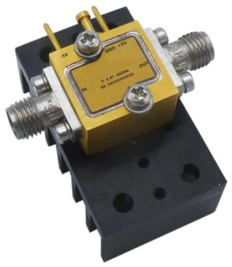
Hermetically Sealed Ultra Wide Band Low Noise Amplifier 0.01GHz ~ 20GHz



Features

- Gain: 15dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: + 5V& -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	0.01		6	6		12	12		20	GHz
Gain	14.5	16	22	14	15	17.5	14	15	17	dB
Gain Flatness		±1.5			±0.5	±1.0		±0.5	±1.0	dB
Gain Variation Over Temperature (-40℃~+85℃)		±1.0			±1.0			±1.0		dB
Noise Figure		3.5	5.5		2.0	3.5		2.5	5.0	dB
Input VSWR		1.3	1.8		1.4	1.8		1.5	1.8	:1
Output VSWR		1.3			1.5	1.8		1.5	1.8	:1
Output 1dB Compression Point (P1dB)	20	21		19.5	21		17.5	19		dBm
Saturated Output Power (Psat)		22			22			20		dBm
Output Third Order Intercept (OIP3)		28			28			26		dBm
Supply Current (Vcc=+5V,Vgg=-5V)		160	180		160	180		160	180	mA
Isolation S12		-40			-35			-30		dB

Weight	0.9 Max.ounces	Impedance	50ohms
Input / Output Connectors	SMA-Female	Material	Aluminum
Finish	Gold Plated	Package Sealing	Hermetically Sealed (Laser Sealed)

