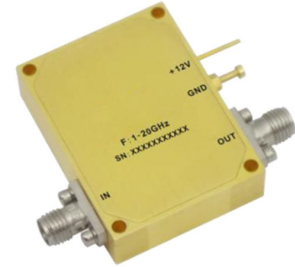




Ultra Wide Band Low Phase Noise Amplifier 1GHz~20GHz

Features

- Gain: 35 dB Typical
- Noise Figure: 5dB Typical
- P1dB Output Power: +14dB m Typical
- Supply Voltage: +12V @ 190mA
- 50 Ohm Matched Input / Output



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	1		2	2		18	18		20	GHz
Gain	28	35			33	36		30	34	dB
Gain Flatness		±3.0	±5.0		±2.0	±2.8		±1.5	±2.0	dB
Gain Variation Over Temperature (-40°C~+85°C)		±1.5			±2.0			±2.0		dB
Noise Figure		10			5			9		dB
Input VSWR		2			1.5	2		1.5	2	: 1
Output VSWR		2			1.5	2.3		1.5	2.2	: 1
Output 1dB Compression Point (P1dB)	12	14		10	15		5	7		dBm
Saturated Output Power (Psat)		15			17			8		dBm
Output Third Order Intercept (OIP3)		26			28			16		dBm
Phase Noise @ 1 kHz		-150			-150			-150		dBc
Isolation S12		-55			-55			-55		dB
Supply Current (Vcc=+12V)		190	220		190	220		190	220	mA

Weight	3.55 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	+15V
RF Input Power (RFIN)	-11dBm

