RFecho
A Gateway to RFWorld

Wide Band Variable Gain Low Noise Amplifier 0.01GHz~3GHz

Features

- Gain: 45dB Typical
- Noise Figure: 3.0dB Typical
- Output P1dB : +18dBm Typical
- Supply Voltage: +12V
- 50 Ohm Matched

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	0.01		0.1	0.1		3	GHz
Gain	40	54		42	54		dB
Gain Adjustable Range		53			53		dB
Gain Flatness		±2.0			±5.0		dB
Gain Variation Over Temperature (-40ºC~+85ºC)		±1.0			±1.0		dB
Noise Figure		3.0			1.5	2.5	dB
Input VSWR		2.0			1.8	2.2	: 1
Output VSWR		2.0			2.0	2.8	: 1
Output 1dB Compression Point (P1dB)	16	18		6	18		dBm
Saturated Output Power (Psat)		22			22		dBm
Output Third Order Intercept (OIP3)		28			30		dBm
Isolation S12		-60			-60		dB
Supply Current (Vcc=+12V, Vctl= +0.2V to +1.4V)		300	350		300	350	mA

Weight	2.3 Max. ounces	Impedance	50ohms
Input / Output Connectors	SMA-Female	Material	Aluminum
Finish	Nickel Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Optional)

Absolute Maximum Ratings

Operating Voltage	+15V
Vg Control Voltage	0V to +2.2V
RF Input Power (@25℃, 50Ω)	-25dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Step 4	Connect Vctl Control
Step 5	Turn on +12V biasing
Step 6	Turn on Vctl Control

Power OFF Procedure

Step 1	Turn off Vctl Control
Step 2	Turn off +12V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

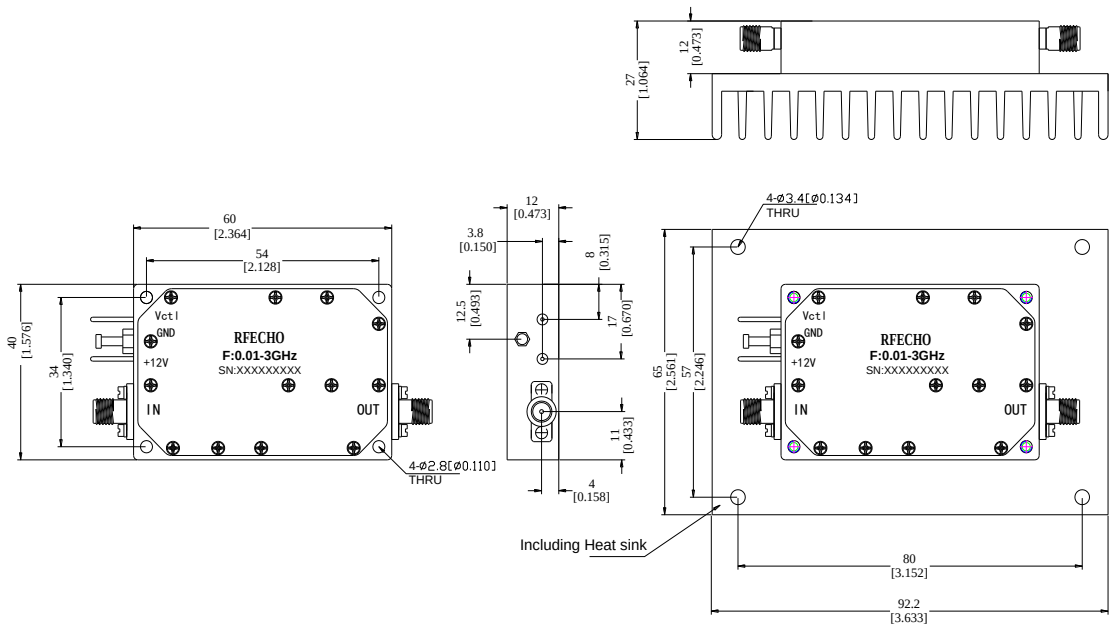
Environmental Specifications

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

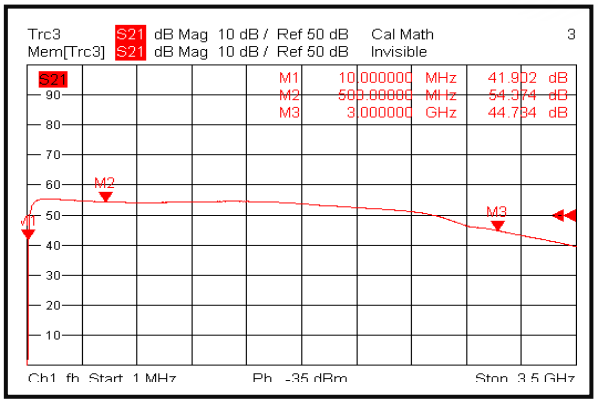
Outline Drawing:

