



# Low Noise Amplifier 5GHz~20GHz

## Features

- Gain: 13dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +15dBm Typical
- Supply Voltage: +5V @ 30mA
- 50 Ohm Matched Input / Output
- Size: 0.63" x 0.59" x 0.39"



## 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	5		12	12		20	GHz
Gain	12	13		10	12		dB
Gain Flatness		±0.5	±1.0		±1.0	±1.5	dB
Gain Variation Over Temperature (-40 to +85)		±1.0			±1.0		dB
Noise Figure		2.0	3.0		2.0	3.0	dB
Input VSWR		3.5			3.0		: 1
Output VSWR		1.6	2.2		1.6	2.2	: 1
Output 1dB Compression Point (P1dB)	13	15		13	15		dBm
Saturated Output Power (Psat)		17			17		dBm
Output Third Order Intercept (OIP3)		26			26		dBm
Supply Current (Idd) (Vdd=+5V)		30	50		30	50	mA
Isolation S12		-23			-23		dB

Weight	0.35ounces	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	+5.5V
RF Input Power (RFIN)	+15dBm

### Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
step 3	Connect -5V biasing
Step 4	Connect +5V biasing

### Power OFF Procedure

Step 1	Turn off +5V biasing
Step 2	Turn off -5V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

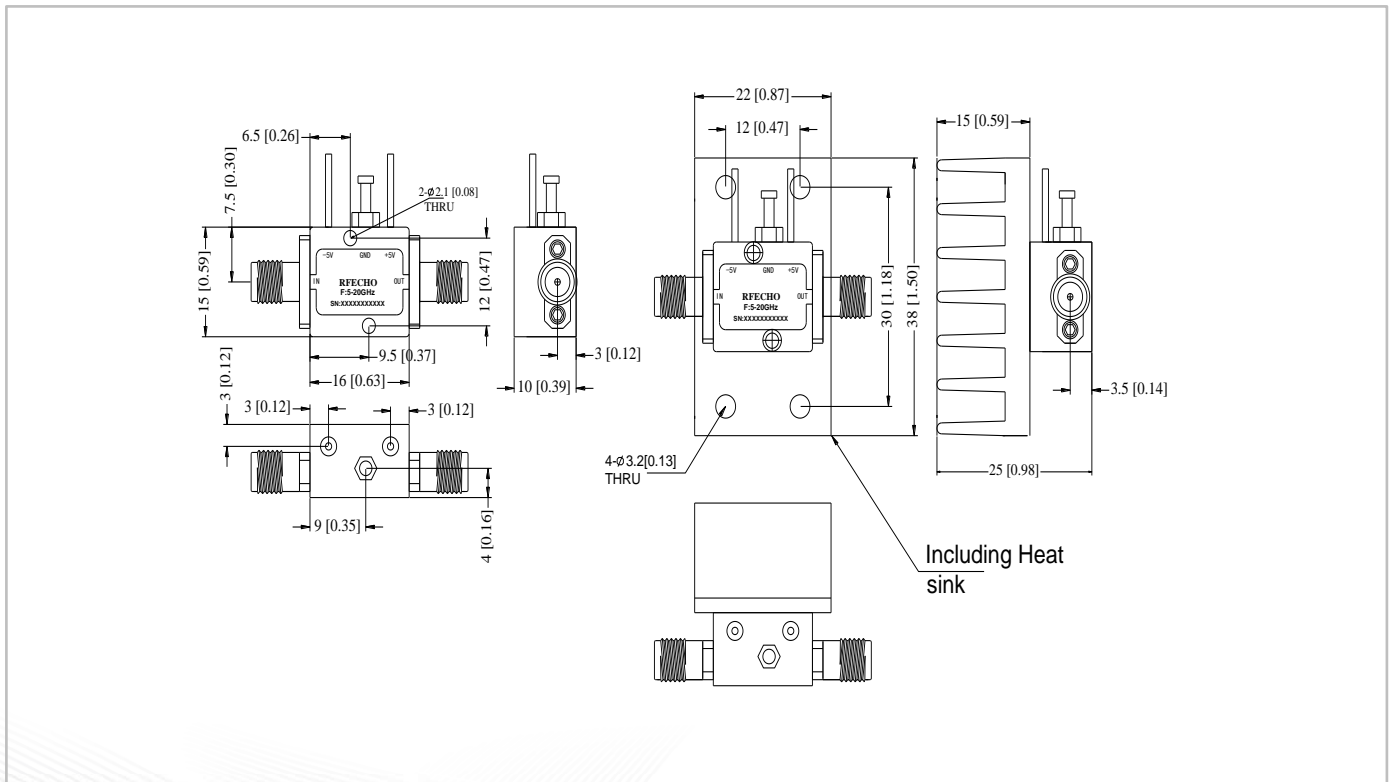
### Environmental Specifications

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:

