



Wide Band Low Noise Amplifier 3.7GHz~4.5GHz

Features

- Gain: 35dB Typical
- Noise Figure: 1.3dB Typical
- P1dB Output Power: +23dBm Typical
- Supply Voltage: +12V
- 50 Ohm Matched Input / Output



Typical Applications

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

RF Microwave & VSAT
Fiber Optics

Parameter	Min.	Typ.	Max.	Units
Frequency Range	3.7		4.5	GHz
Gain	32	35		dB
Gain Flatness		±0.5	±0.8	dB
Gain Variation Over Temp(-40°C~+85°C)		±0.8		dB
Noise Figure		1.3	1.8	dB
Input VSWR		1.5	2.0	: 1
Output VSWR		1.4	2.0	: 1
Output 1dB Compression Point (P1dB)	20	23		dBm
Saturated Output Power (Psat)		25		dBm
Output Third Order Intercept (OIP3)		33		dBm
Isolation S12		-55		dB
Supply Current (Vcc=+12V)		350	400	mA

Weight	1.06ounces	Impedance	50 ohms
Input /Output Connectors	SMA-Female	Material	Aluminum
Finish	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Optional)



Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power (RFIN)	-8dBm

Biassing 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

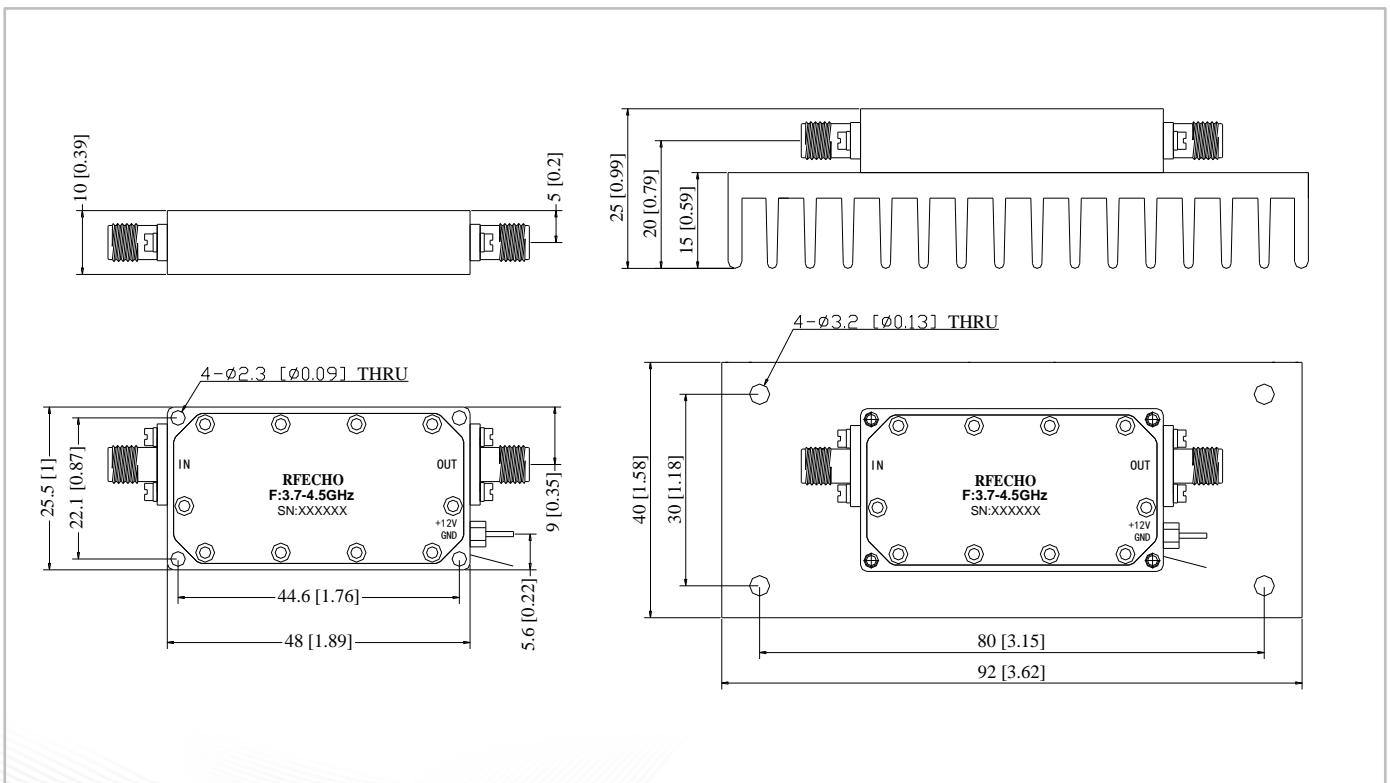
Environmental Specifications

Operational Temperature	-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:

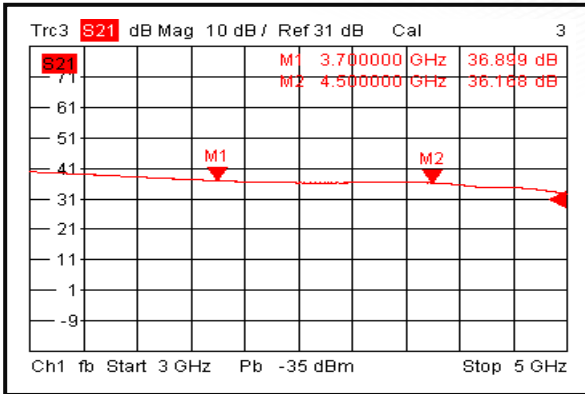
All Dimensions in mm (inches)

Heat Sink required during operation(Sold Separately)

