



Ultra Low Noise Amplifier 50MHz~500MHz

Features

- Gain: 50dB Typical
- Noise Figure: 0.45dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +15V/220mA
- 50 Ohm Matched



Typical Applications

- Wireless Infrastructure
- 5G communication
- Test and measurement Instrument

RF Microwave & VSAT
Fiber Optics

Parameter	Min.	Typ.	Max.	Units
Frequency Range	50		500	MHz
Gain	45	50	55	dB
Gain Flatness		± 2.5	± 3.0	dB
Gain Variation Over Temperature (-40°C~+85°C)		± 1.0		dB
Noise Figure		0.5	0.8	dB
Input VSWR		1.5	2.0	: 1
Output VSWR		2.0	2.5	: 1
Output 1dB Compression Point (P1dB)	19	21		dBm
Saturated Output Power (Psat)		22		dBm
Output Third Order Intercept (OIP3)		30		dBm
Supply Current (Vcc=+15V)		220	250	mA
Isolation S12		-60		dB

Weight	1.1 Max. ounces	Impedance	50 ohms
Input / Output Connectors	SMA-Female	Material	Aluminum
Finish	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Option)



Absolute Maximum Ratings

Operating Voltage	+15.5V
RF Input Power	-25dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +15V biasing

Power OFF Procedure

Step 1	Turn off +15V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications

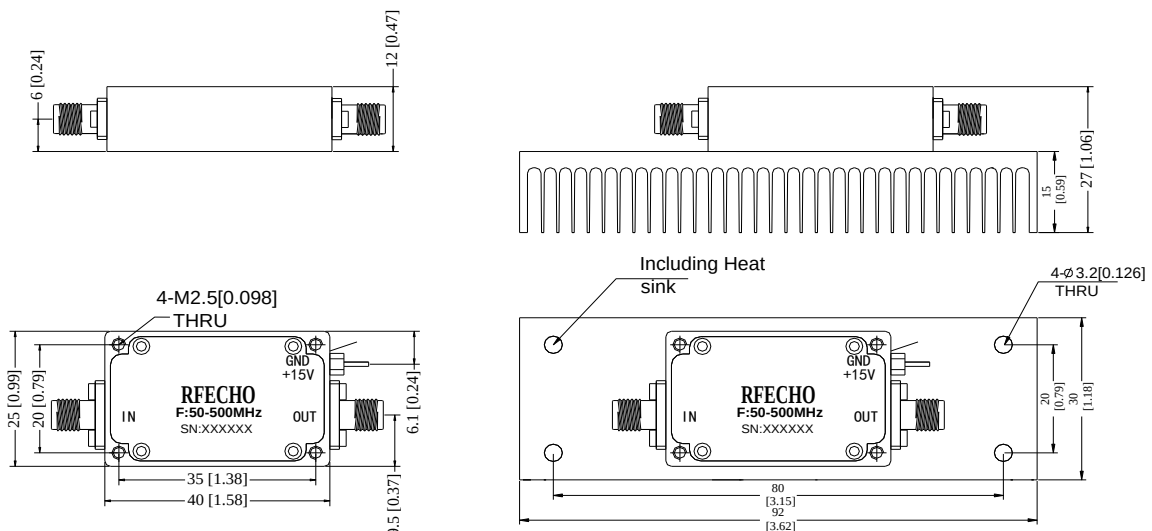
Operational Temperature	-40°C~+85°C
Storage Temperature	-50°C~+105°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Outline Drawing:

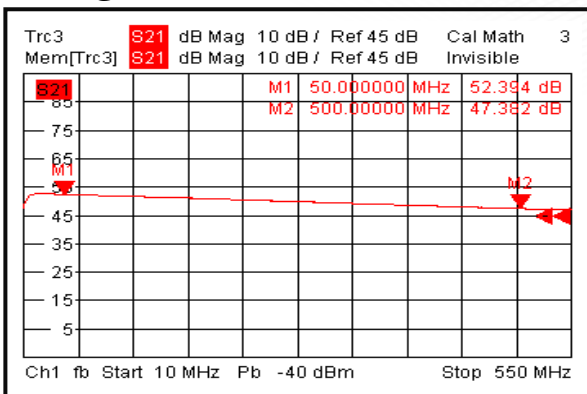
All Dimensions in mm (inches)

Tolerances $\pm 0.1(0.004)$ (Excl heatsink)

