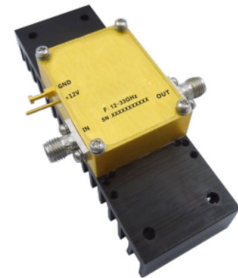




# Wide Band Low Noise Amplifier 12GHz~33GHz



## Features

- Gain: 32dB Typical
- Noise Figure: 2.5dB Typical
- Output P1dB: 21dBm Typical
- Supply Voltage: +12V @300mA
- 50 Ohm Matched

## Typical Applications

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

RF Microwave & VSAT  
Fiber Optics

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	12		22	22		30	30		33	GHz
Gain	31	35	39	32	36	39	29	32	38	dB
Gain Flatness		±2.5			±1.0			±3.0		dB
Gain Variation Over Temperature (-40~+85°C)		±0.8			±1.0			±1.0		dB
Noise Figure		2.5	4.5		3.5	5.0		3.5	5.0	dB
Input VSWR		1.6	2.2		1.8	2.5		1.8	2.5	: 1
Output VSWR		1.5	2.2		1.8	2.5		1.8	2.5	: 1
Output 1dB Compression Point (P1dB)	20	23		19	23		19	23		dBm
Saturated Output Power (Psat)		25			24			24		dBm
Output Third Order Intercept (OIP3)		32			33			33		dBm
Supply Current (Vcc=+12V)		380	450		380	450		380	450	mA
Isolation S12		-60			-55			-50		dB

Weight	3.2 ounces(Typ.)	Impedance	50ohms
Input /Output Connectors	2.92mm-Female	Material	Aluminum
Finishing	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Optional)



### Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power (RFIN)	-30dBm

### Biassing 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

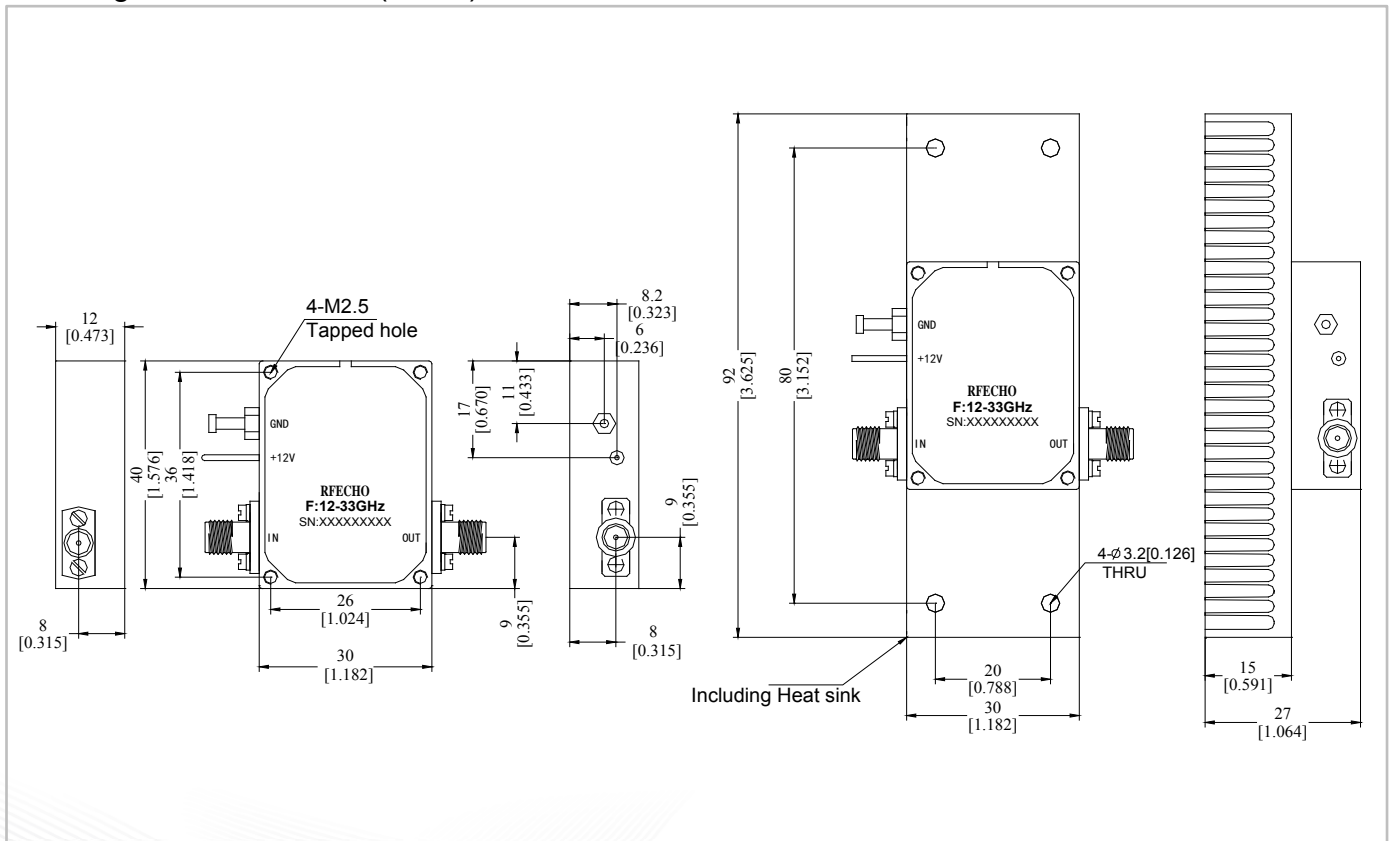
### Environmental Specifications

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:

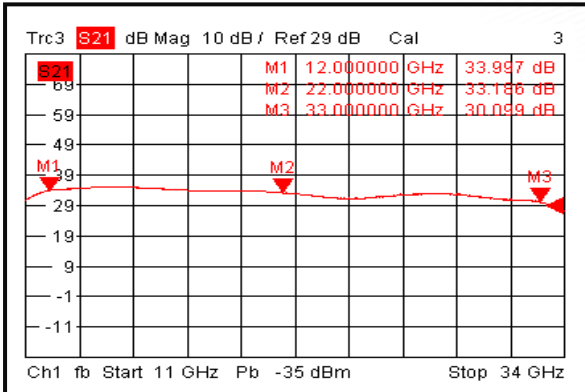
All Dimensions in mm (inches)  
Housing Tolerances  $\pm 0.1$  (0.004)

Heat Sink required during operation(Sold Separately)