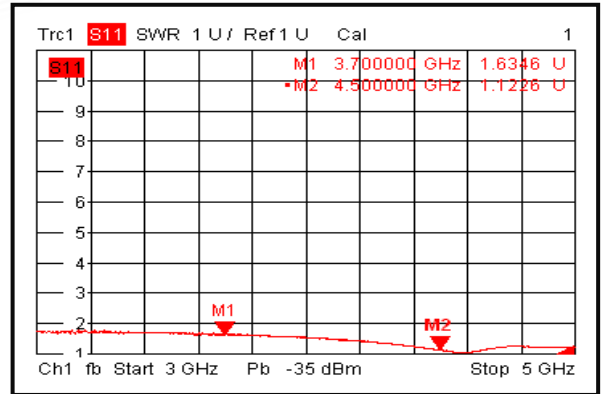




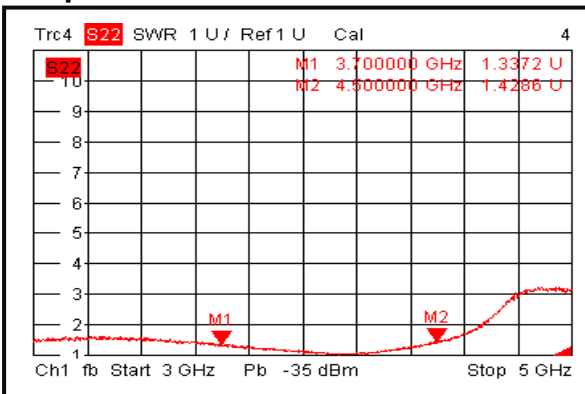
Gain @+25°C



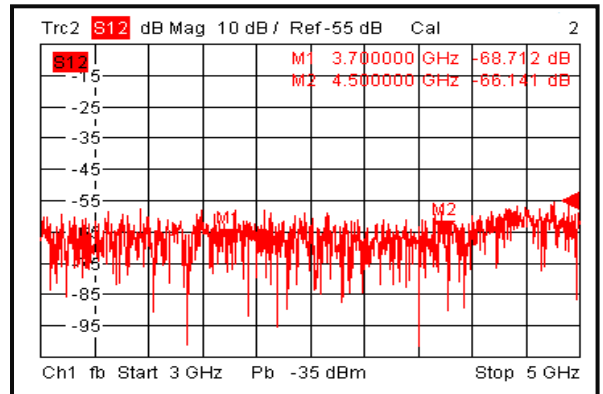
Input VSWR @+25°C



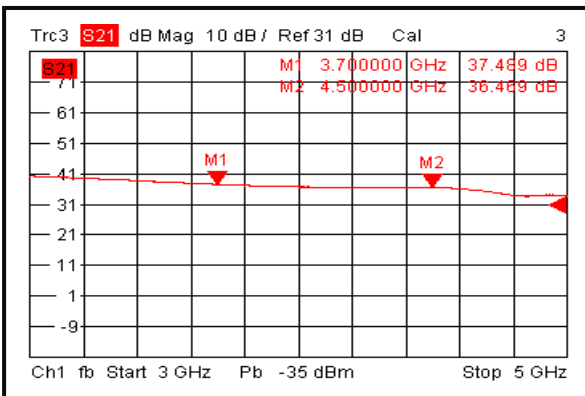
Output VSWR @+25°C



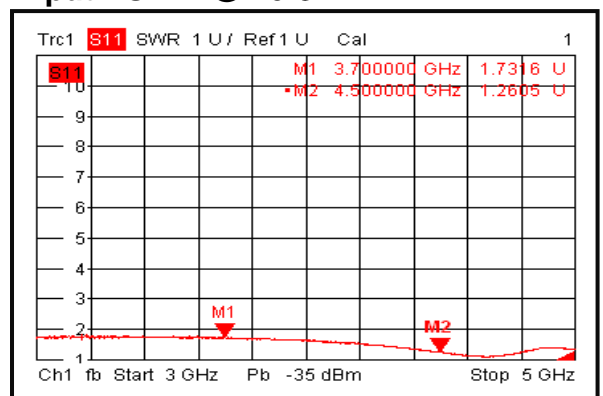
Isolation @+25°C



