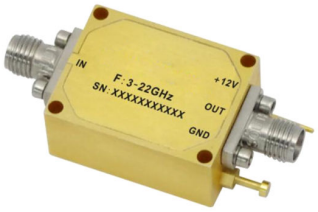
RFecho
A Gateway to RFWorld

Wide Band Low Noise Amplifier 3GHz~22GHz

Features

- Gain: 28dB Typical
- Noise Figure: 3.0dB Typical
- P1dB Output Power: +22dBm Typical
- Supply Voltage: +12V @ 260mA
- 50 Ohm Matched Input / Output
- Size: 1.02” x 0.79” x0.47”



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	3		13	13		17	17		22	GHz
Gain	25	27	30	26	28	30	24	26	29	dB
Gain Flatness		±0.8	±1.0		±0.8	±1.0		±1.0	±1.5	dB
Gain Variation Over Temperature (-40ºC~+85ºC)		±1.0			±1.2			±1.5		dB
Noise Figure		2.8	4.0		3.0	4.0		3.8	5.5	dB
Input Return loss	-12	-15		-12	-14		-12	-13		dB
Output Return loss	-13	-15		-13	-15		-12	-14		dB
Output Power for 1 dB Compression (P1dB)	20	22		19	21		18	19.5		dBm
Saturated Output Power (Psat)		24			23			21.5		dBm
Output Third Order Intercept (OIP3)		30			28.5			26		dBm
Supply Current (Idd) (Vcc=+12V)		260	300		260	300		260	300	mA
Isolation S12		-60			-55			-55		dB

Weight	0.7 ounces (Max.)	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 @25ºC
RF Input Power (RFIN)	+3dBm@25ºC