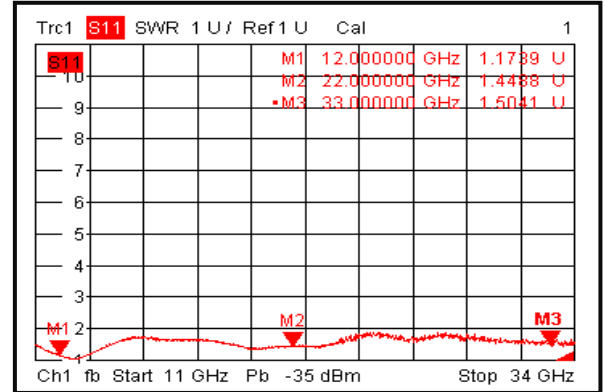




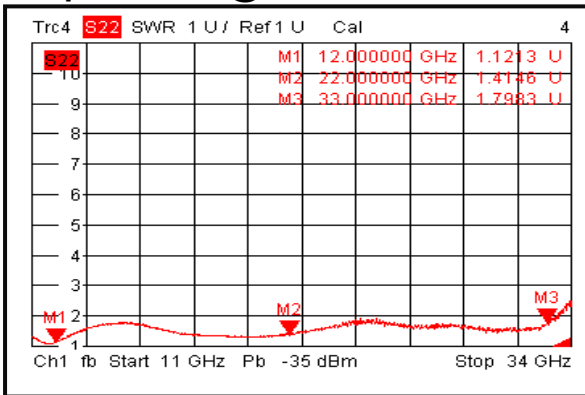
### Gain @+25°C



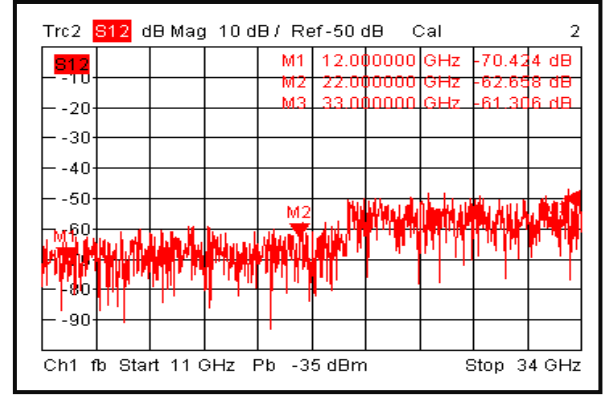
### Input VSWR @+25°C



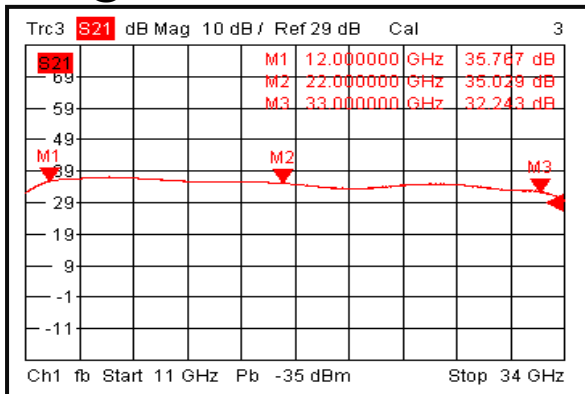
### Output VSWR @+25°C



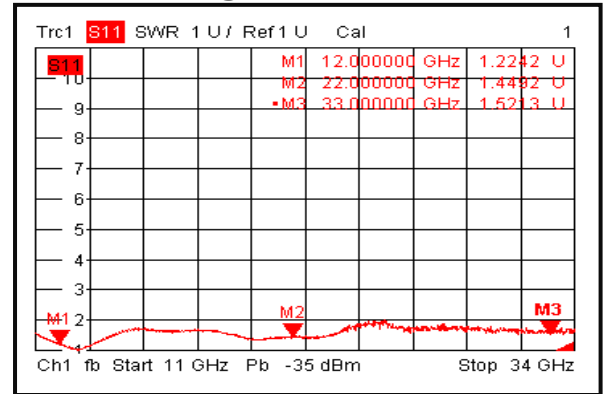
### Isolation @+25°C



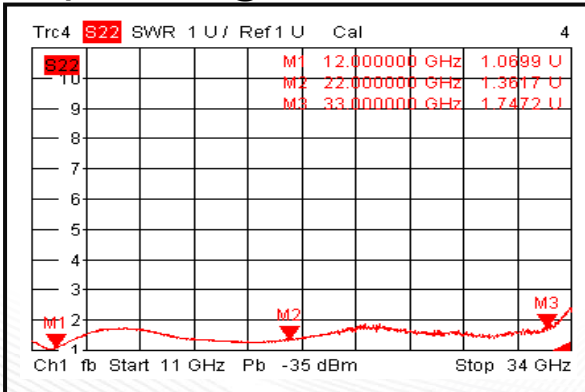
### Gain @-40°C



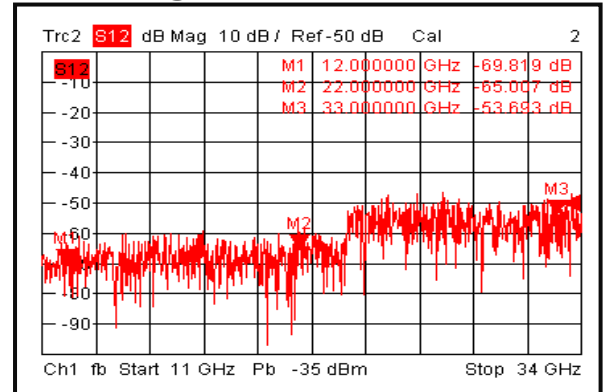
