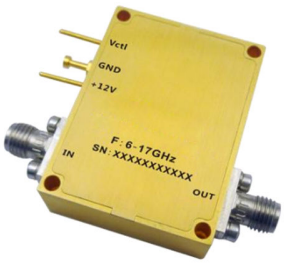
RFecho
A Gateway to RFWorld

Wide Band Variable Gain Low Noise Amplifier 6GHz~17GHz

Features

- Gain: 18dB Typical
- Noise Figure: 3.0dB Typical
- Output P1dB : +21dBm Typical
- PSAT Output Power: 22dBm
- Supply Voltage: +5V



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	6		11	11		17	GHz
Gain	38	42	45	36	40	42	dB
Gain Adjustable Range		20			16		dB
Gain Flatness		±1.5	±3.0		±1.5	±3.0	dB
Gain Variation Over Temperature (-40℃ ~ +85℃)		±1.0			±1.5		dB
Noise Figure		1.8	2.2		2.0	3.0	dB
Input VSWR		1.5	2.0		1.5	2.0	: 1
Output VSWR		2.0			2.0		: 1
Output 1dB Compression Point (P1dB)	19	21		19	21		dBm
Saturated Output Power (Psat)		22			22		dBm
Output Third Order Intercept (OIP3)		27			26		dBm
Isolation S12		-60			-60		dB
Supply Current (Vcc=+12V, Vctl=-2 to 0V)		160	250		160	250	mA

weight	1.3(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	+15V
Vg Control Voltage	-2V to 0V
RF Input Power (@25℃, 50Ω)	-20dBm

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.