All Dimensions in mm (inches)

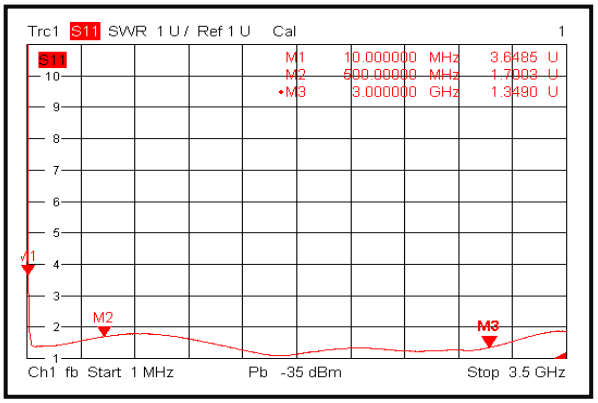
Heat Sink required during operation(Sold Separately)



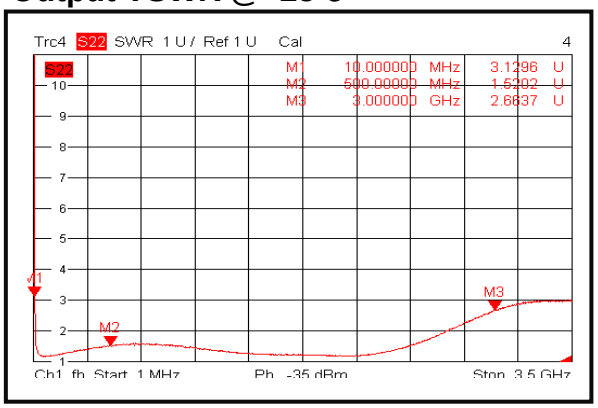
Gain @+25℃



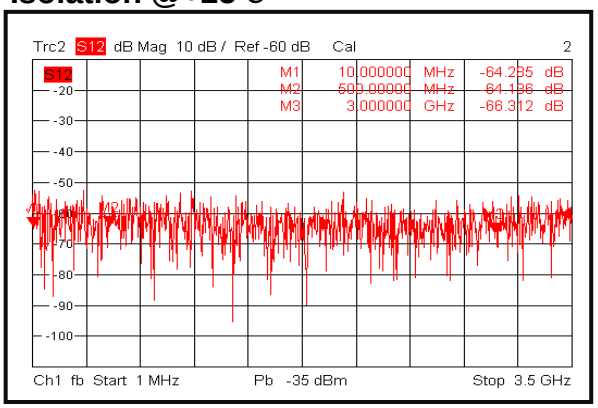
Input VSWR @+25℃



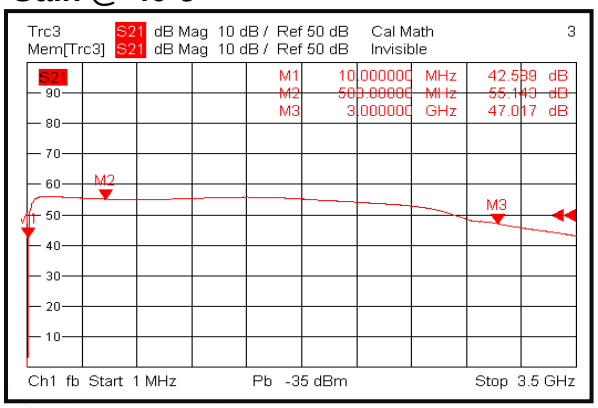
Output VSWR @+25℃



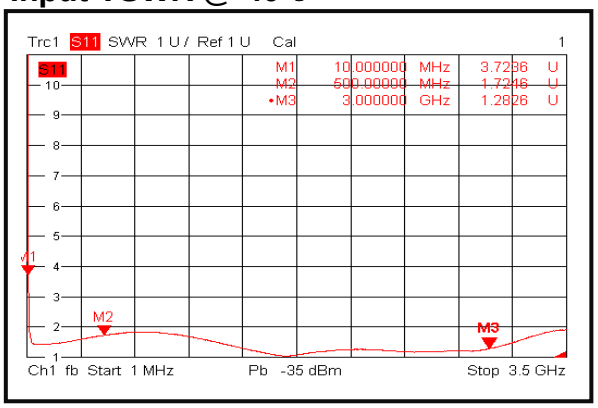
Isolation @+25℃