Absolute Maximum Ratings

Operating Voltage	+8V @ 25℃
RF Input Power	+20dBm @ 25℃

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

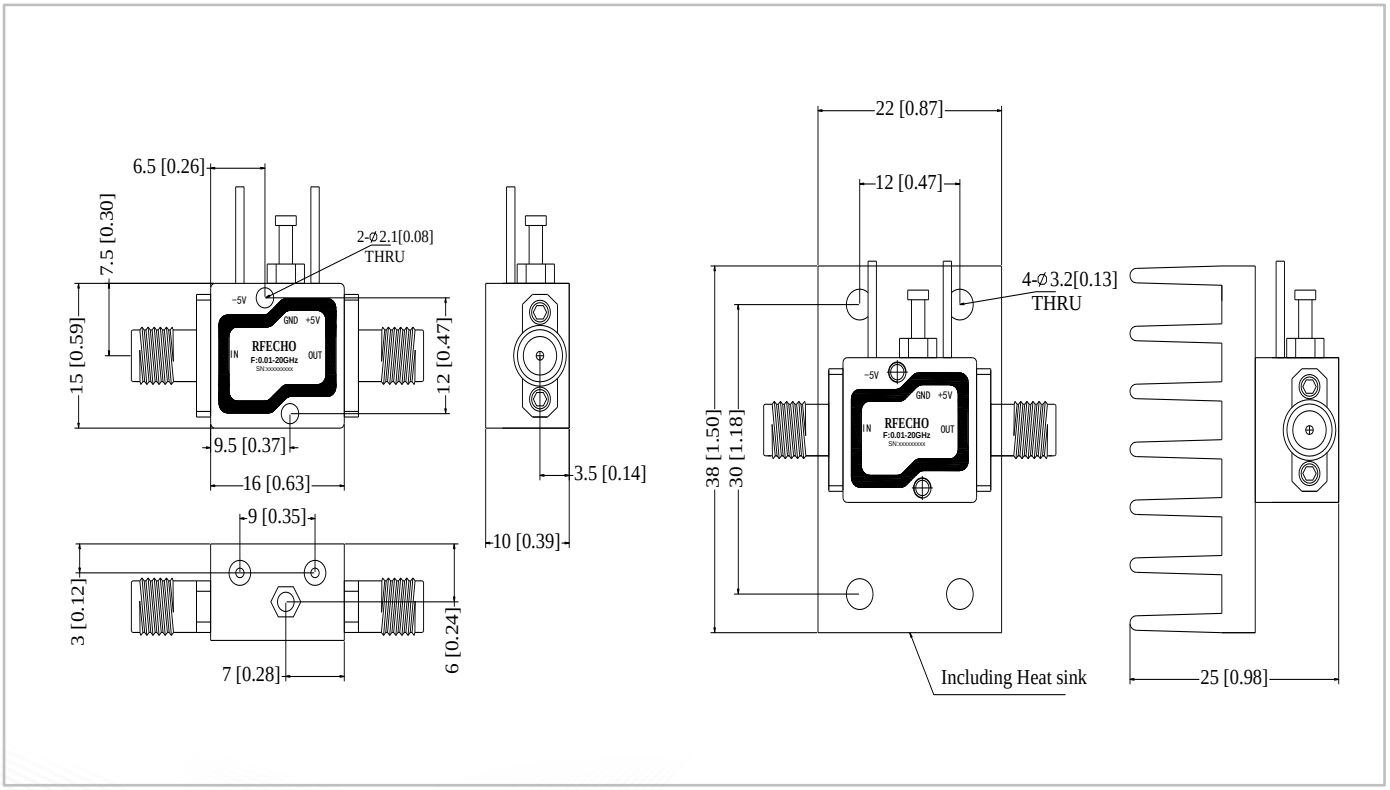
Environmental Specifications

Operational Temperature	-40℃~+85℃
Storage Temperature	-50℃~+105℃
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 35ºc, 95%RH at 40ºc
Shock	20G for 11msec half sine wave,3 axis both directions

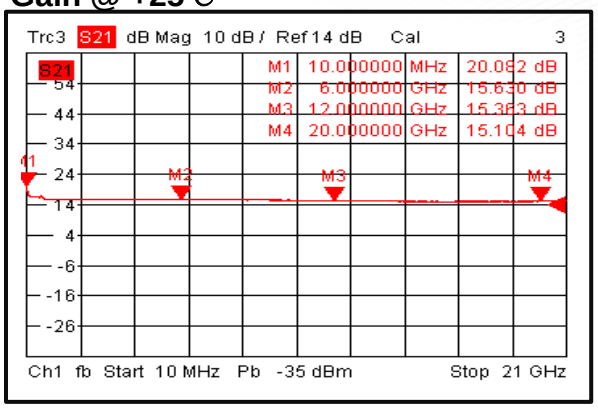
Outline Drawing:

All Dimensions in mm (inches)

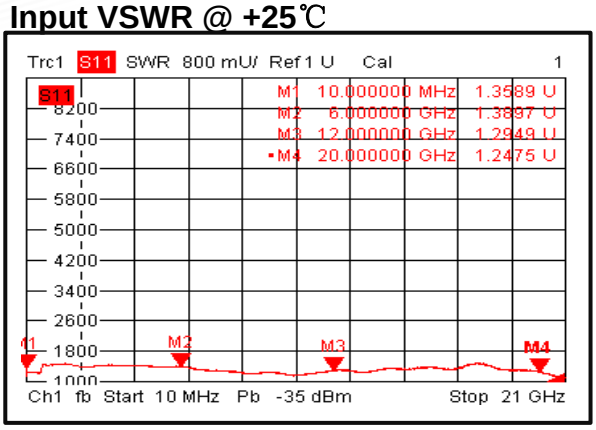
Heat Sink required during operation(Sold Separately)