Biasing 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

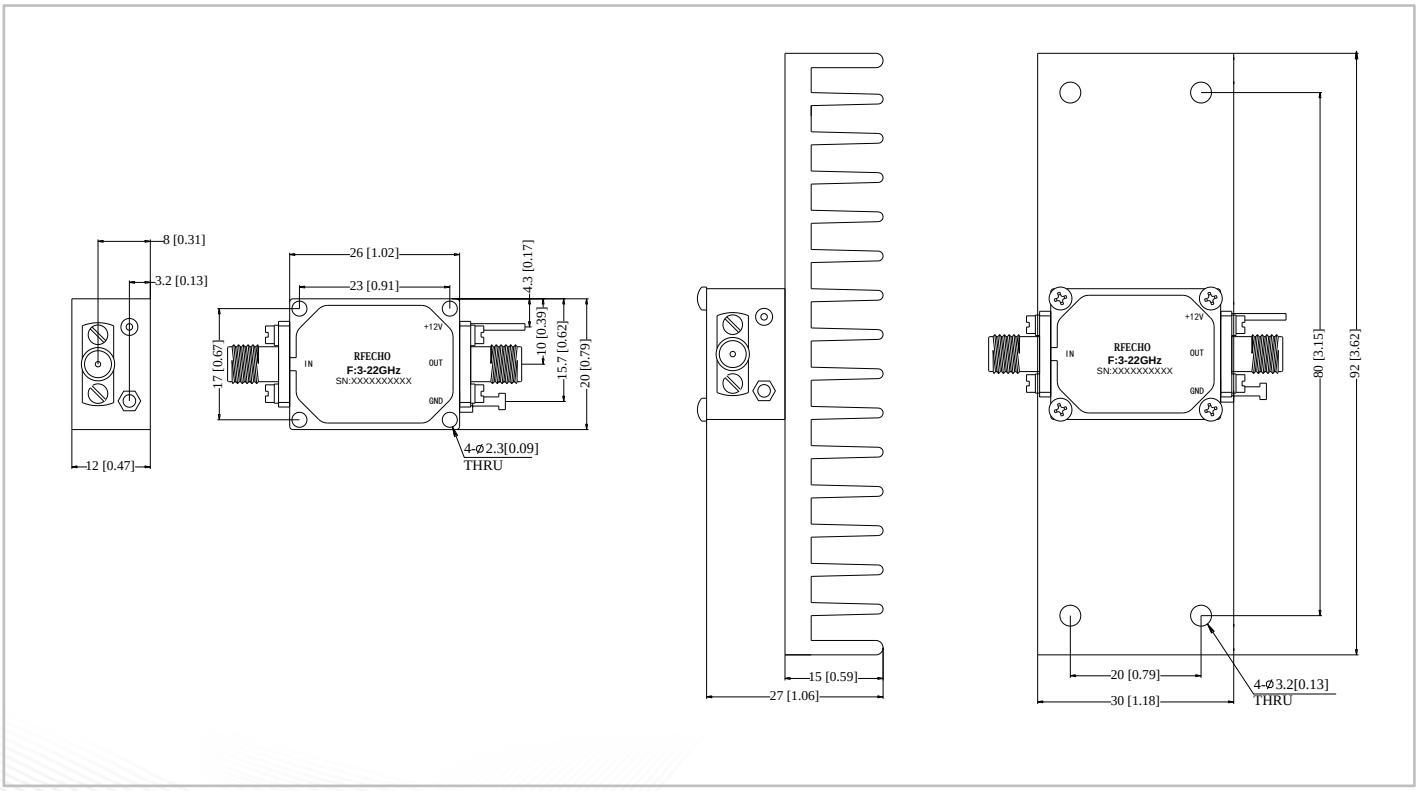
Environmental Specifications

Operational Temperature	-40ºC~+85ºC
Storage Temperature	-50ºC~+105ºC
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

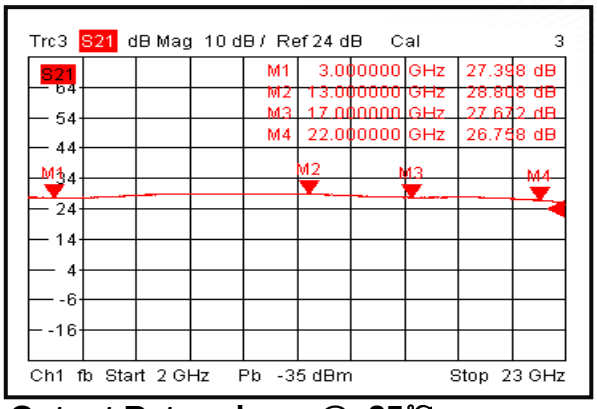
Outline Drawing:

All Dimensions in mm (inches)

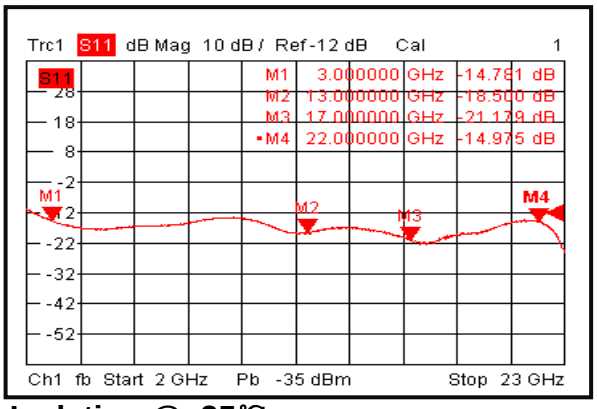
Heat Sink required during operation(Sold Separately)