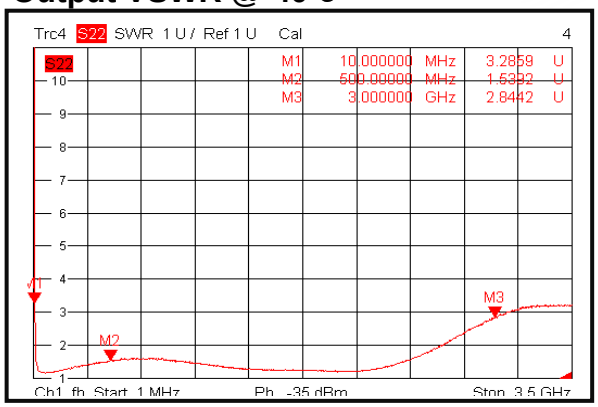
Gain @-40℃



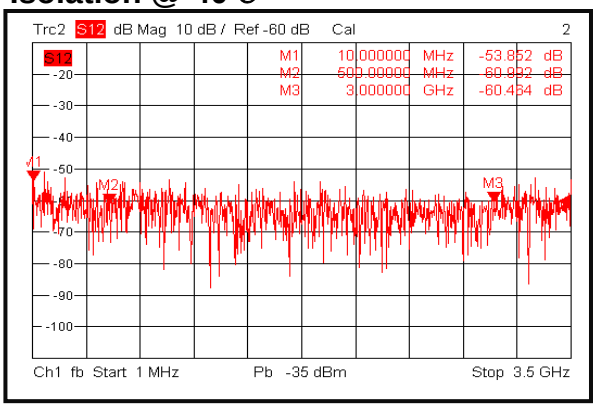
Input VSWR @-40℃



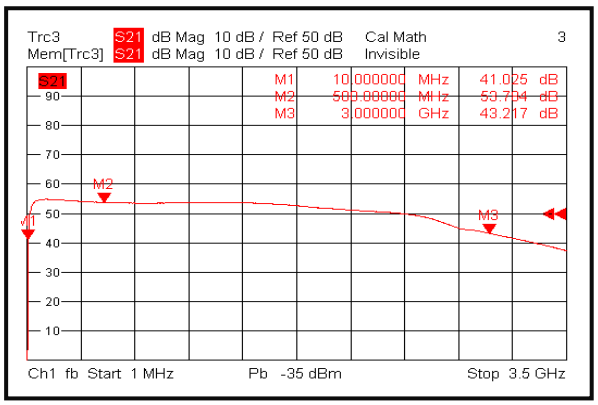
Output VSWR @-40℃



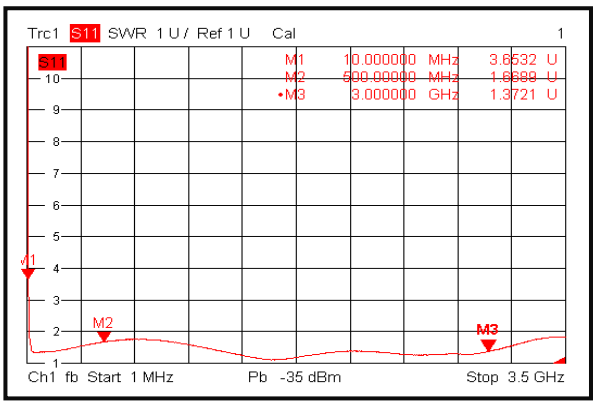
Isolation @-40℃



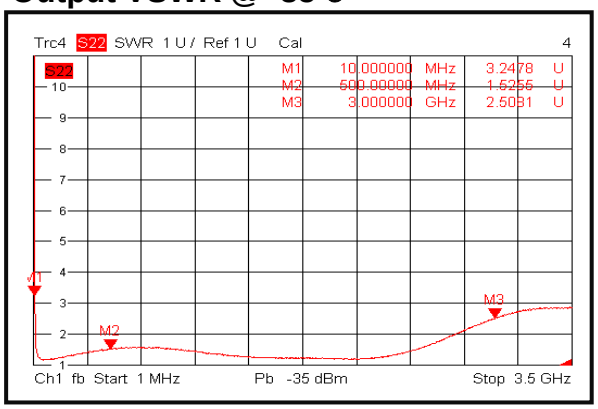
Gain @+85℃



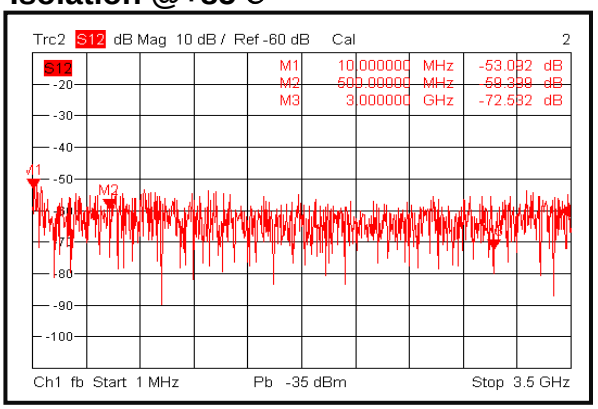
Input VSWR @+85℃