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

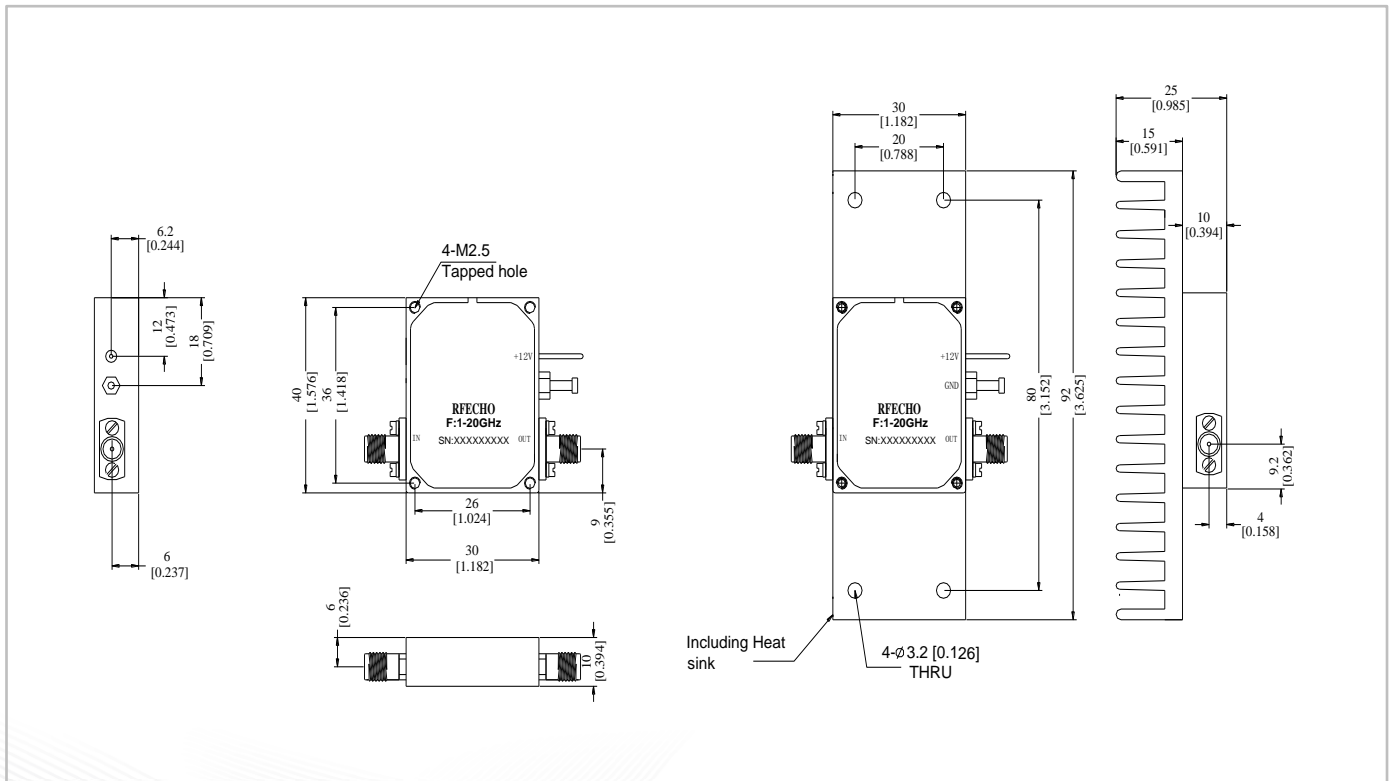
Environmental Specifications

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:

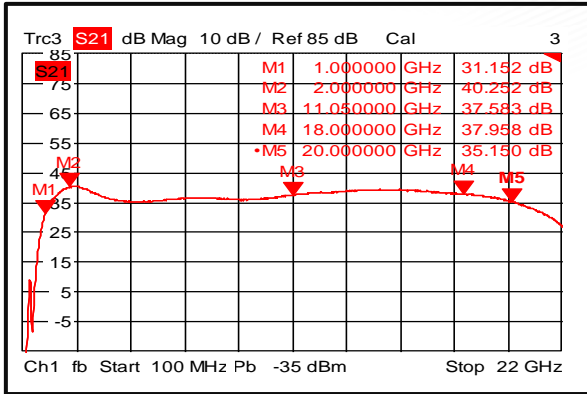
All Dimensions in mm (inches)

Heat Sink required during operation(Sold Separately)

