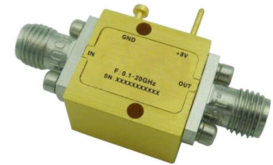




Ultra Wide Band Low Noise Amplifier 0.1GHz~20GHz

Features

- Gain: 20dB Typical
- Noise Figure: 3.0dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +8V



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	0.1		10	10		20	GHz
Gain	18	19	21	19	20	22	dB
Gain Flatness		±1.0	±2.0		±1.0	±2.0	dB
Gain Variation Over Temperature (-40°C~+85°C)		±1.0			±1.5		dB
Noise Figure		2.5			3.5		dB
Input VSWR		1.3			1.8		: 1
Output VSWR		1.5			2.0		: 1
Output 1dB Compression Point (P1dB)	19	21		17	20		dBm
Saturated Output Power (Psat)		22			21		dBm
Output Third Order Intercept (OIP3)		33			28		dBm
Supply Current (Vcc=+8V)		200	300		200	300	mA
Isolation S12		-35			-25		dB

Weight	0.35 Max. Ounces	Impedance	50ohms
Input / Output Connectors	SMA-Female	Material	Aluminum
Finish	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Optional)



Absolute Maximum Ratings

Operating Voltage	+10V
RF Input Power	+23dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +8V biasing