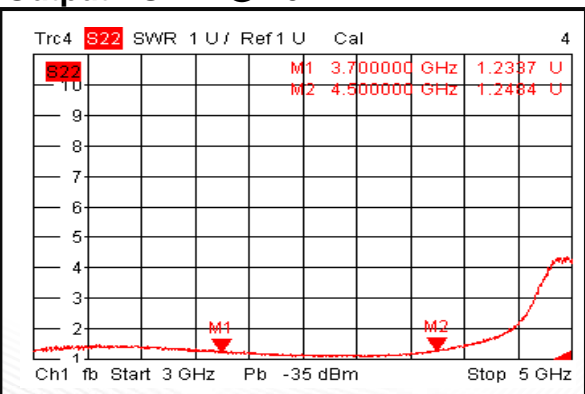
Gain @-40°C



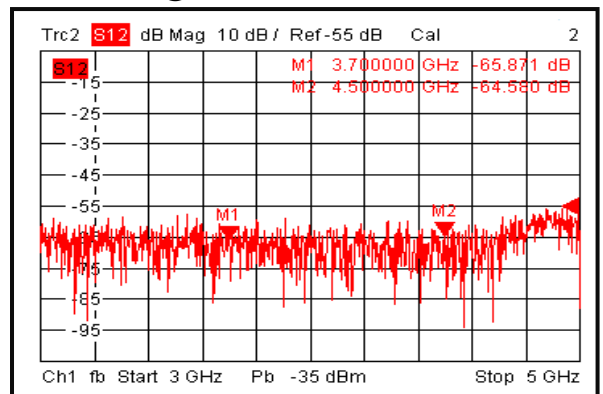
Input VSWR @-40°C



Output VSWR @-40°C

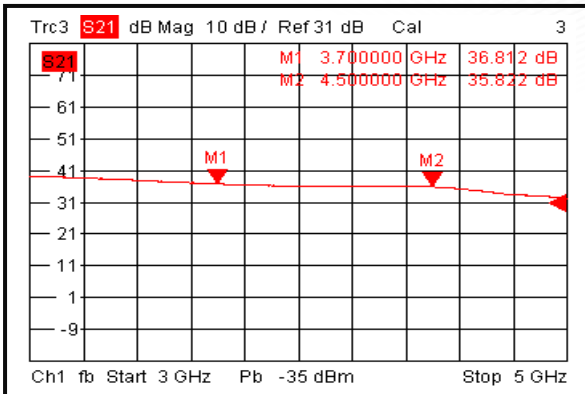


Isolation @-40°C

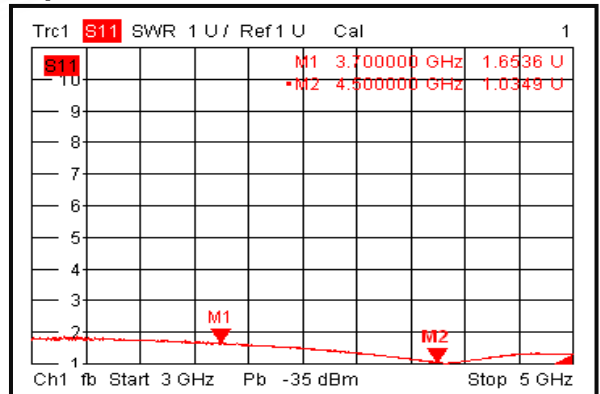




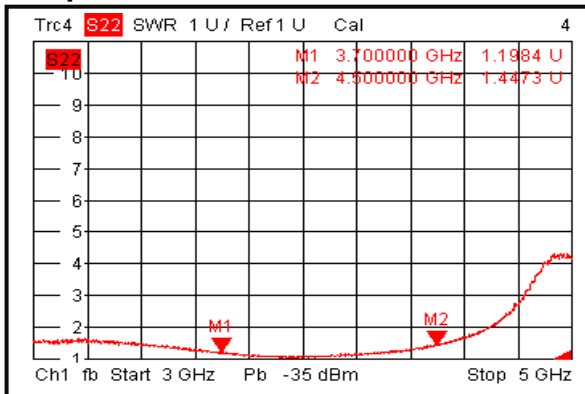
Gain @+85°C



