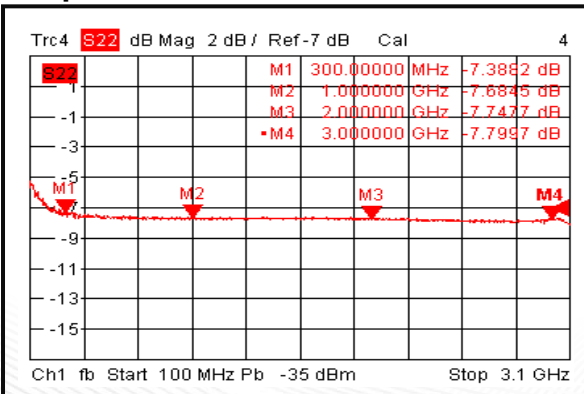
### Gain @-40°C



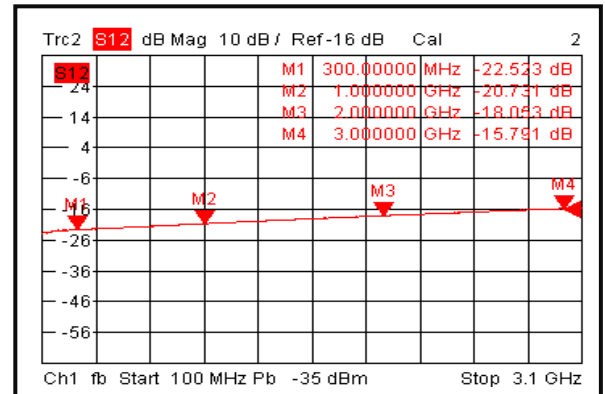
### Input Return Loss @-40°C



### Output Return Loss @-40°C

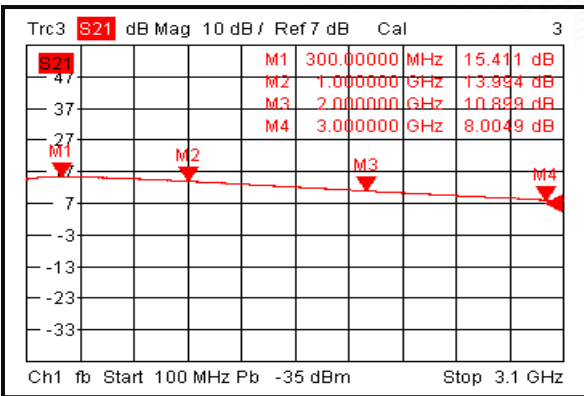


### Isolation @-40°C

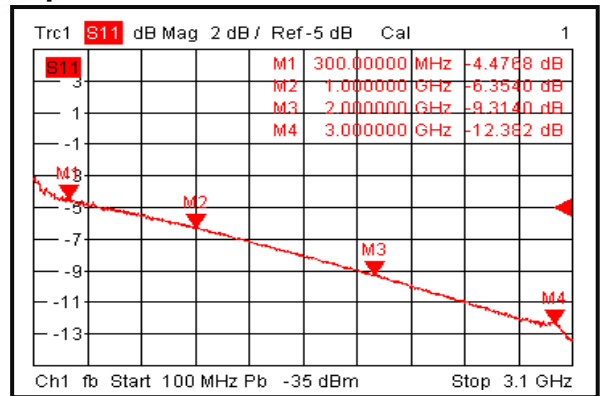




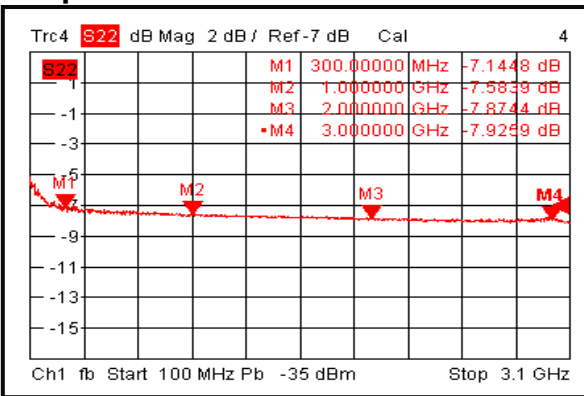
### Gain @+85°C



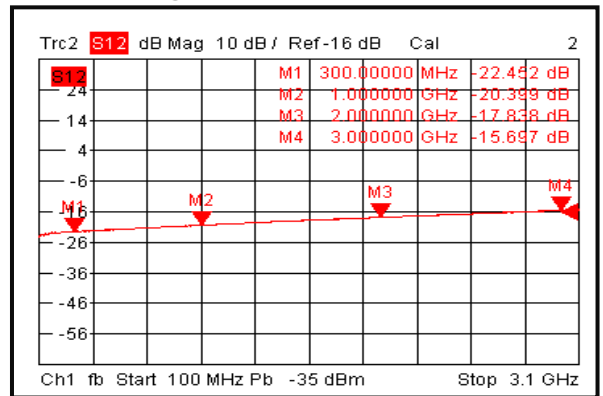
### Input Return Loss @+85°C



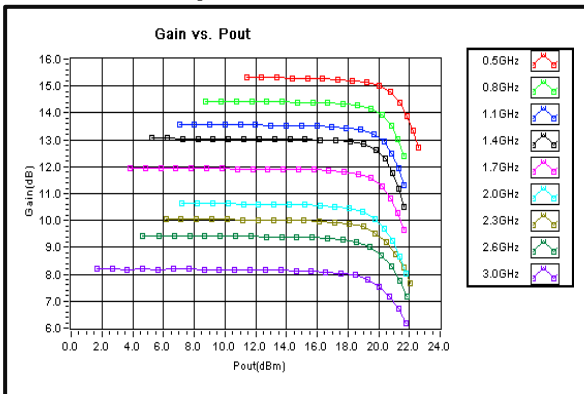
### Output Return Loss @+85°C



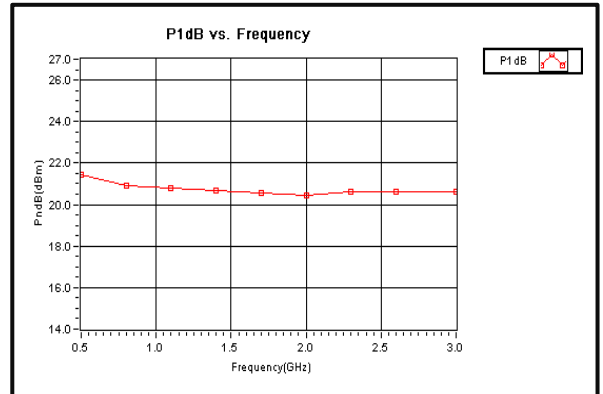