Power OFF Procedure

Step 1	Turn off +8V biasing
Step 2	Remove RF connection
Step 3	Remove Ground

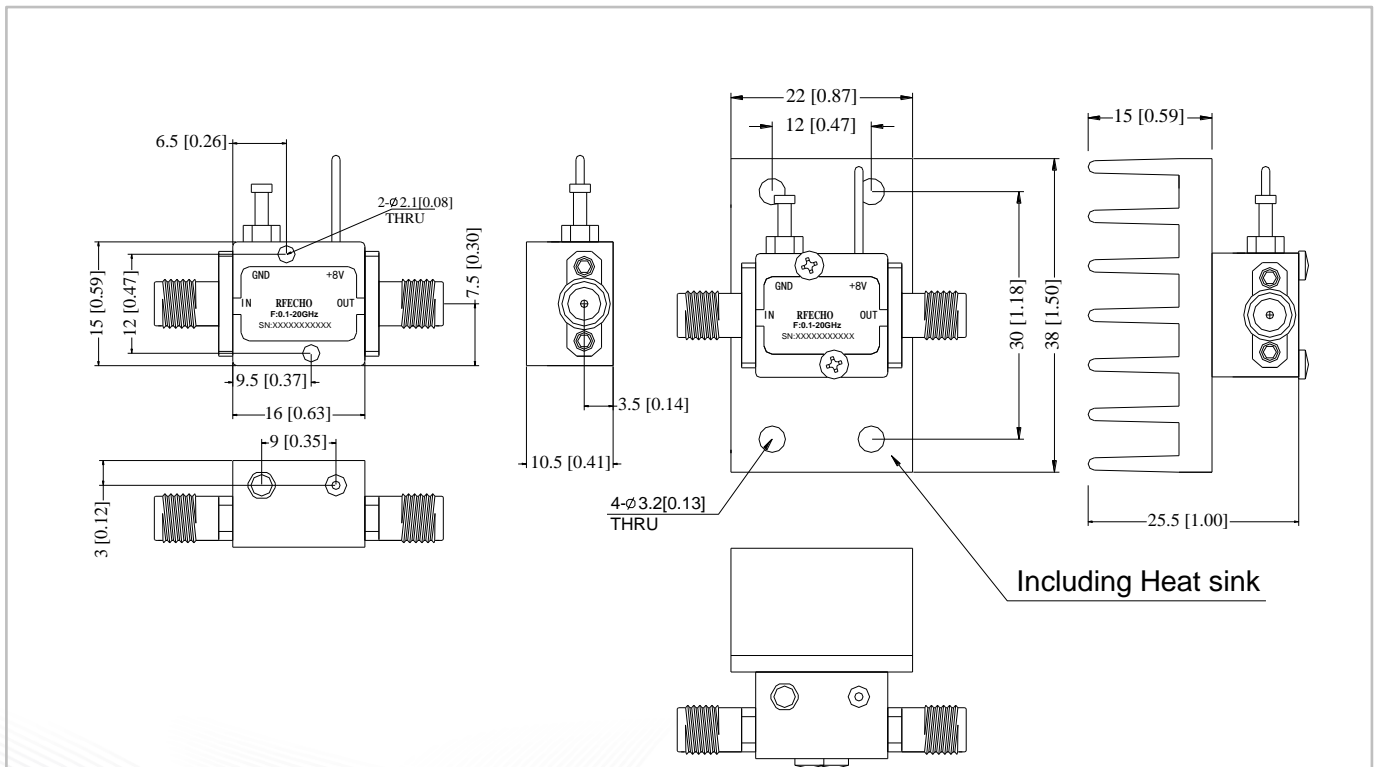
Environmental Specifications

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:

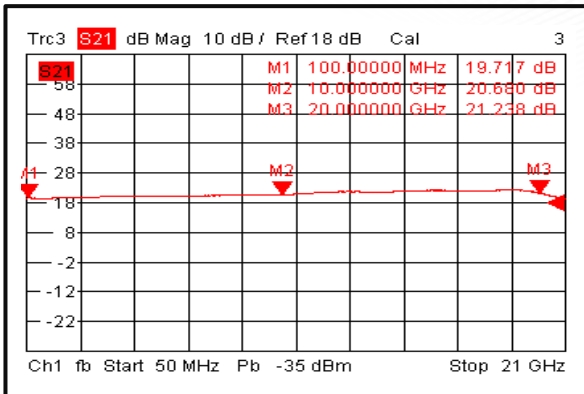
All Dimensions in mm [inches]

Heat Sink required during operation(Sold Separately)