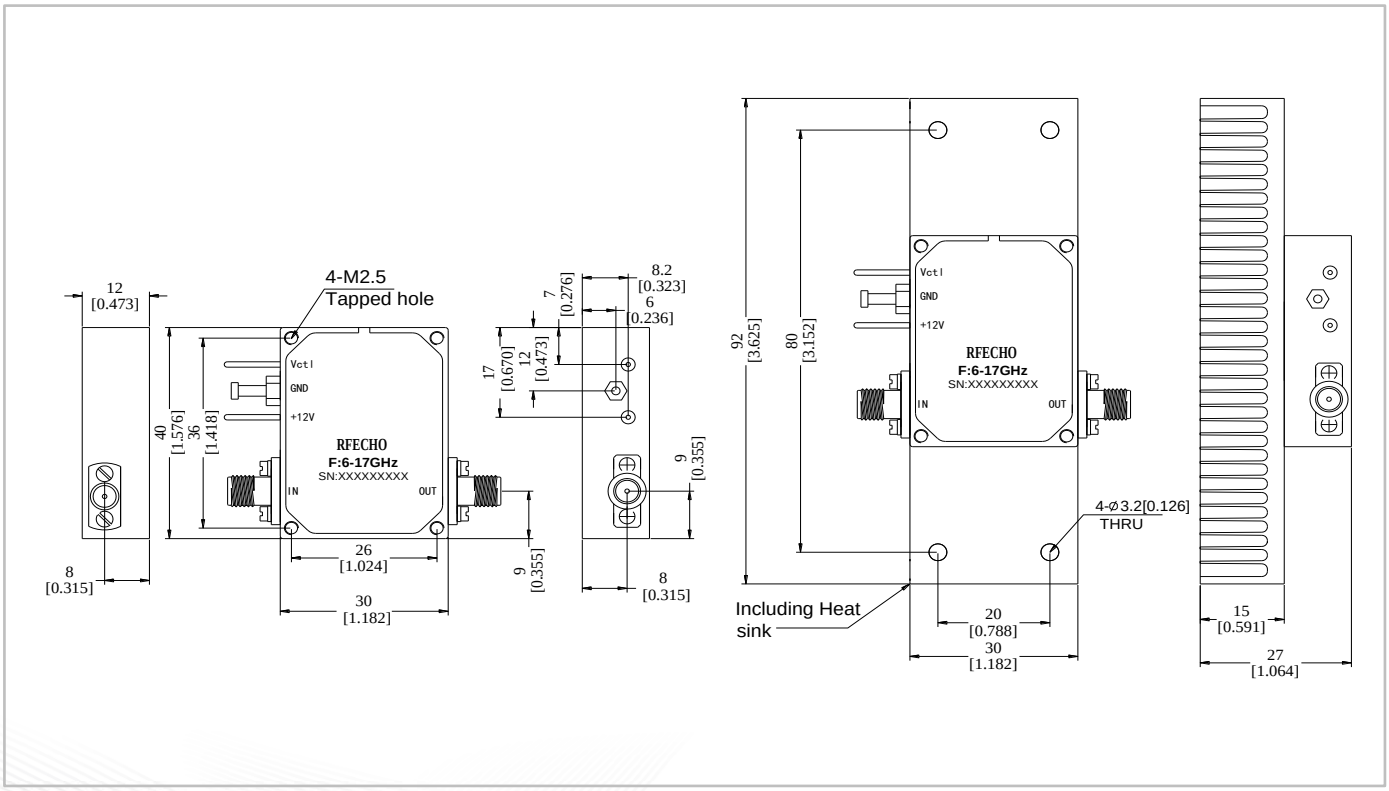
Environmental Specifications

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

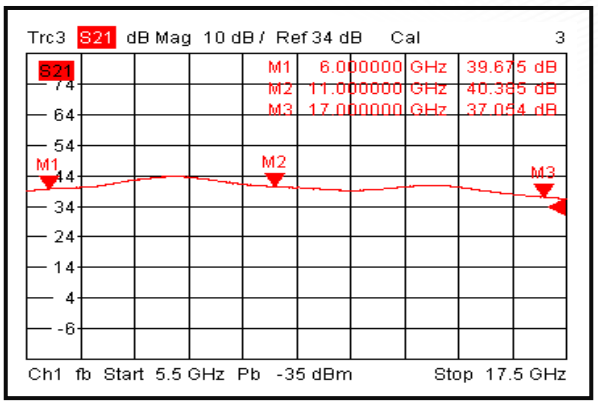
Outline Drawing:

All Dimensions in mm (inches)

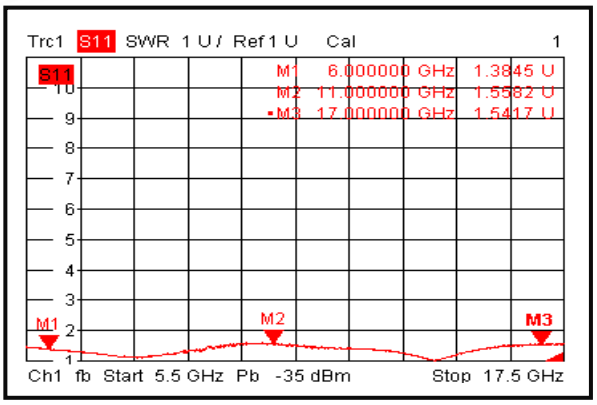
Heat Sink required during operation(Sold Separately)