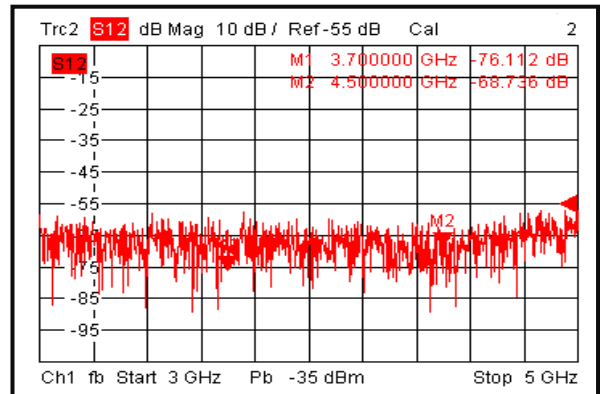
Input VSWR @+85°C



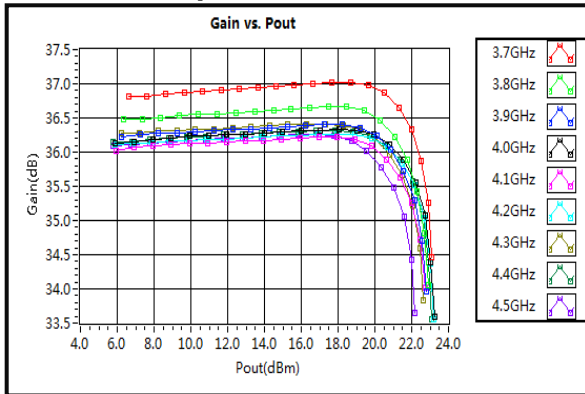
Output VSWR @+85°C



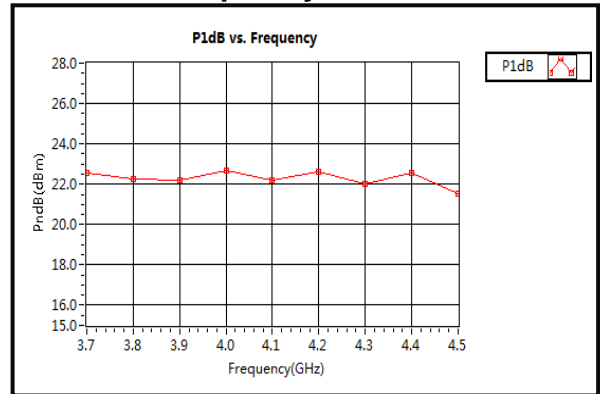
Isolation @+85°C



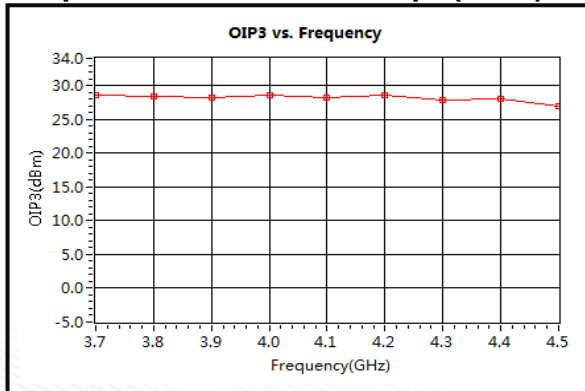
Gain vs. Output Power



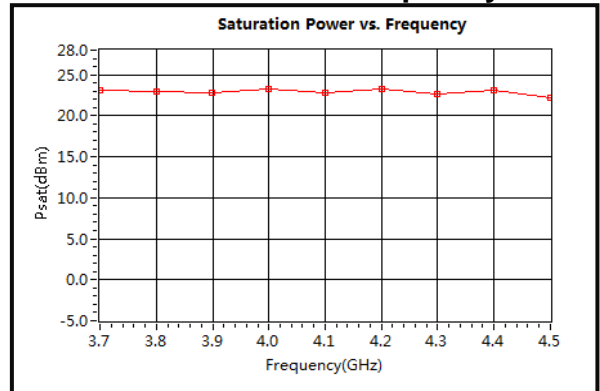
P1dB vs. Frequency