### Input VSWR @-40°C



### Output VSWR @-40°C

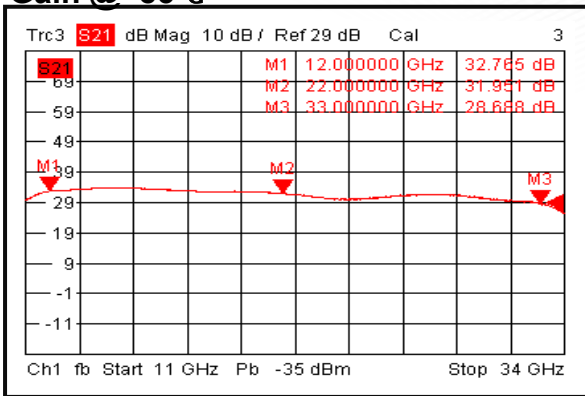


### Isolation @-40°C

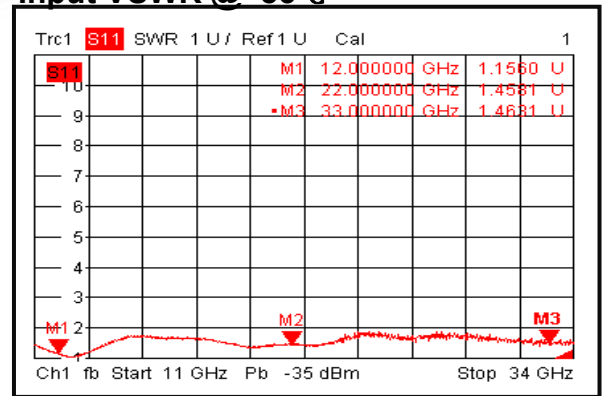




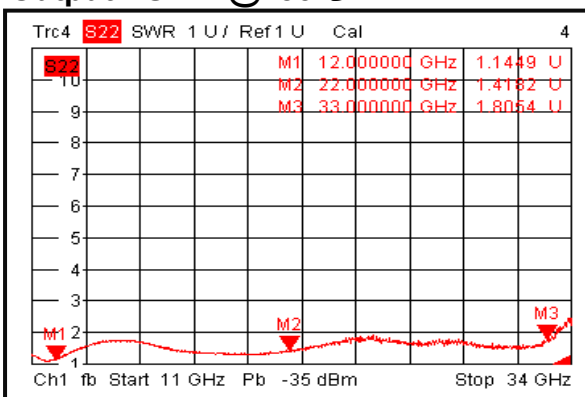
### Gain @+85°C



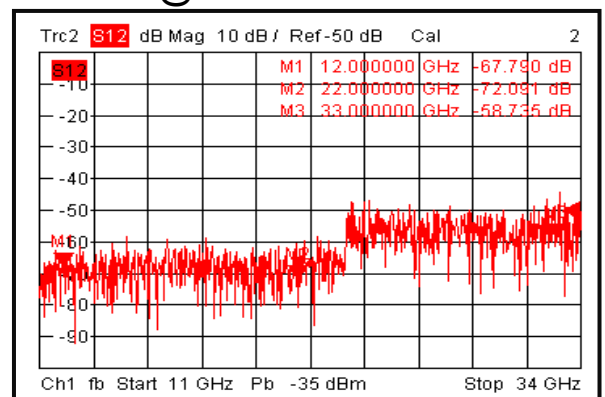
### Input VSWR @+85°C



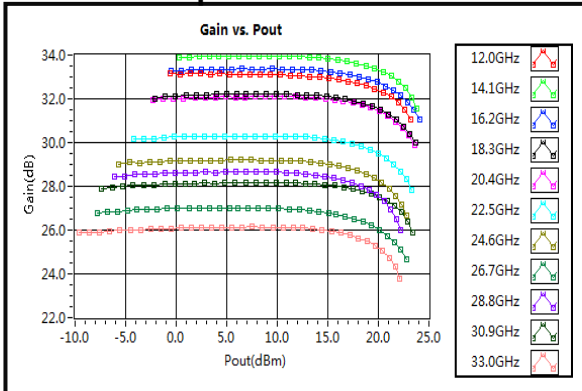
### Output VSWR @+85°C



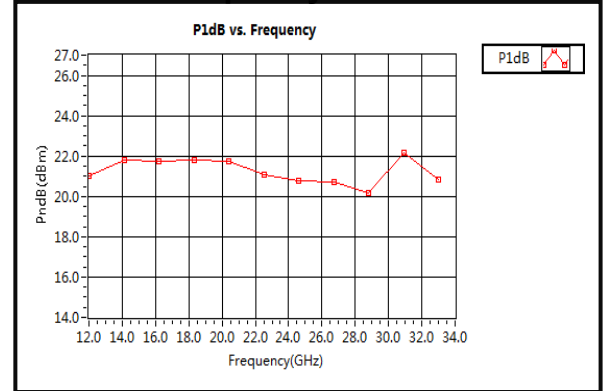
