

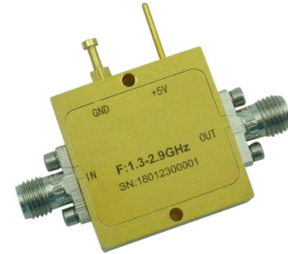


## QOTANA TECHNOLOGIES

## Low Noise Amplifier 1.3GHz~2.9GHz

### Features

- Gain: 25 dB Typical
- Noise Figure: 1.2dB Typical
- P1dB Output Power: +20 dBm Typical
- Supply Voltage: +5V @ 150mA
- 50 Ohm Matched Input / Output
- Size: 0.98" x 0.98" x 0.394"



### 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	1.3		2.2	2.2		2.9	GHz
Gain	23	25		22	24		dB
Gain Flatness		±0.5	±1.0		±1.0	±1.5	dB
Gain Variation Over Temperature (-40°C~+85°C)		±0.5			±0.5		dB
Noise Figure		1.2			1.3		dB
Input VSWR		1.5	2		1.8	2	: 1
Output VSWR		1.8	2		1.8	2	: 1
Output 1dB Compression Point (P1dB)	14	18		17	21		dBm
Saturated Output Power (Psat)		19			22		dBm
Output Third Order Intercept (OIP3)		25			22		dBm
Supply Current (I <sub>dd</sub> ) (V <sub>cc</sub> =+5V)		150	210		150	210	mA
Isolation S <sub>12</sub>		-55			-45		dB
Input Max Power(no damage)	+15						dBm

Weight	1.76 ounces	Impedance	50ohms
Input / Output Connectors	SMA-Female	Material	copper
Finish	Gold Plated	Package Sealing	Epoxy Sealed (Standard)
			Hermetically Sealed (Option with extra charge)