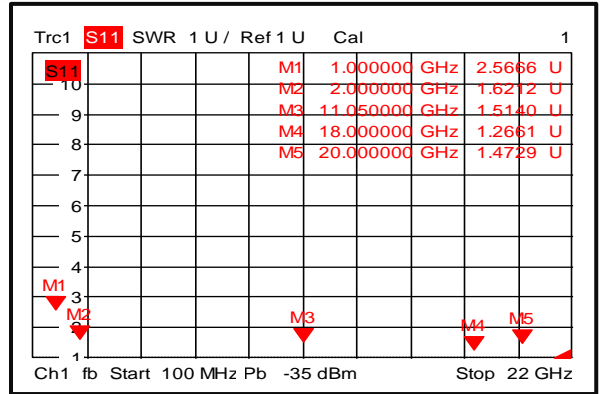




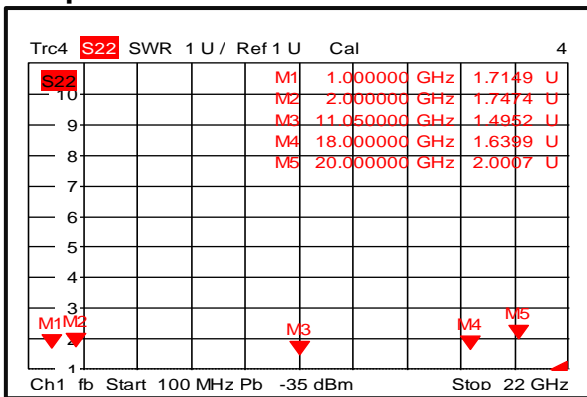
Gain @+25°C



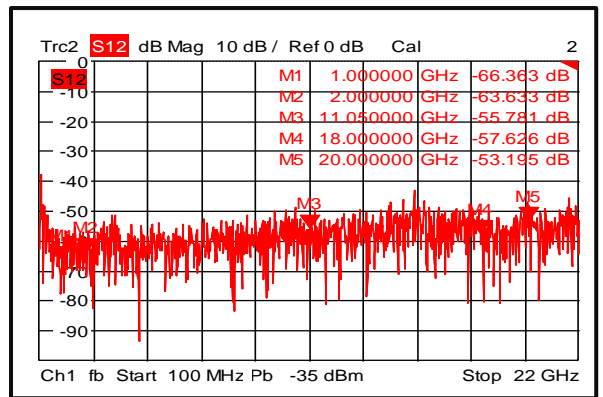
Input VSWR @+25°C



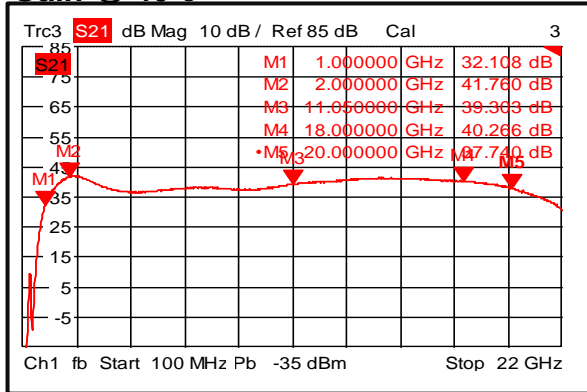
Output VSWR @+25°C



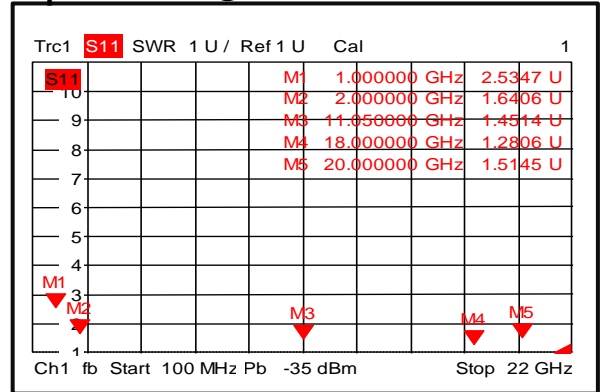
Isolation @+25°C



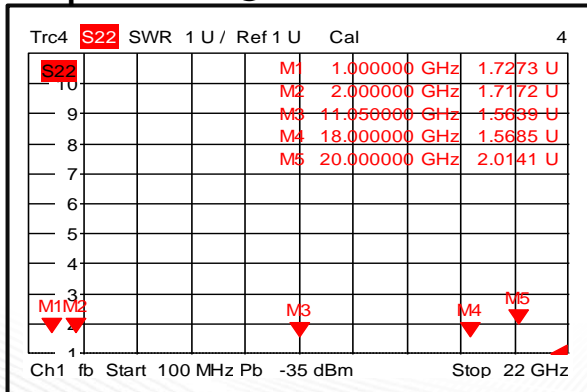
Gain @-40°C



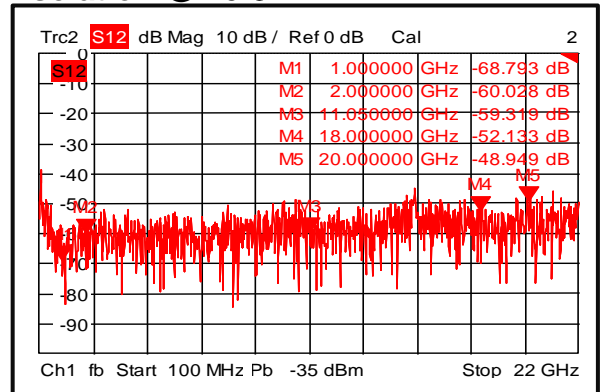
Input VSWR @-40°C