### Isolation @+85°C



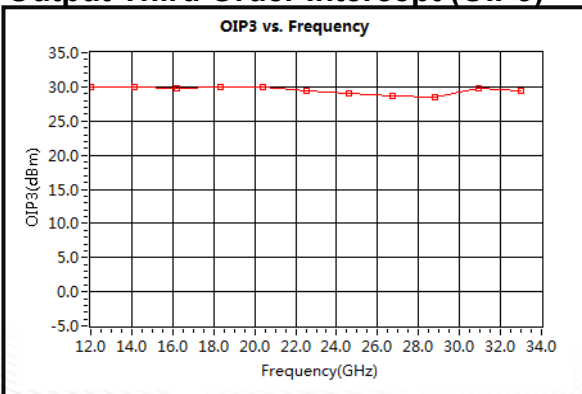
### Gain vs. Output Power



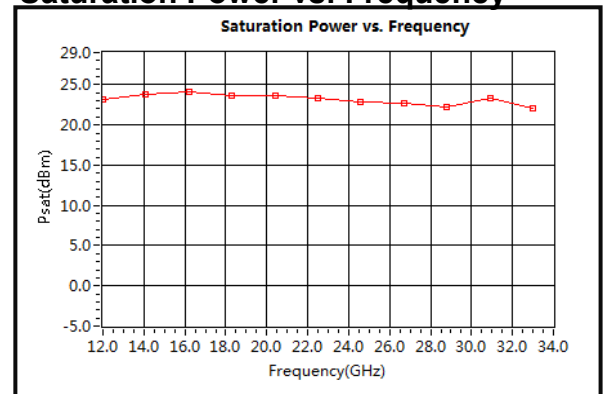
### P1dB vs. Frequency



### Output Third Order Intercept (OIP3)

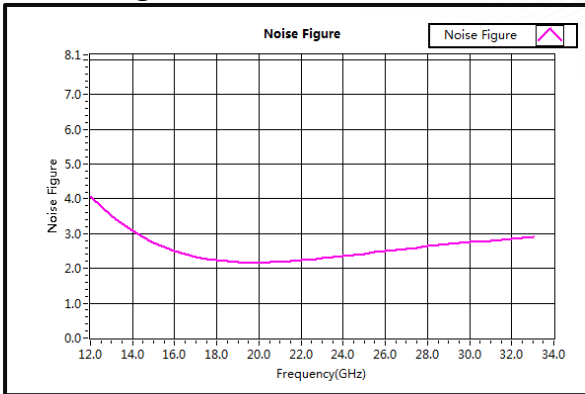


### Saturation Power vs. Frequency

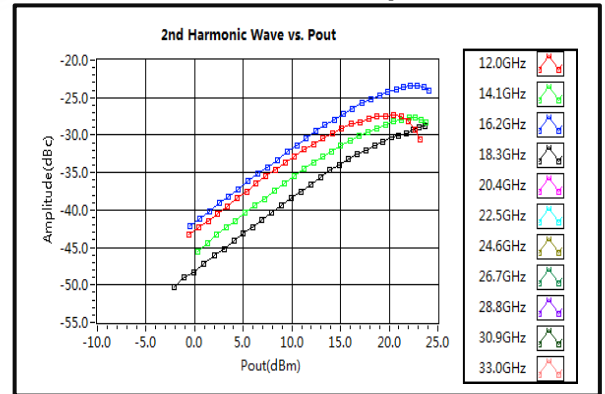




### Noise Figure



### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power