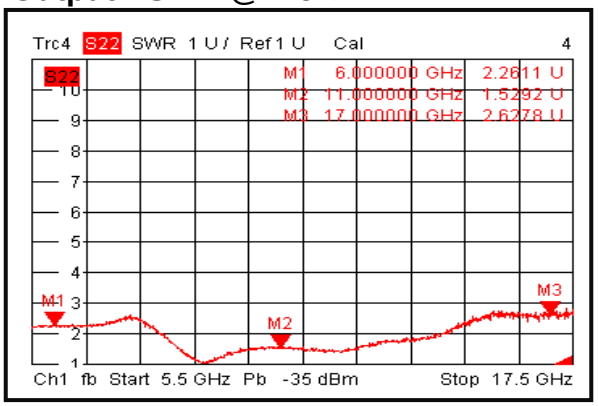
Gain @+25℃



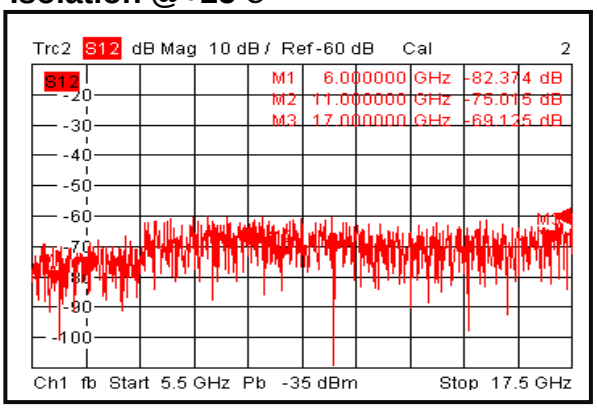
Input VSWR @+25℃



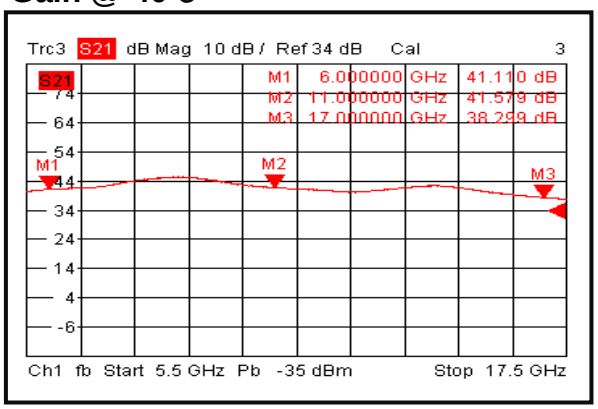
Output VSWR @+25℃



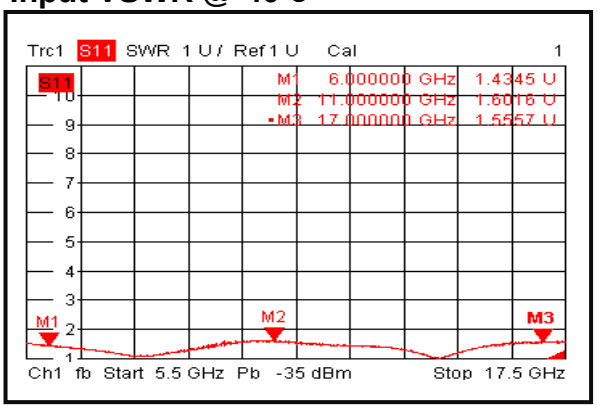
Isolation @+25℃



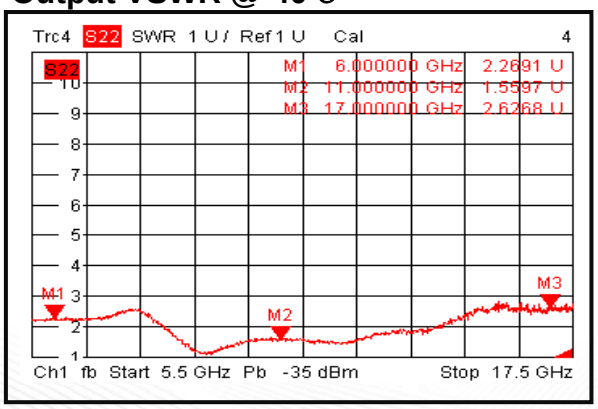
Gain @-40℃