Output Third Order Intercept (OIP3)

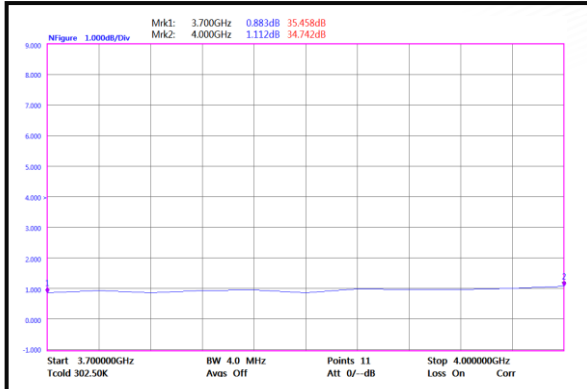


Saturation Power vs. Frequency





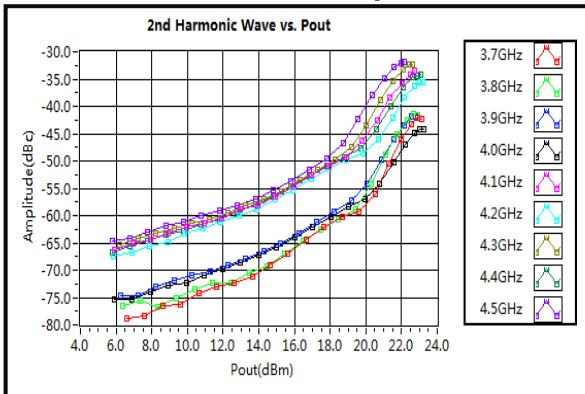
Noise Figure(3.7-4GHz)



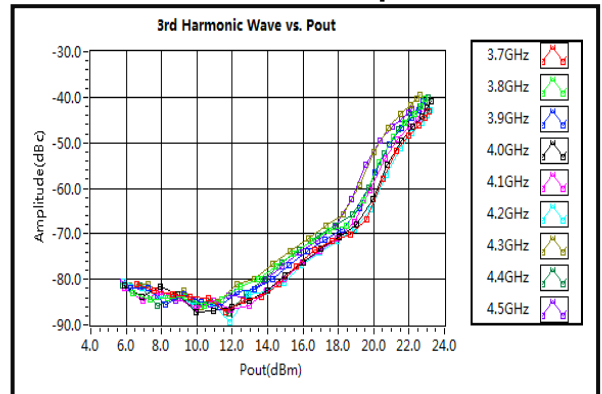
Noise Figure(4-4.5GHz)



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