Output VSWR @-40°C

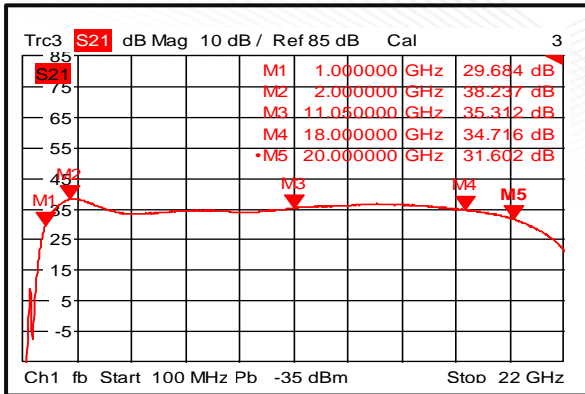


Isolation @-40°C

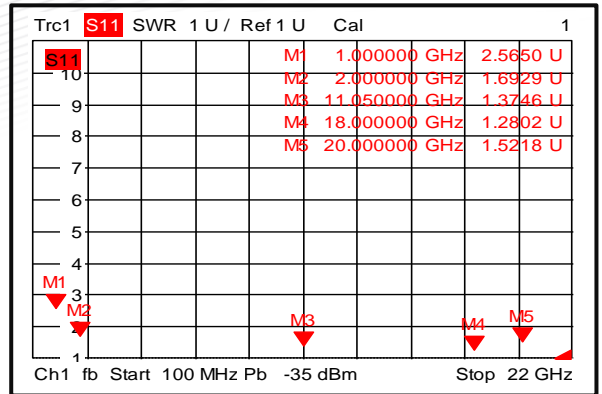




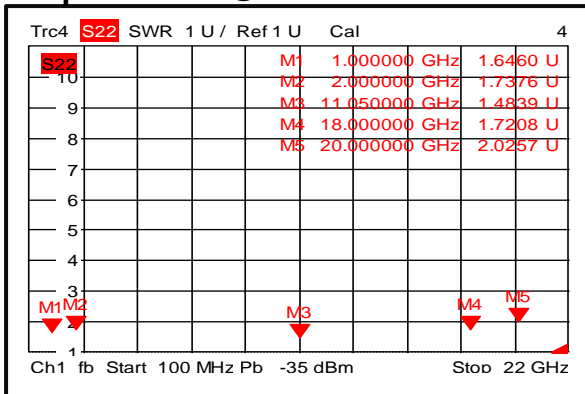
Gain @+85°C



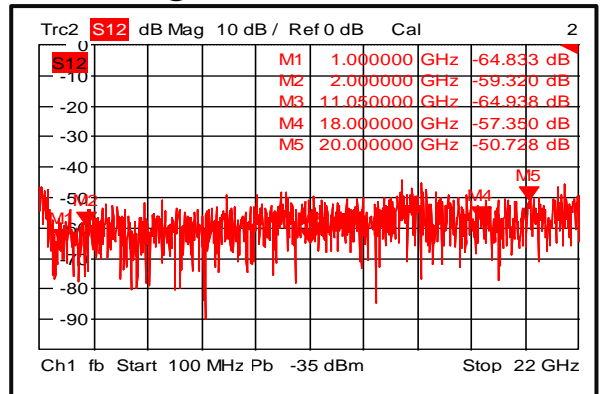
Input VSWR @+85°C



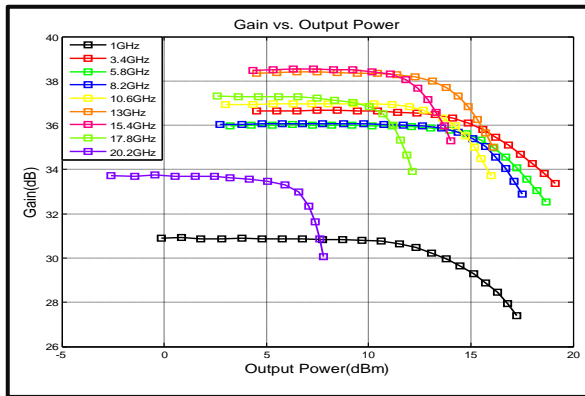
Output VSWR @+85°C



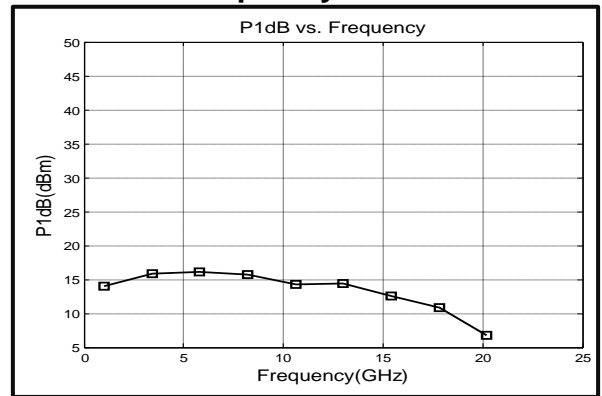
Isolation @+85°C



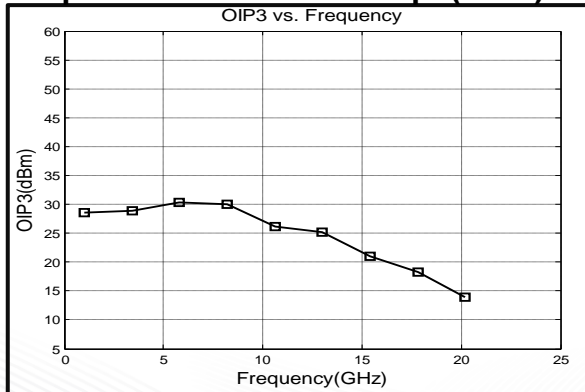