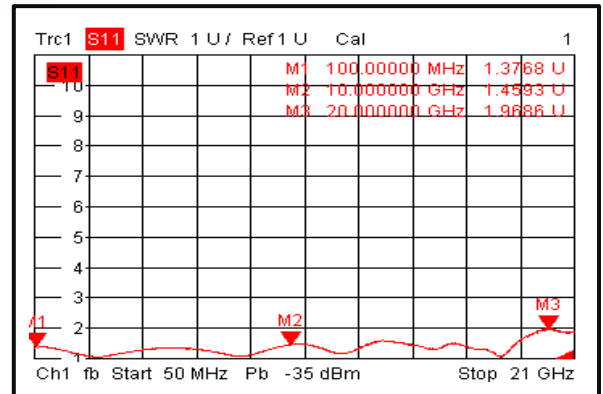




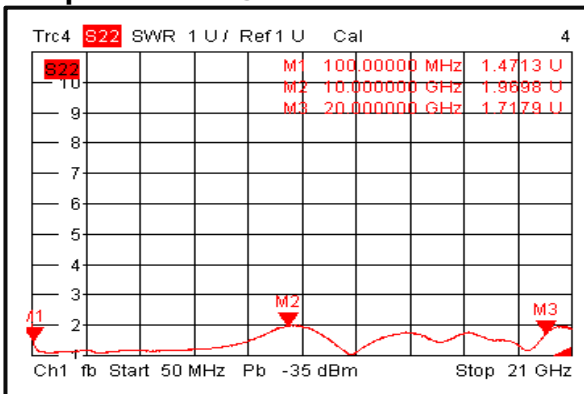
Gain @ +25°C



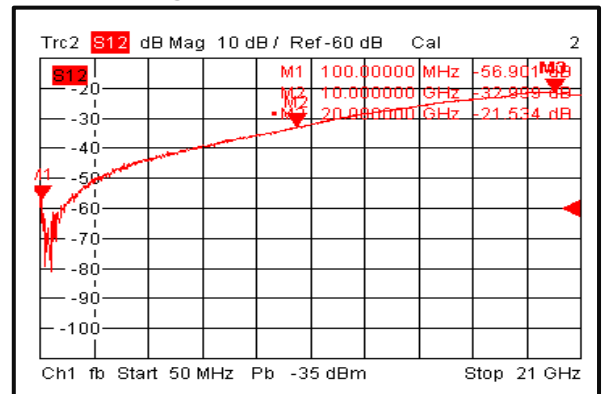
Input VSWR @ +25°C



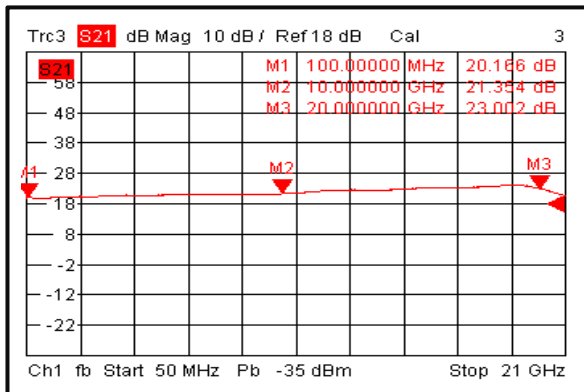
Output VSWR @ +25°C



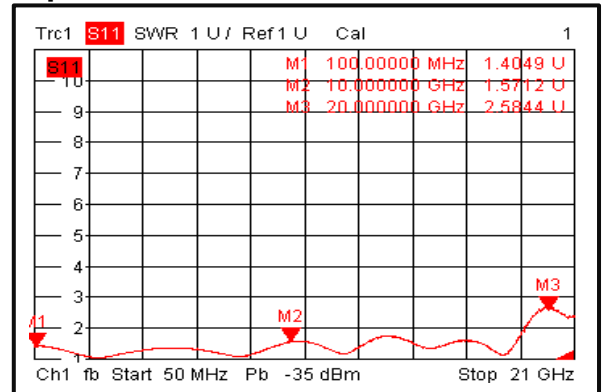
Isolation @ +25°C



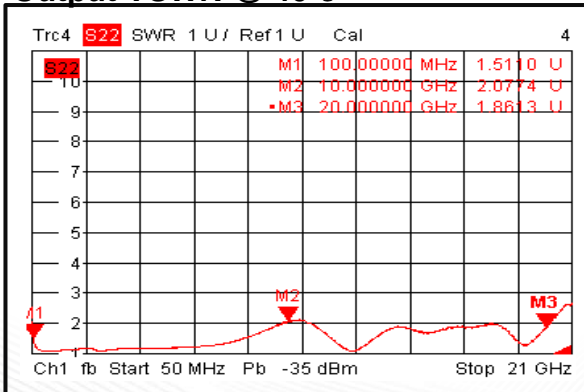
Gain @ -40°C



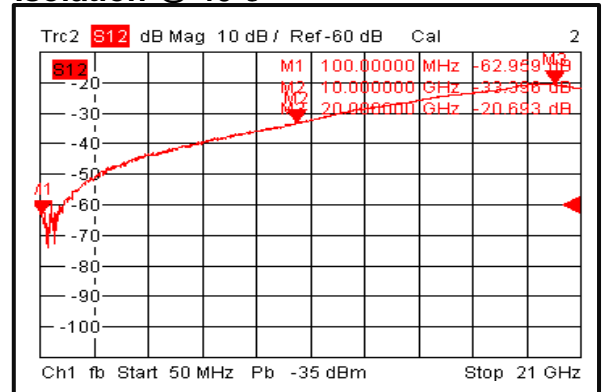