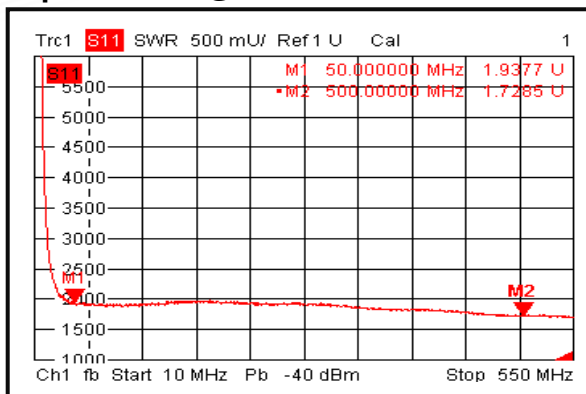
Heat Sink required during operation(Sold Separately)



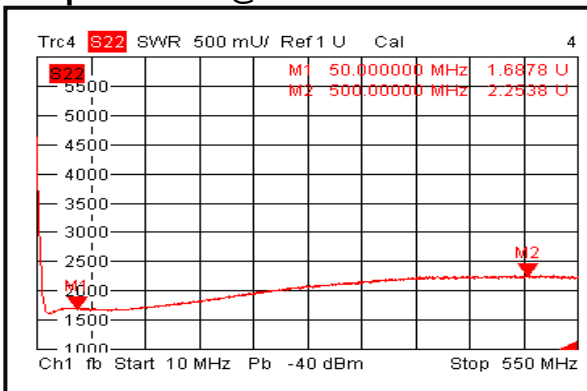
Gain @+25°C



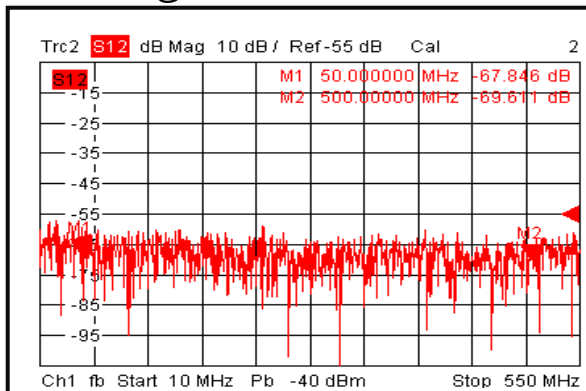
Input VSWR @+25°C



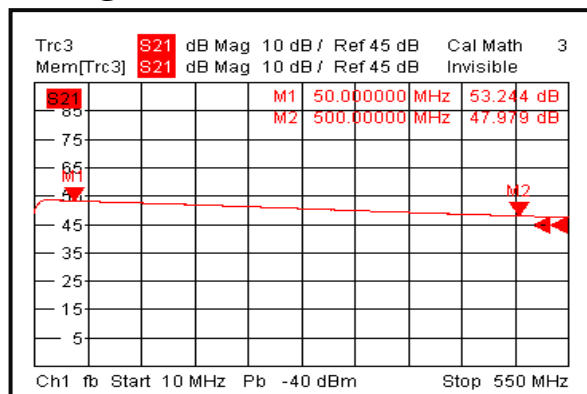
Output VSWR @+25°C



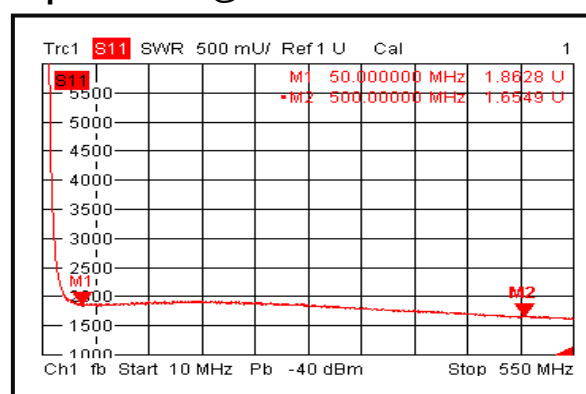
Isolation @+25°C



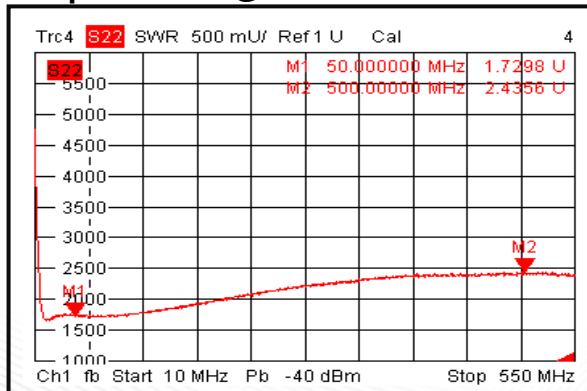
Gain @-40°C