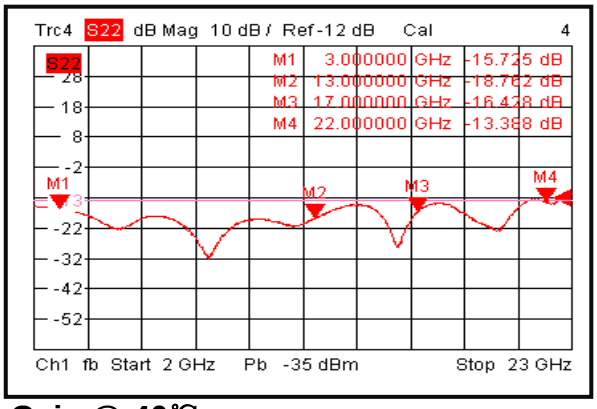
Gain @+25℃



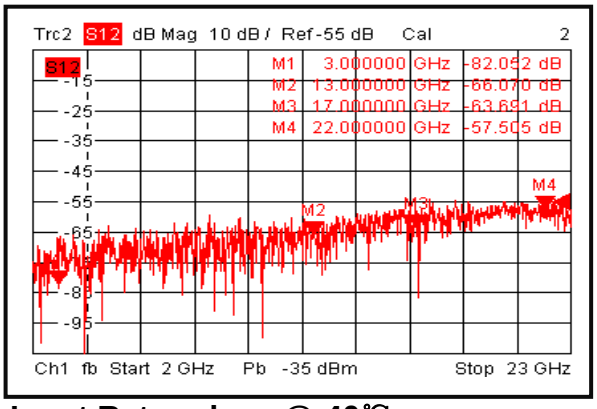
Input Return loss @+25℃



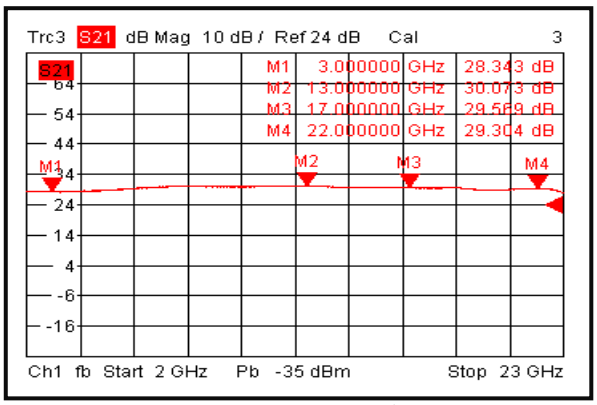
Output Return loss @+25℃



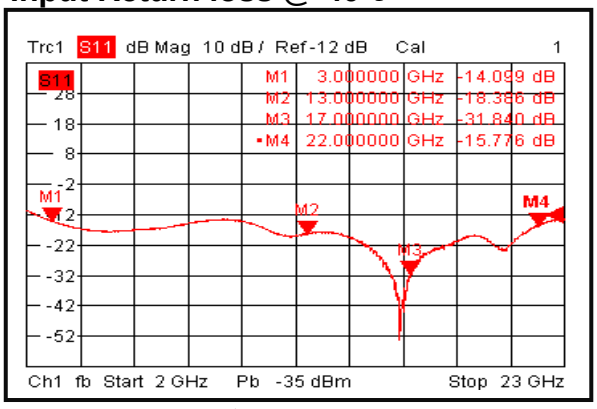
Isolation @+25℃



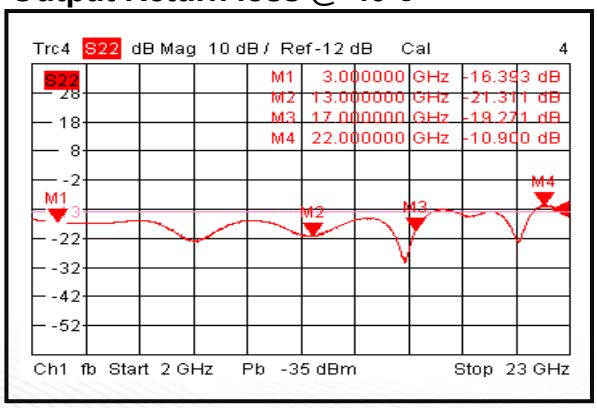
Gain @-40℃



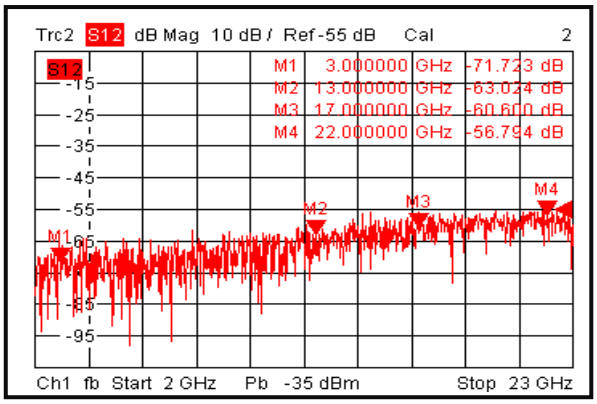
Input Return loss @-40℃