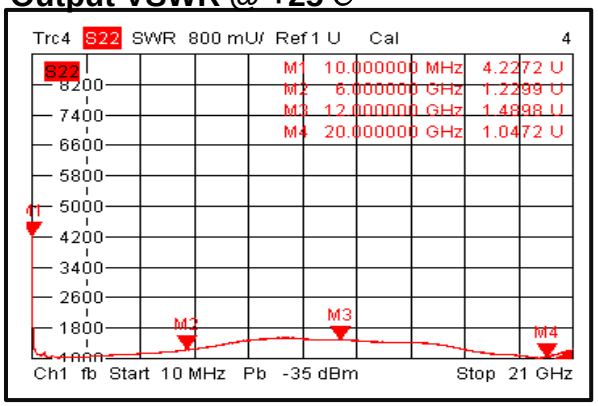
Gain @ +25℃



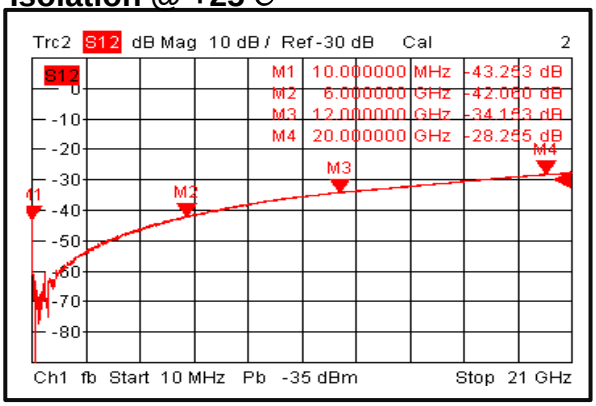
Input VSWR @ +25℃



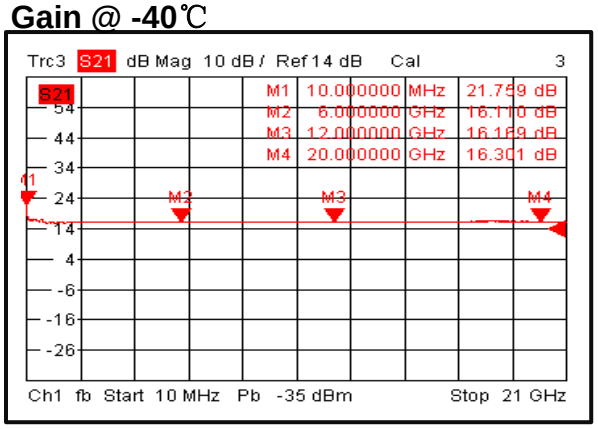
Output VSWR @ +25℃



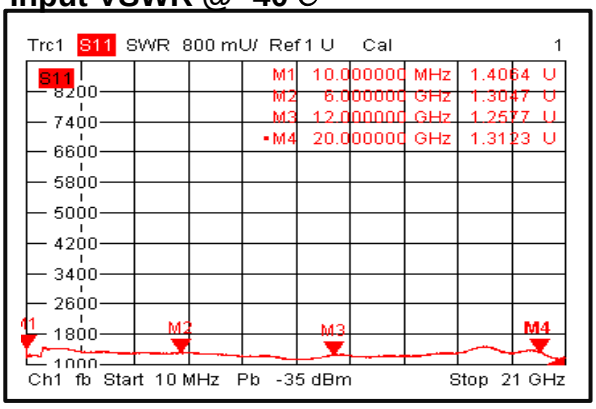
Isolation @ +25℃



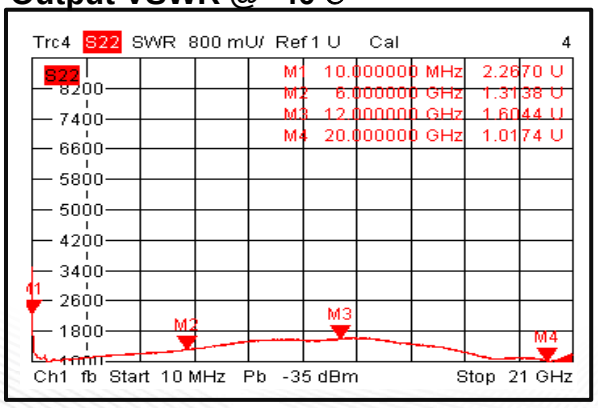
Gain @ -40℃



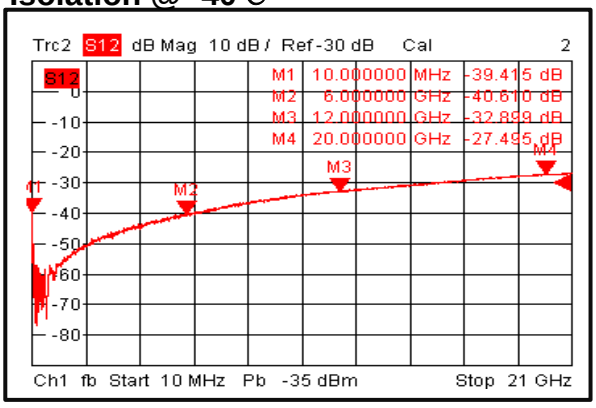
Input VSWR @ -40℃



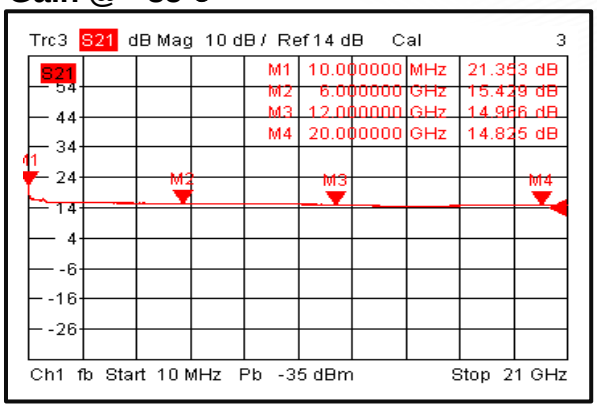