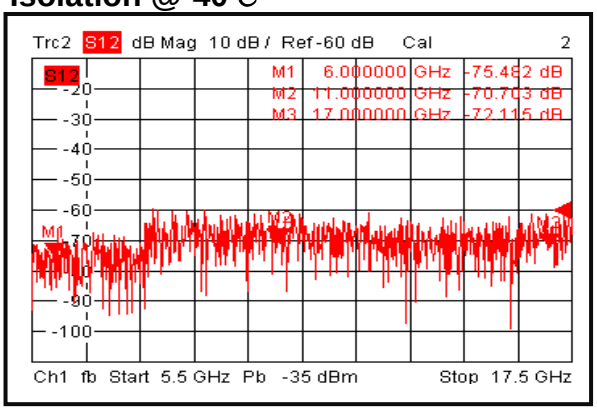
Input VSWR @-40℃



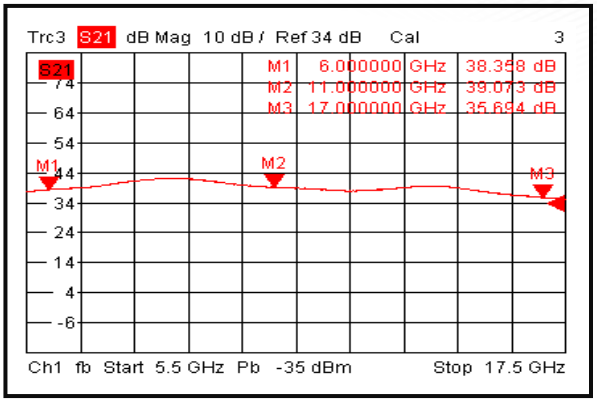
Output VSWR @-40℃



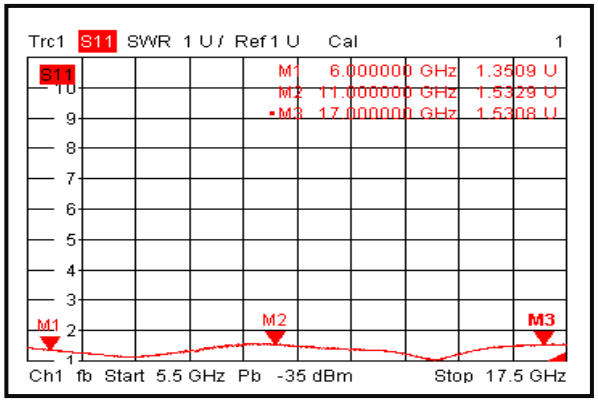
Isolation @-40℃



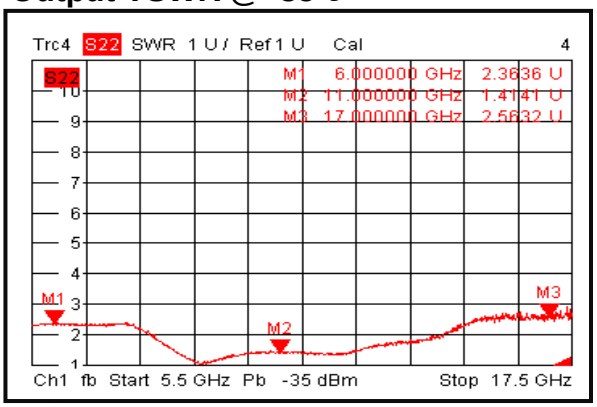
Gain @+85℃



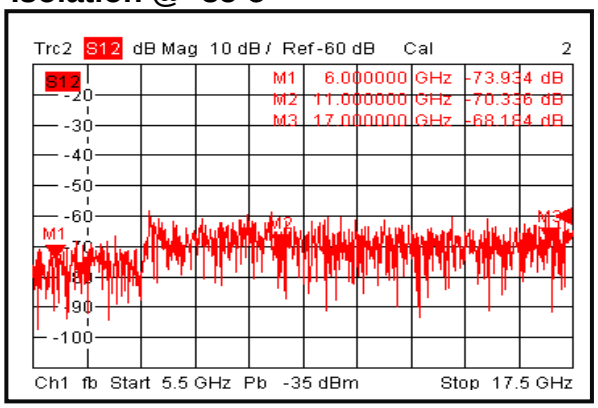
Input VSWR @+85℃



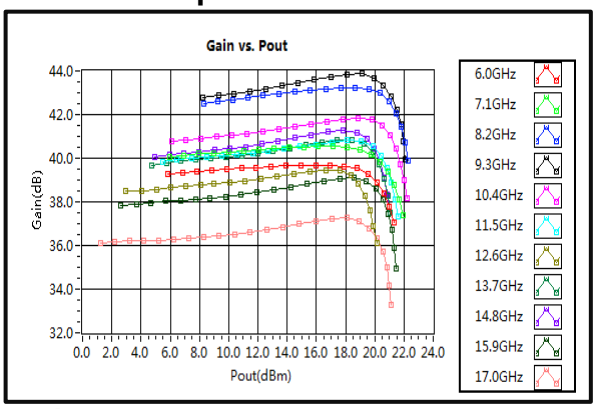