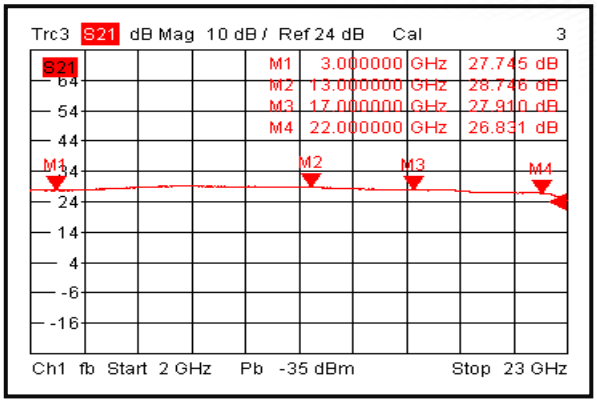
Output Return loss @-40℃



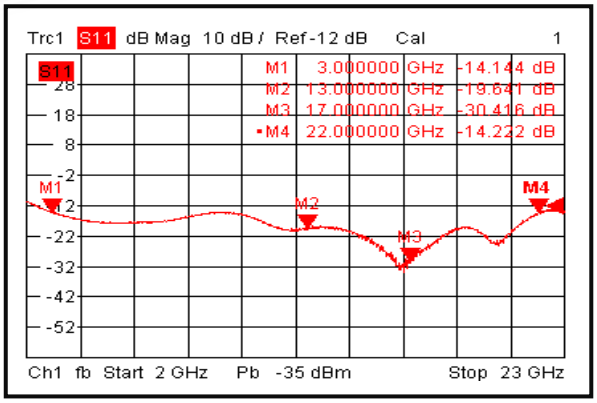
Isolation @-40℃



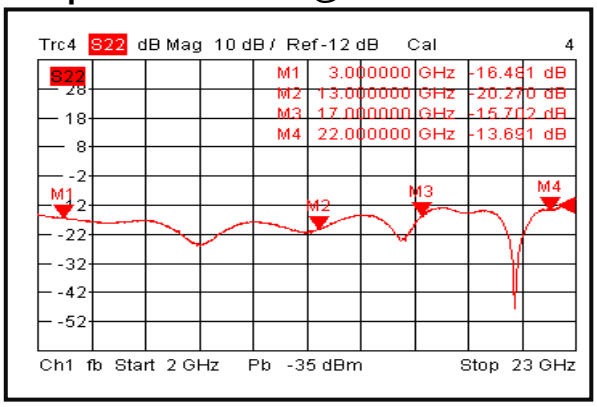
Gain @+85℃



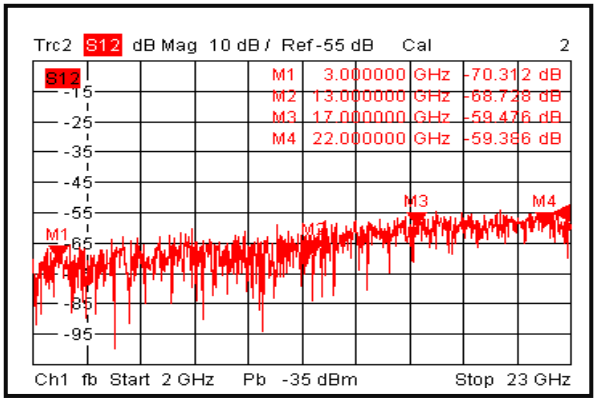
Input Return loss @+85℃



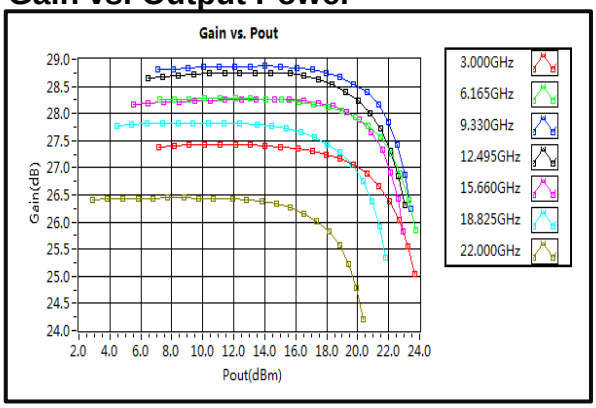
Output Return loss @+85℃



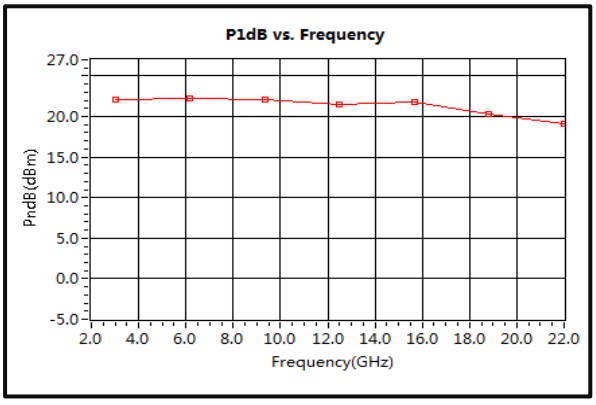
Isolation @+85℃