Output VSWR @ -40℃



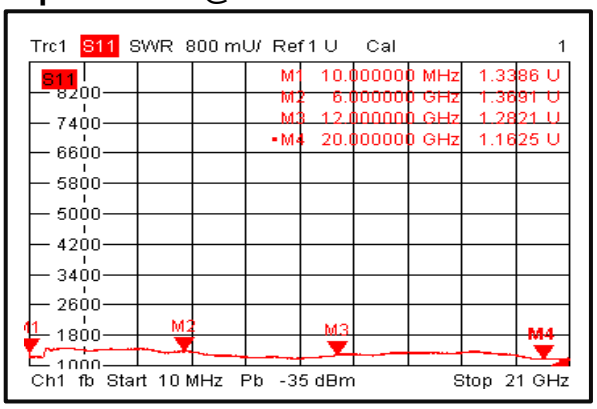
Isolation @ -40℃



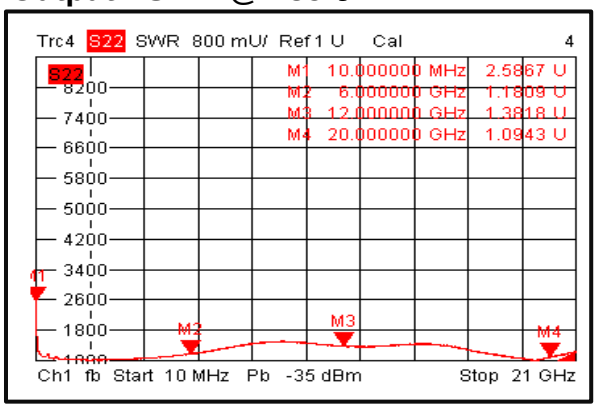
Gain @ +85℃



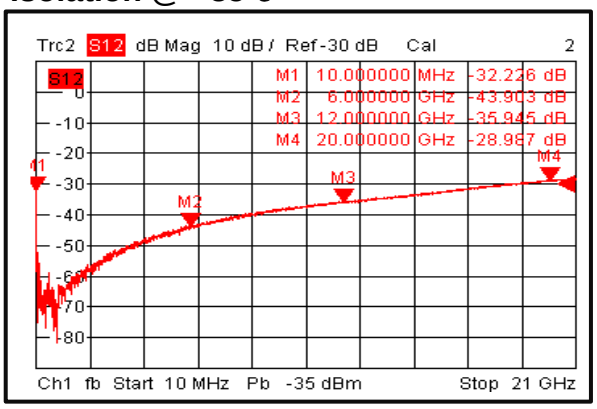
Input VSWR @ +85℃



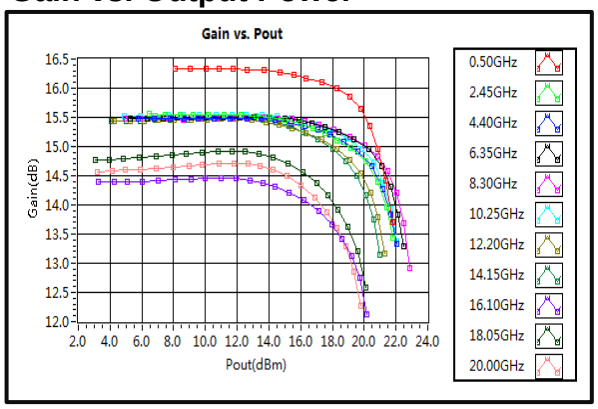
Output VSWR @ +85℃



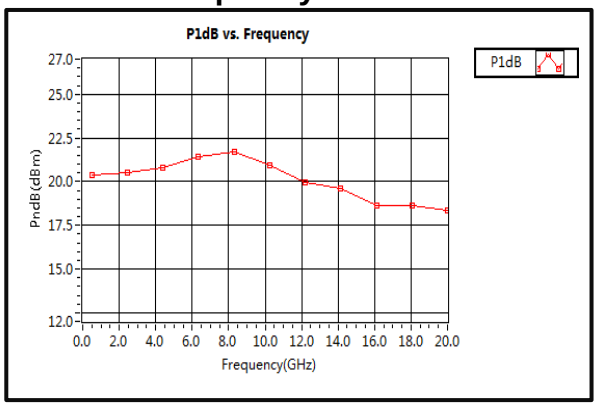
Isolation @ +85℃



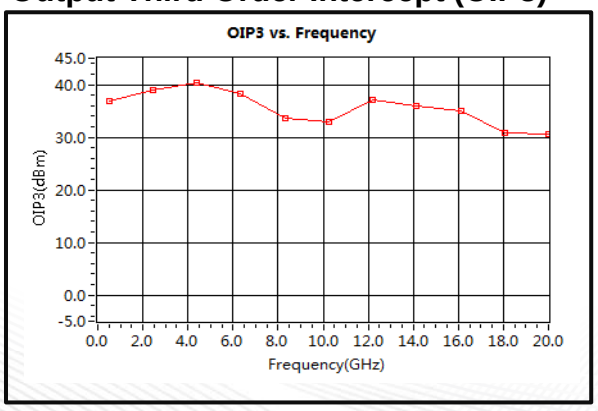
Gain vs. Output Power