Input VSWR @ -40°C



Output VSWR @ -40°C

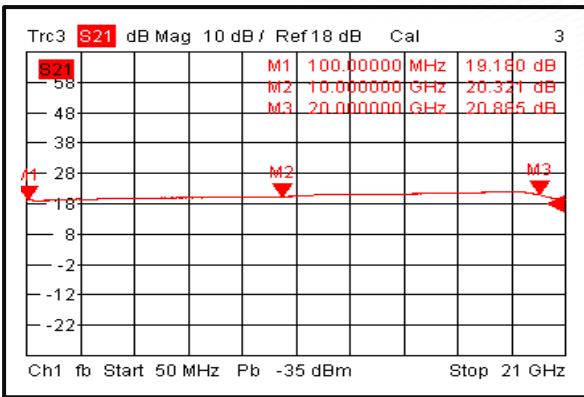


Isolation @ -40°C

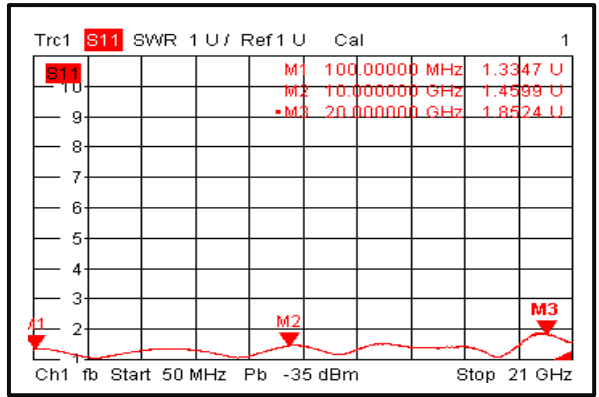




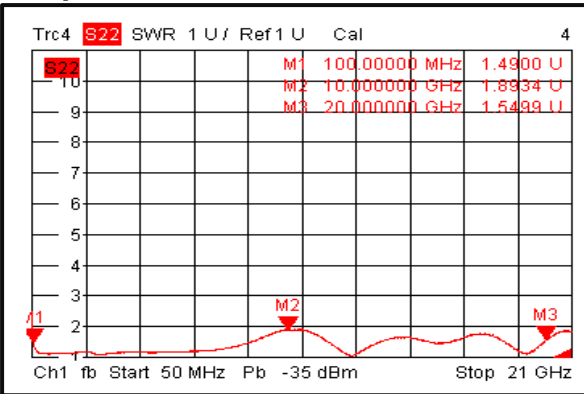
Gain @ +85°C



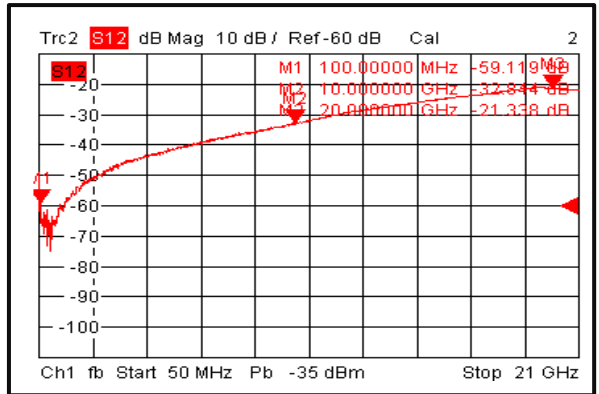
Input VSWR @ +85°C



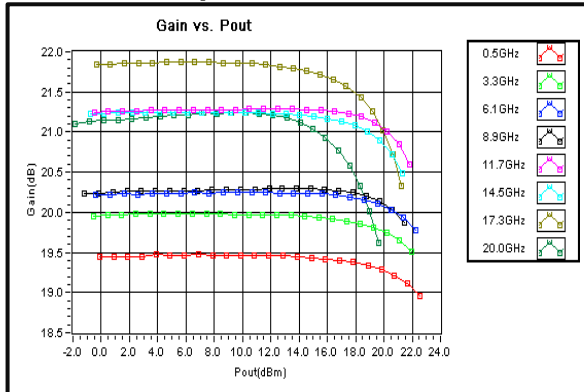
Output VSWR @ +85°C



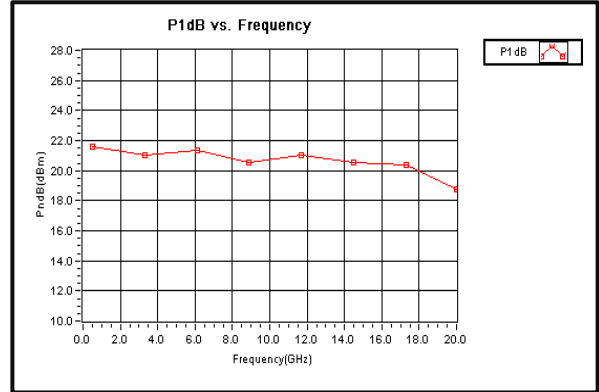
Isolation @ +85°C