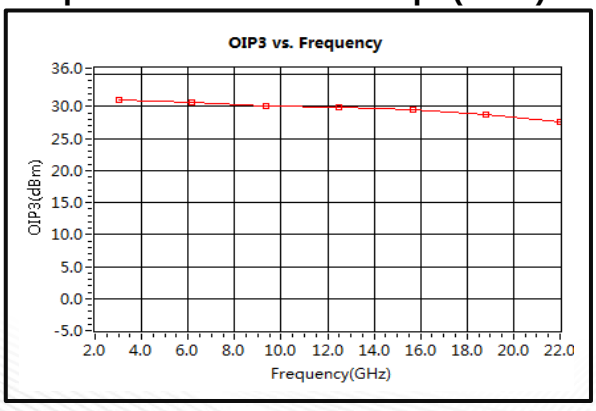
Gain vs. Output Power



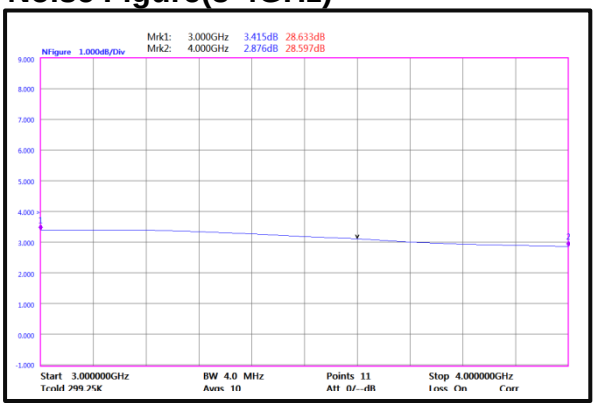
P1dB vs. Frequency



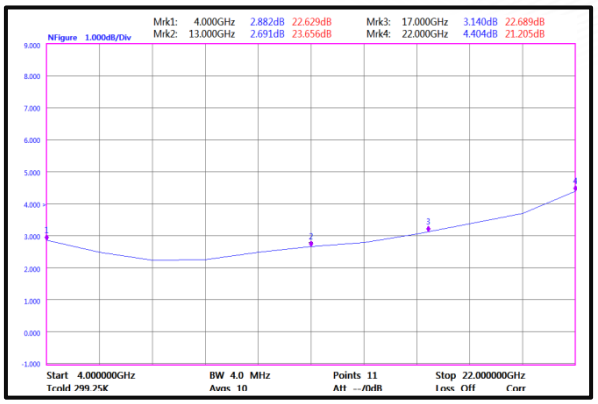
Output Third Order Intercept (OIP3)



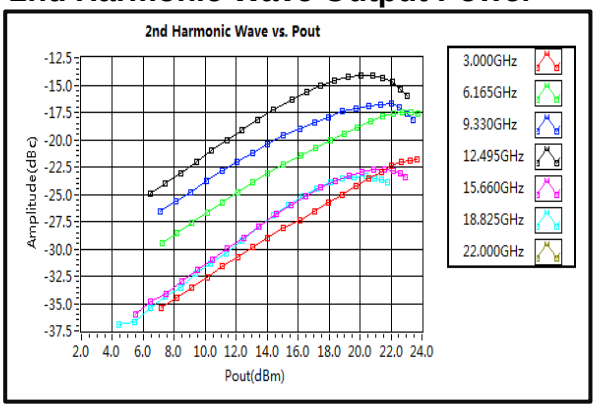
Noise Figure(3-4GHz)



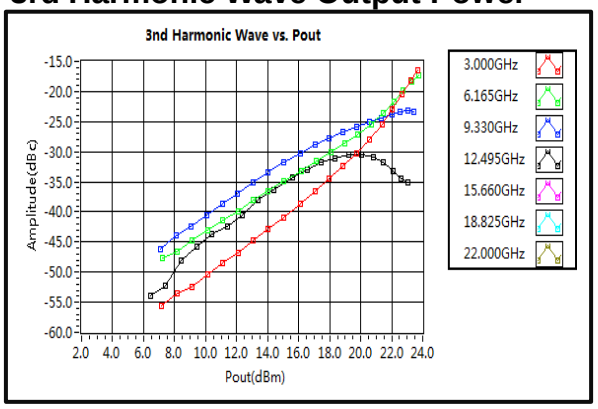
Noise Figure(4-22GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power