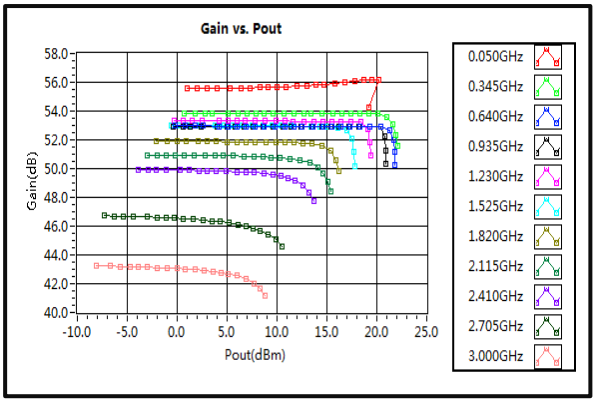
Output VSWR @+85℃



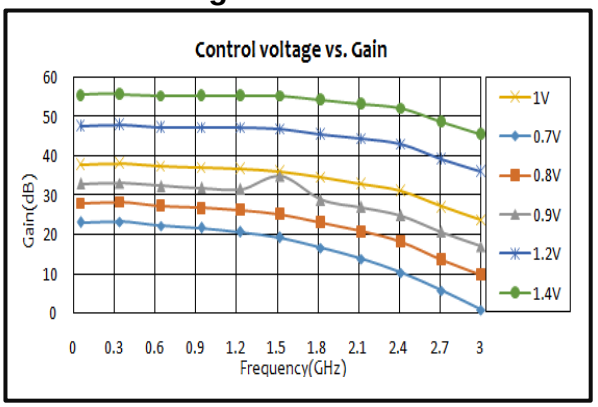
Isolation @+85℃



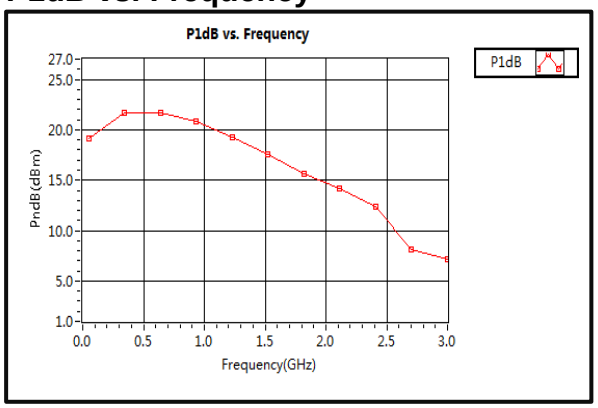
Gain vs. Output Power



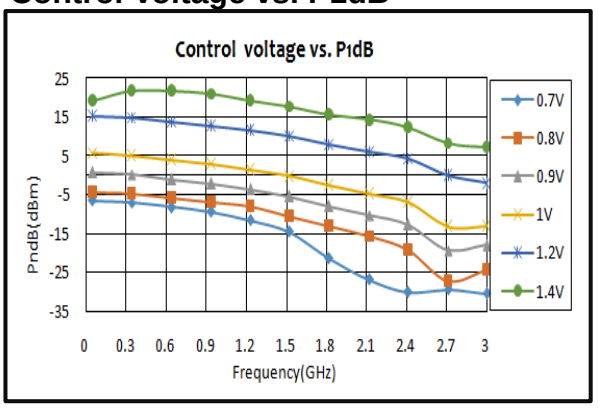
Control Voltage vs. Gain



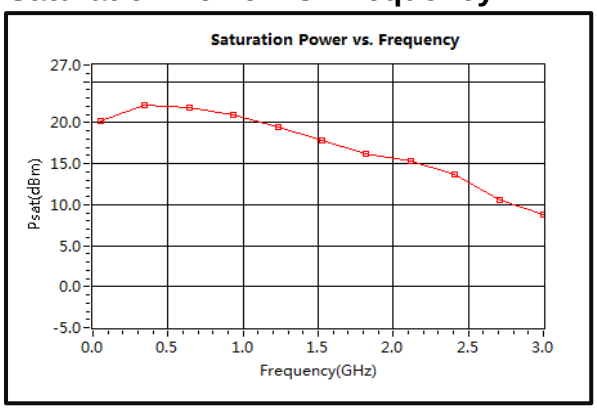
P1dB vs. Frequency



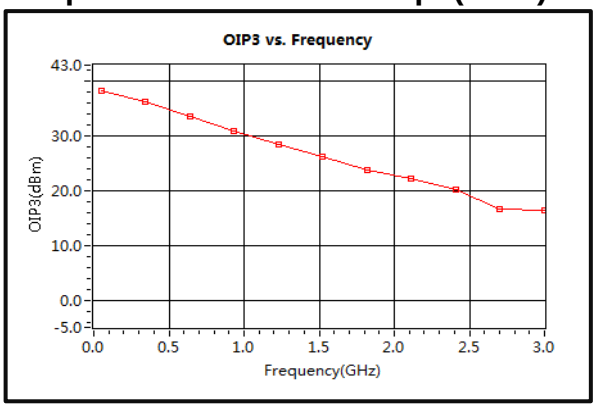