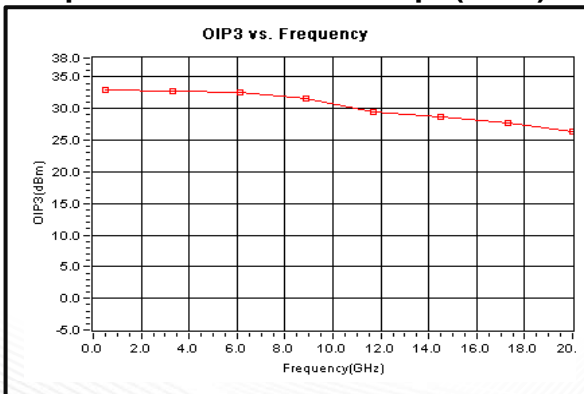
Gain vs. Output Power



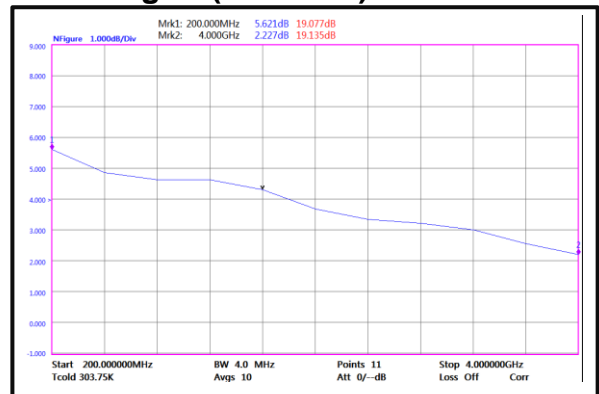
P1dB vs. Frequency



Output Third Order Intercept (OIP3)

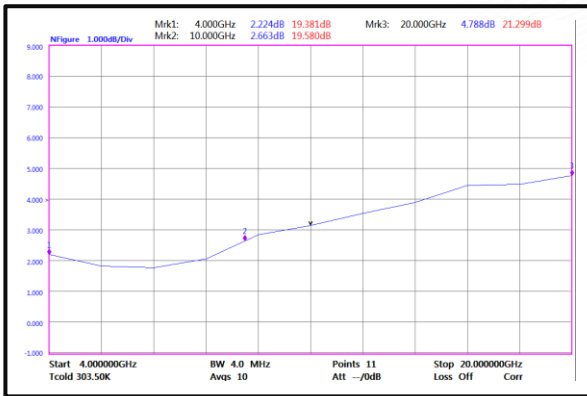


Noise Figure (0.2-4GHz)

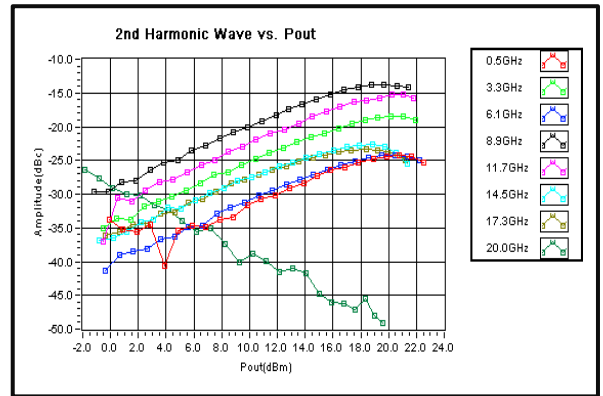




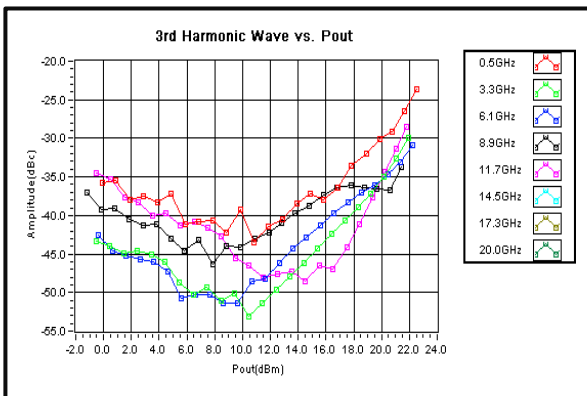
Noise Figure(4-20GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