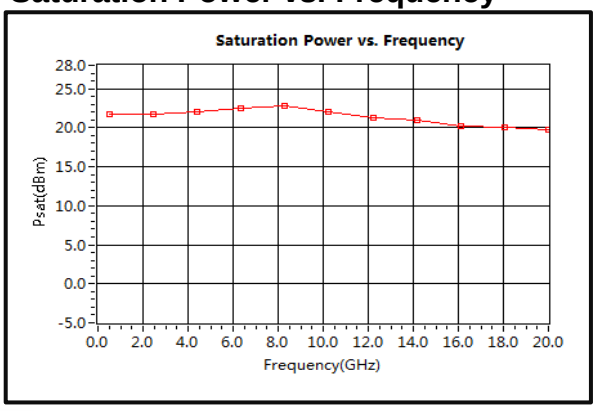
P1dB vs. Frequency



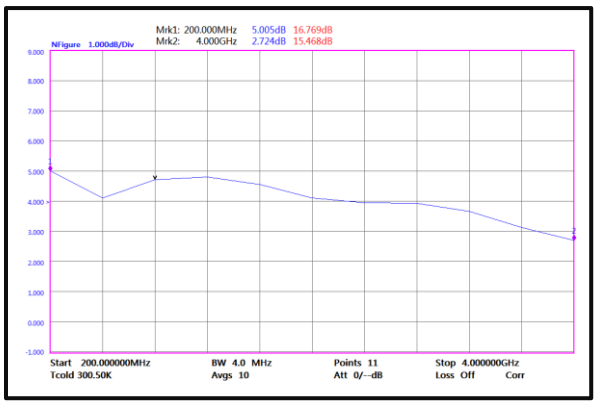
Output Third Order Intercept (OIP3)



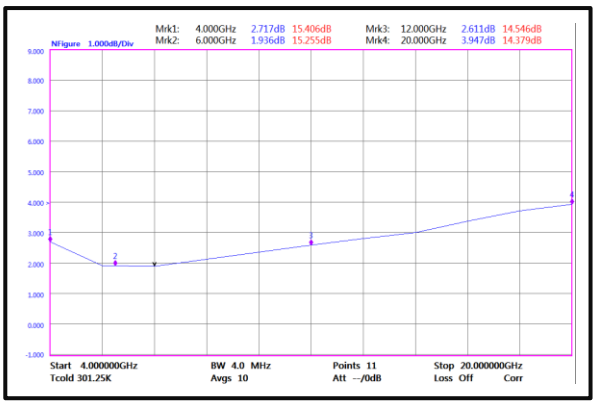
Saturation Power vs. Frequency



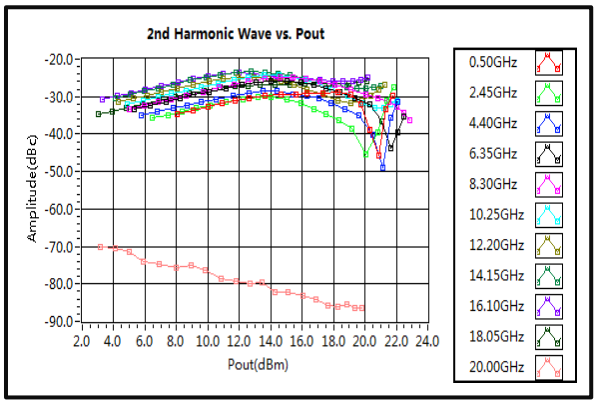
Noise Figure(0.2-4GHz)



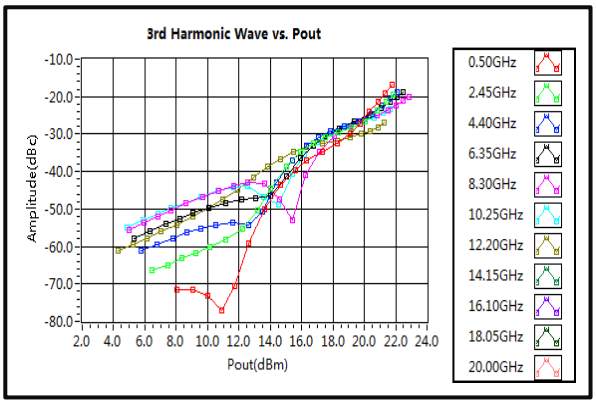
Noise Figure(4-12GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power