### Isolation @+85°C



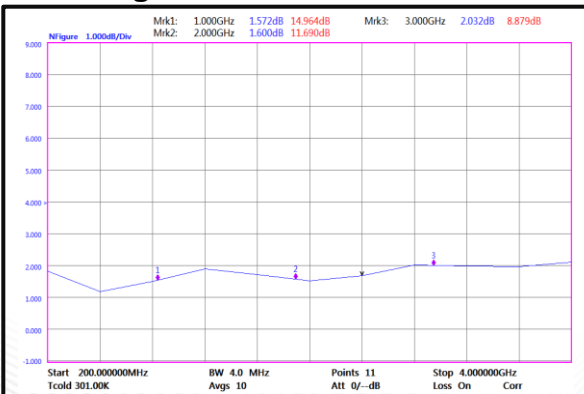
### Gain vs. Output Power



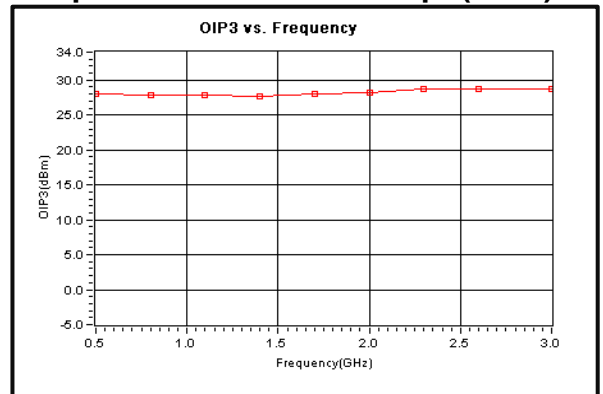
### P1dB vs. Frequency



### Noise Figure

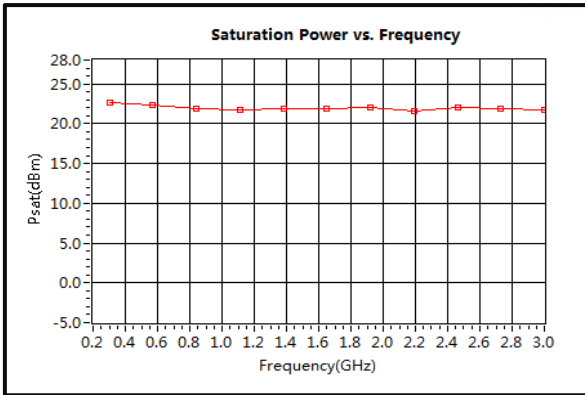


### Output Third Order Intercept (OIP3)

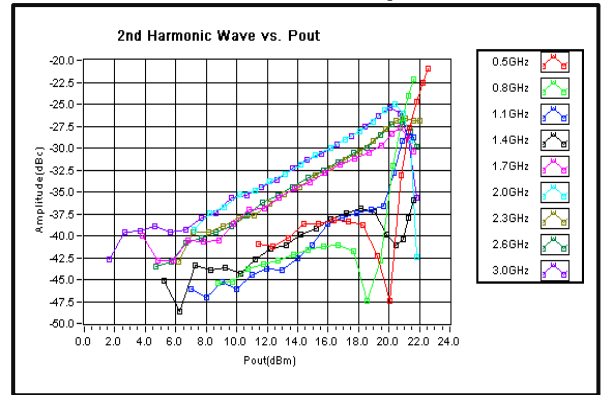




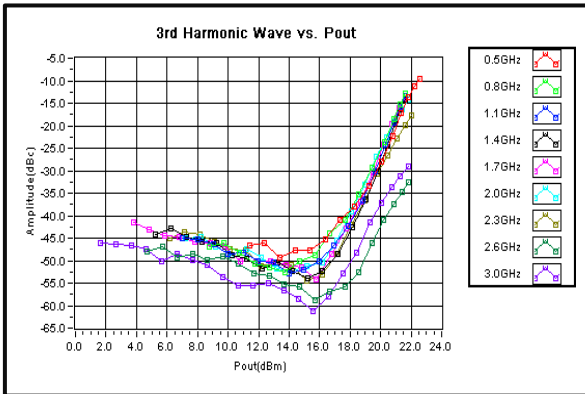
### Saturation Power vs. Frequency



### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



### 4th Harmonic Wave Output Power