Output VSWR @+85℃



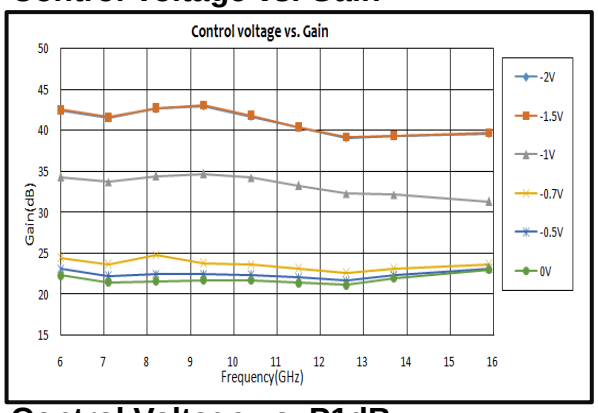
Isolation @+85℃



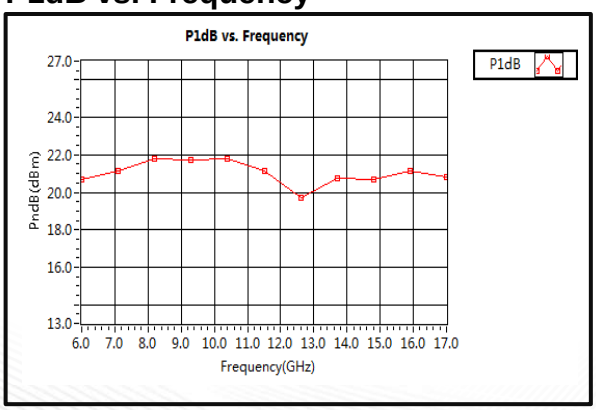
Gain vs. Output Power



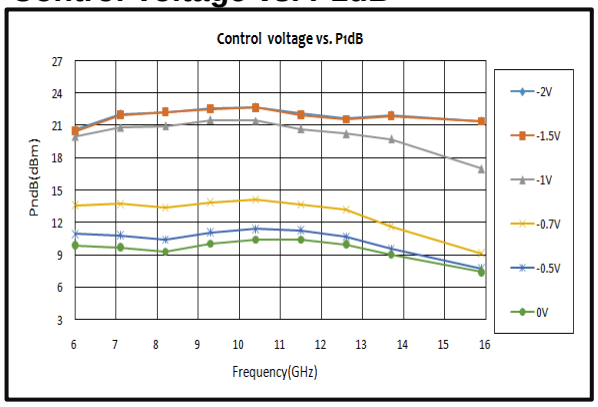
Control Voltage vs. Gain



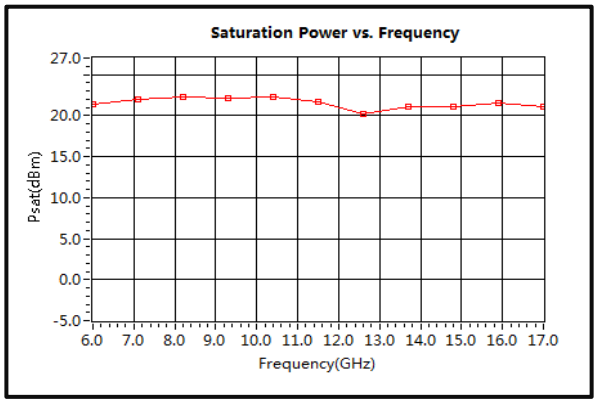
P1dB vs. Frequency



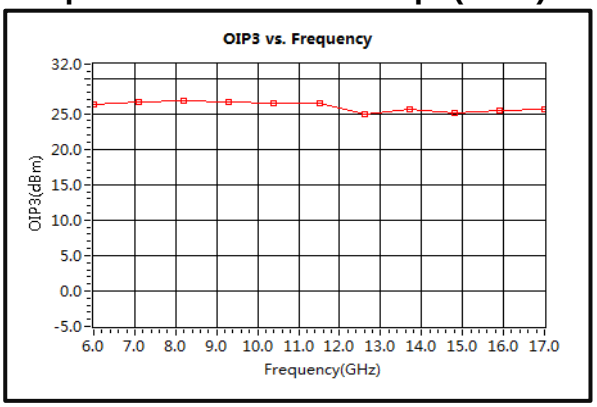