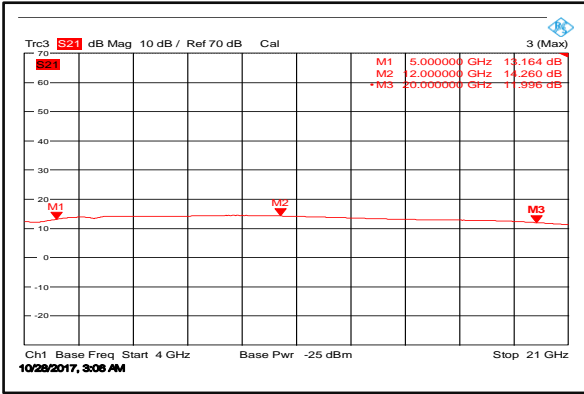
All Dimensions in mm (inches)

Heat Sink required during operation(Sold Separately)

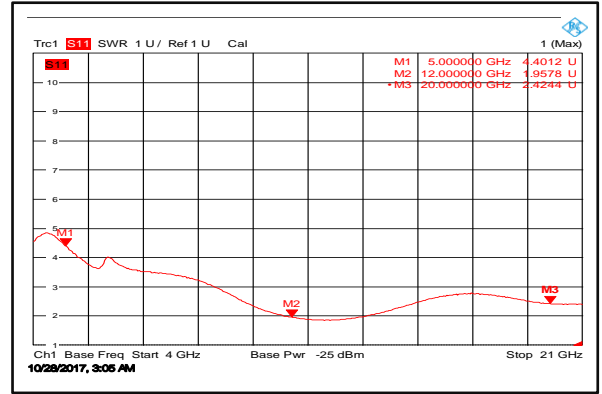




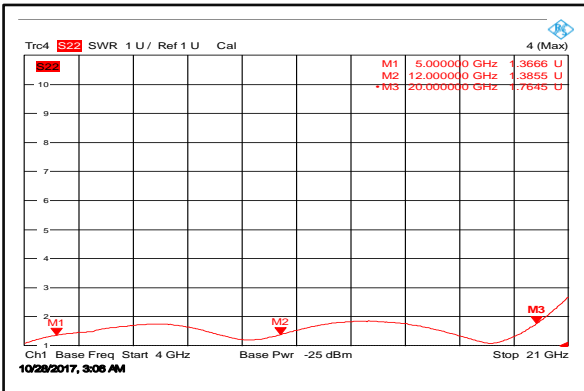
### Gain



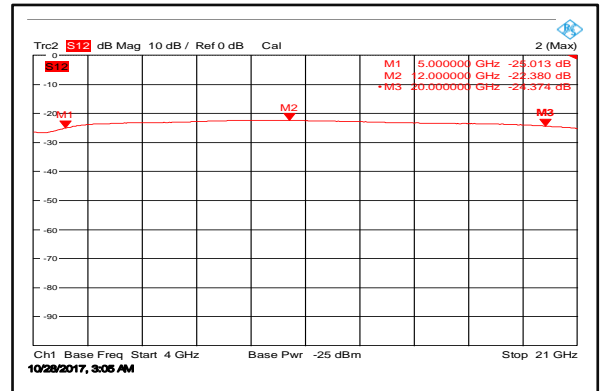
### Input VSWR



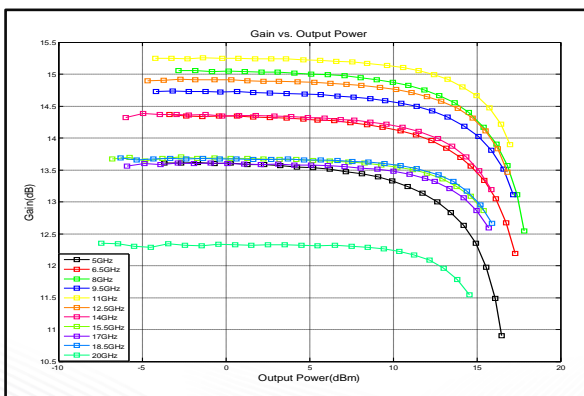
### Output VSWR



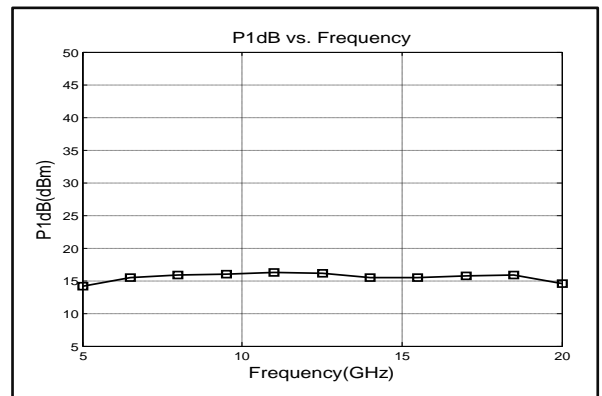