Control Voltage vs. P1dB



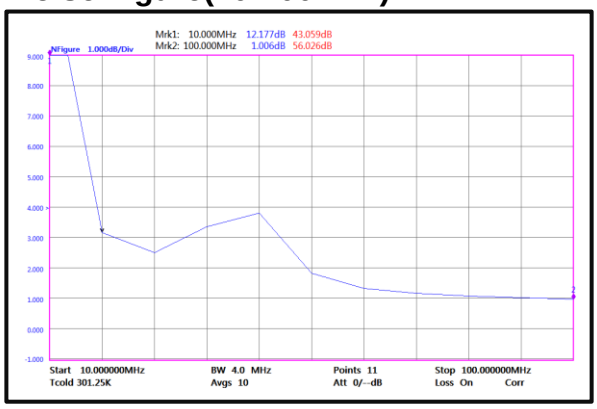
Saturation Power vs. Frequency



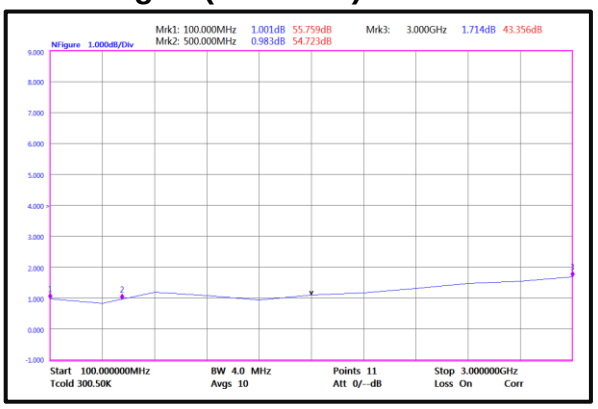
Output Third Order Intercept (OIP3)



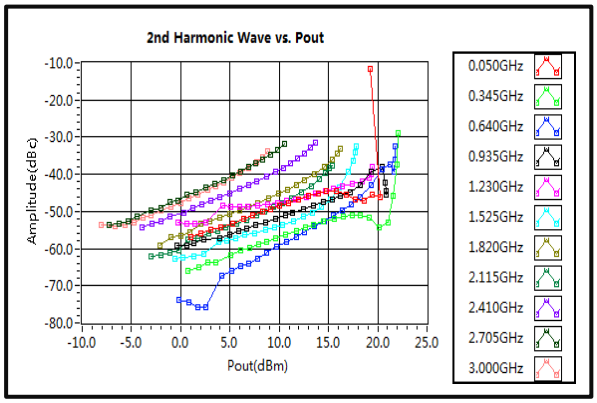
Noise Figure(10-100MHz)



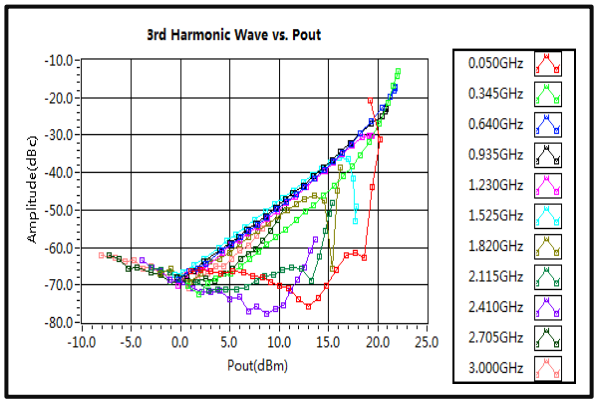
Noise Figure(0.1-3GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power