Control Voltage vs. P1dB



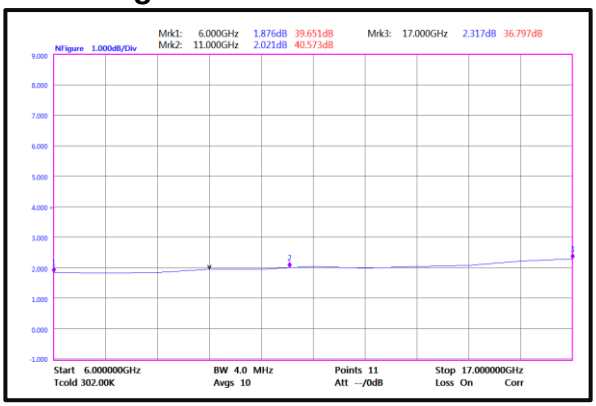
Saturation Power vs. Frequency



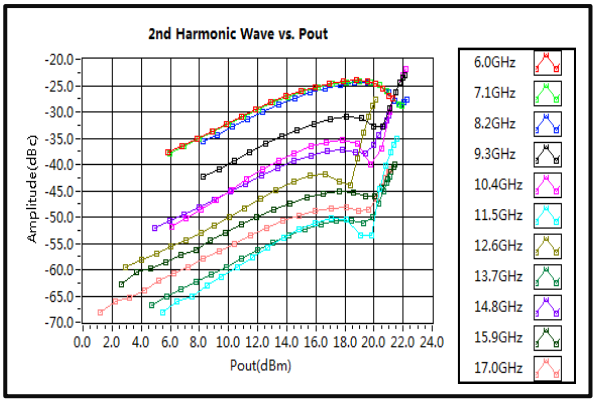
Output Third Order Intercept (OIP3)



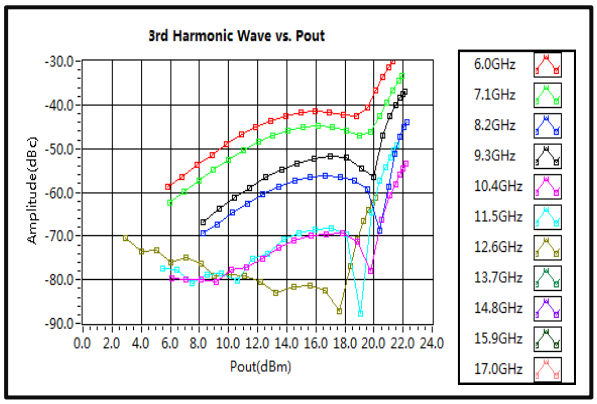
Noise Figure



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power