Gain vs. Output Power



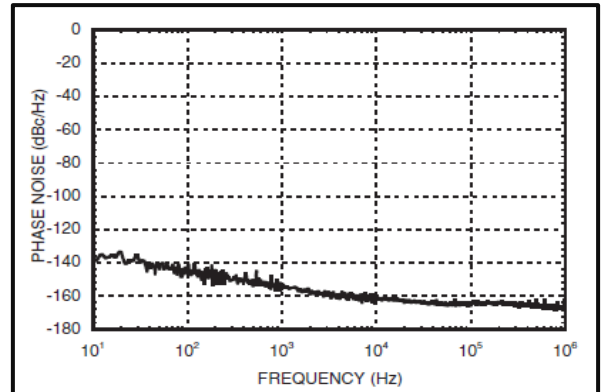
P1dB vs. Frequency



Output Third Order Intercept (OIP3)

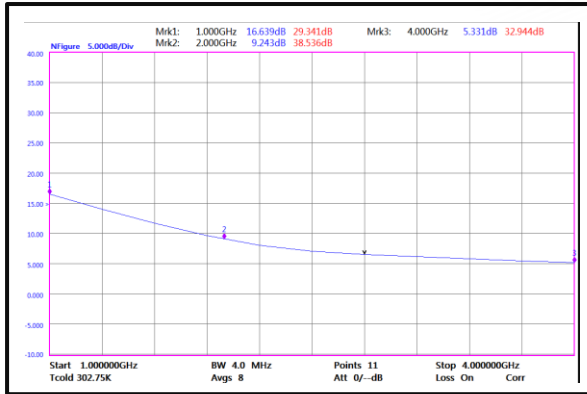


Phase Noise @ 12GHz

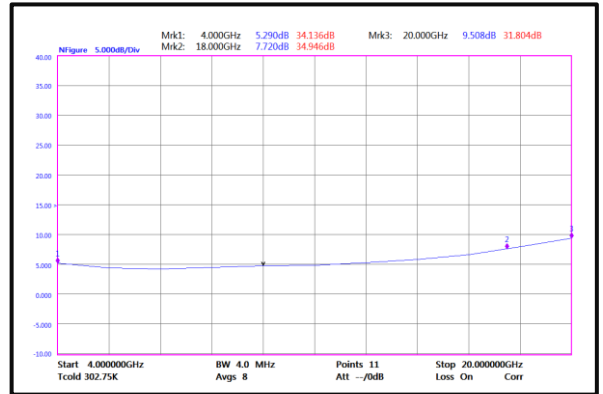




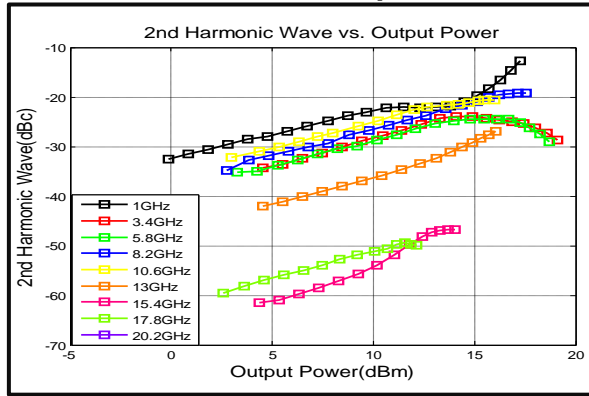
Noise Figure(1-4GHz)



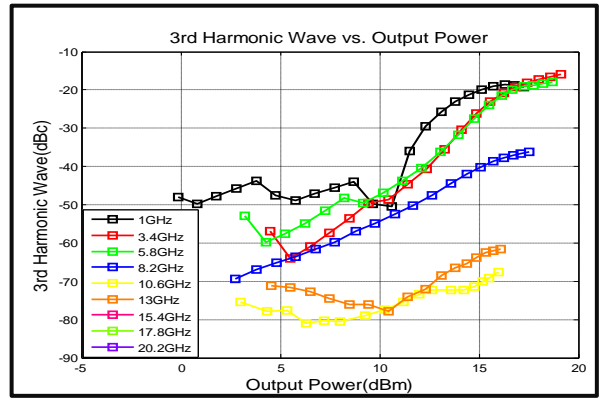
Noise Figure(4-20GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