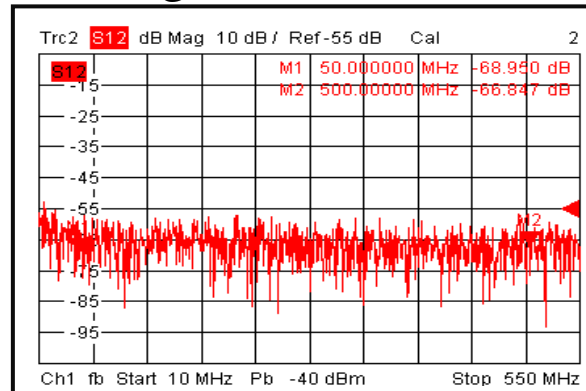
Input VSWR @-40°C



Output VSWR @-40°C

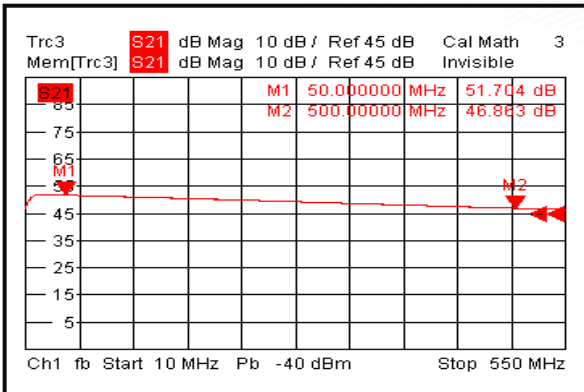


Isolation @-40°C

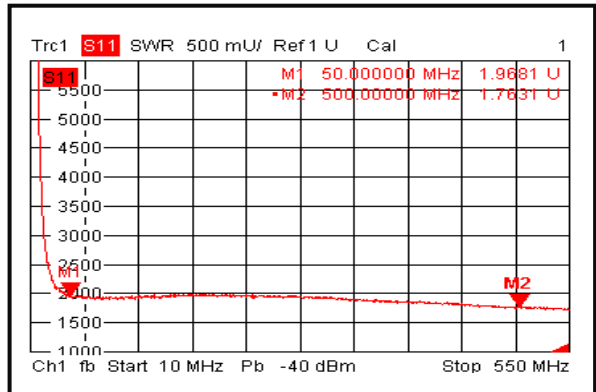




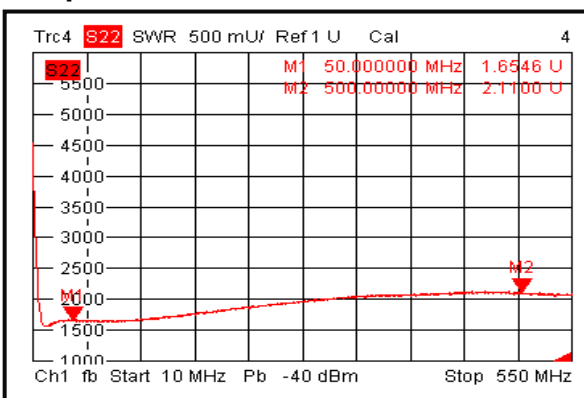
Gain @+85°C



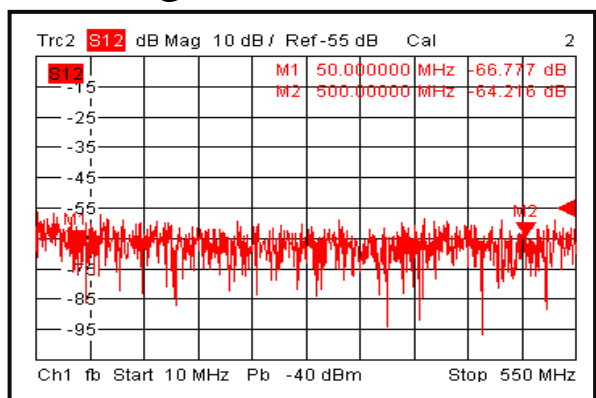
Input VSWR @+85°C



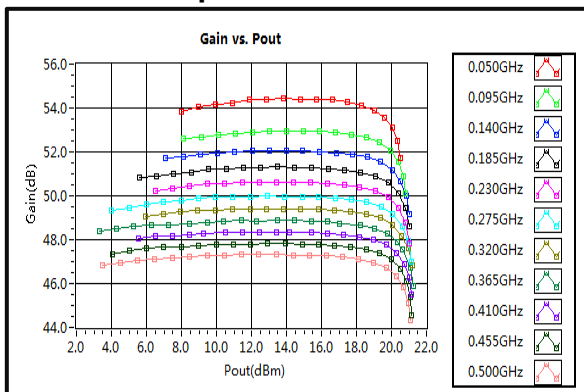
Output VSWR @+85°C



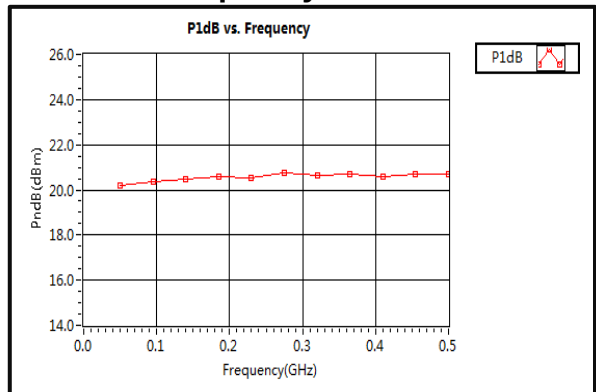
Isolation @+85°C