### Isolation



### Gain vs. Output Power

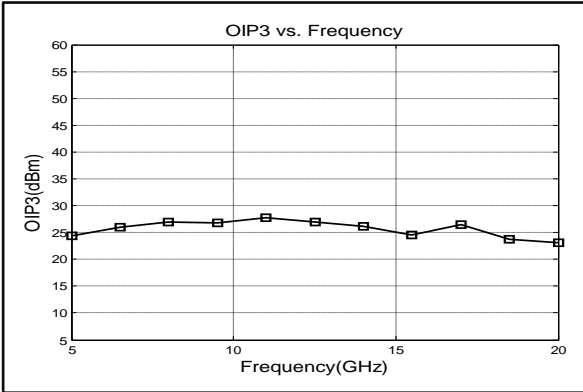


### P1dB vs. Frequency

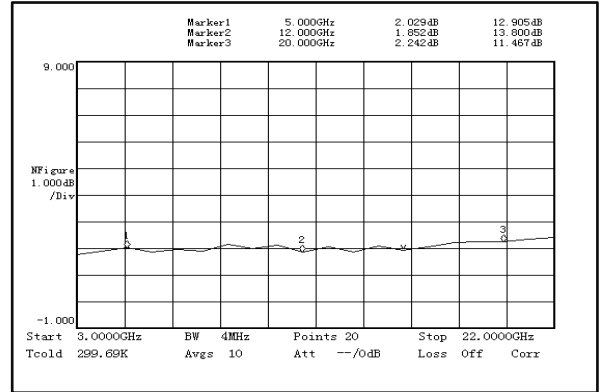




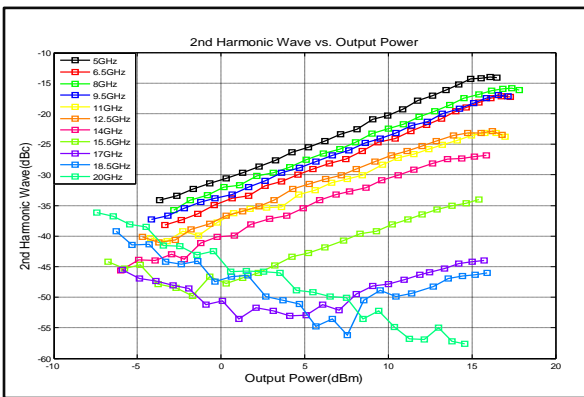
### Output Third Order Intercept (OIP3)



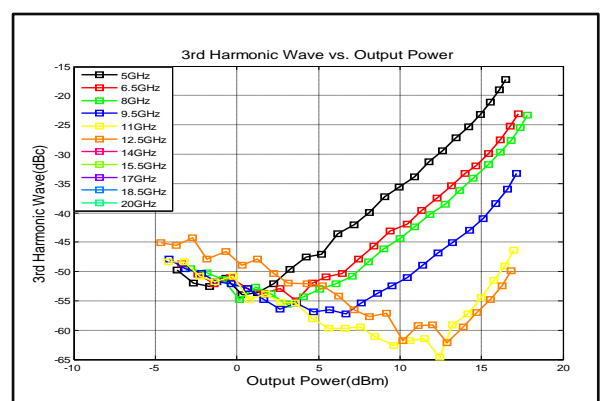
### Noise Figure



### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



### 4th Harmonic Wave Output Power