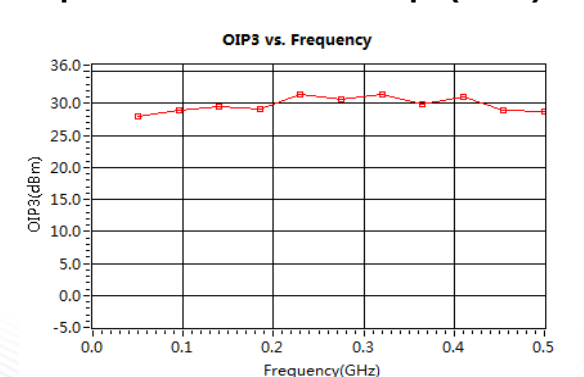
Gain vs. Output Power



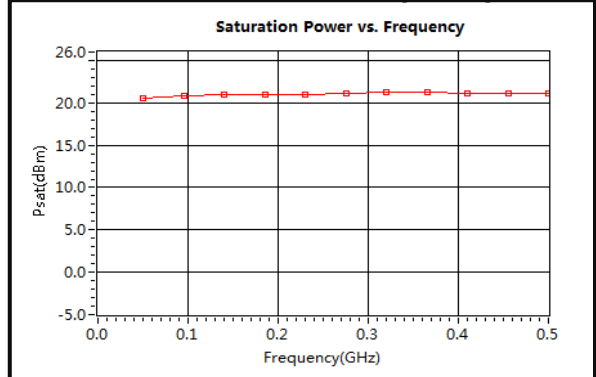
P1dB vs. Frequency



Output Third Order Intercept (OIP3)

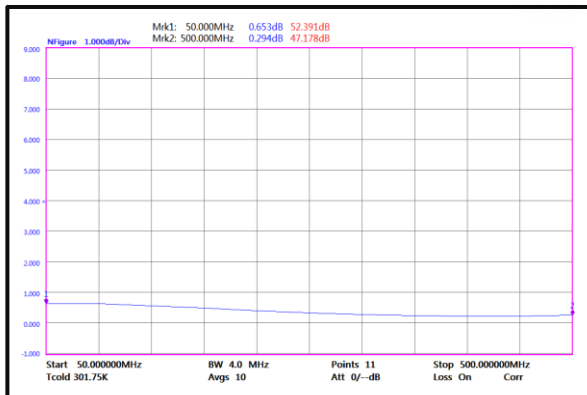


Saturation Power vs. Frequency

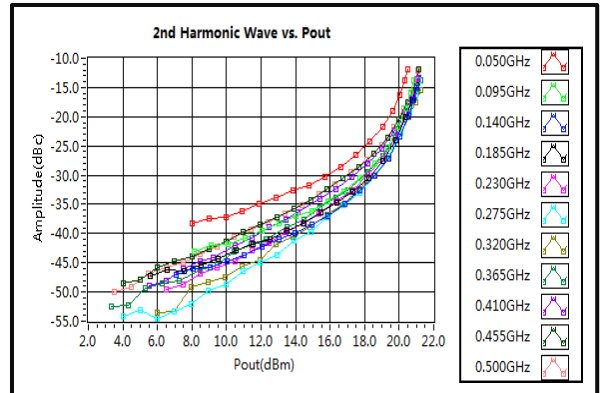




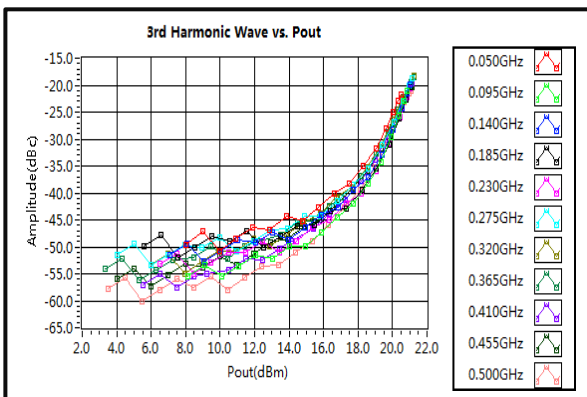
Noise Figure



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