### Absolute Maximum Ratings

Operating Voltage	+5.5V
RF Input Power (RFIN)	+25dBm

### Biassing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +5V biasing

### Power OFF Procedure

Step 1	Turn off +5V biasing
Step 2	Remove RF connection
Step 3	Remove Ground

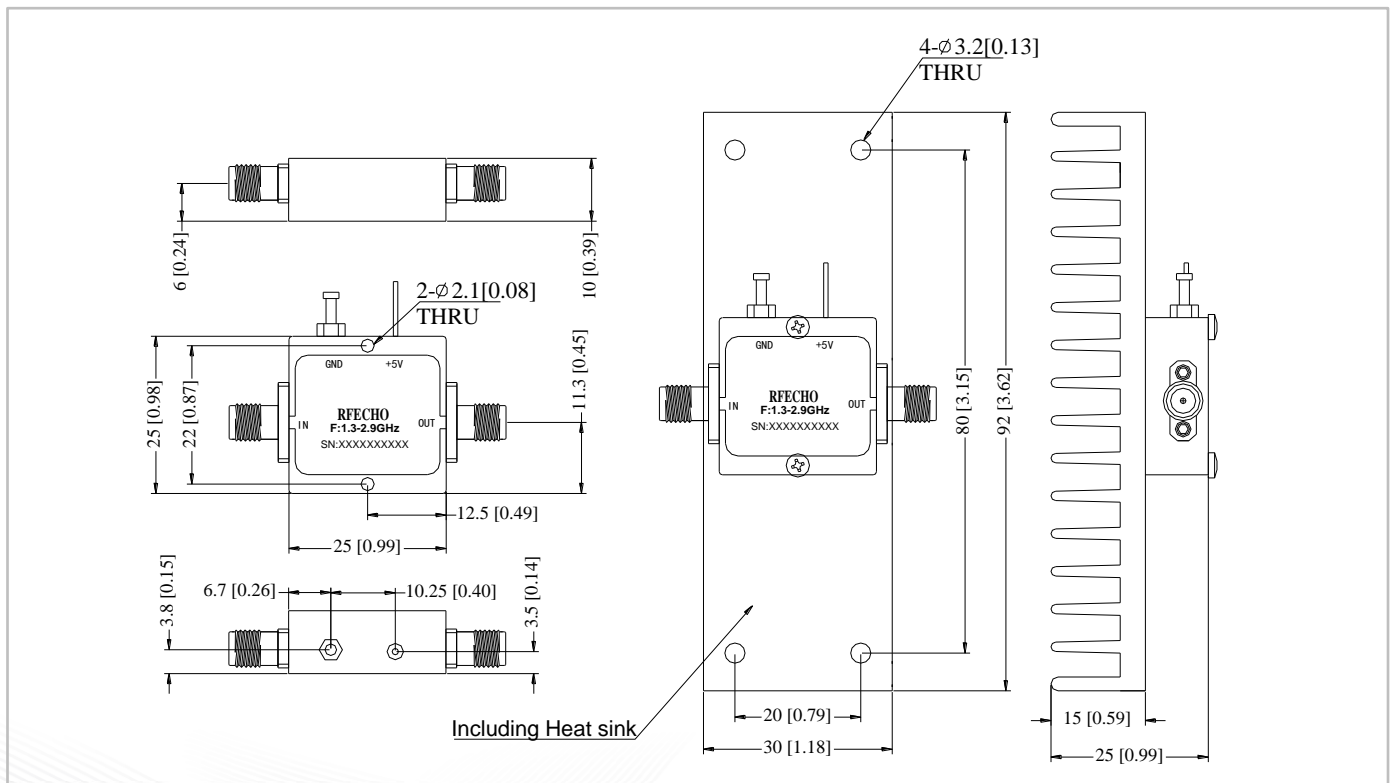
### Environmental Specifications

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:

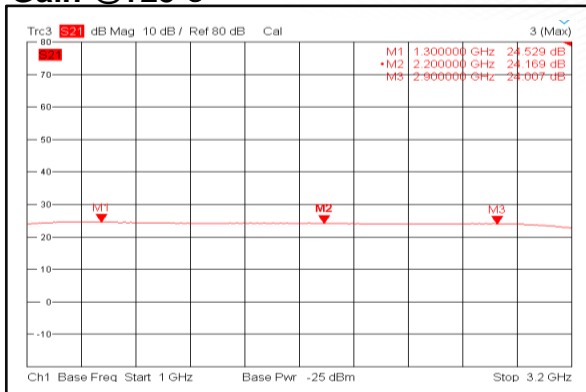
All Dimensions in mm (inches)

Heat Sink required during operation(Sold Separately)

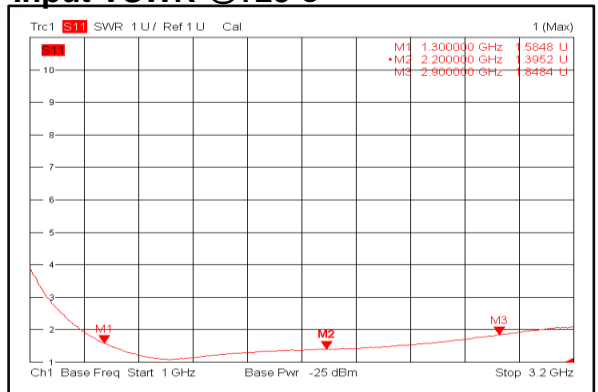




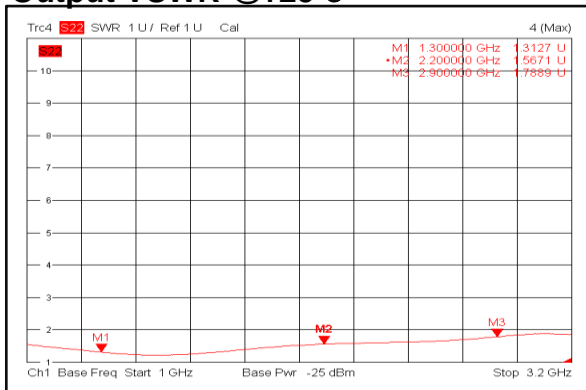
### Gain @+25°C



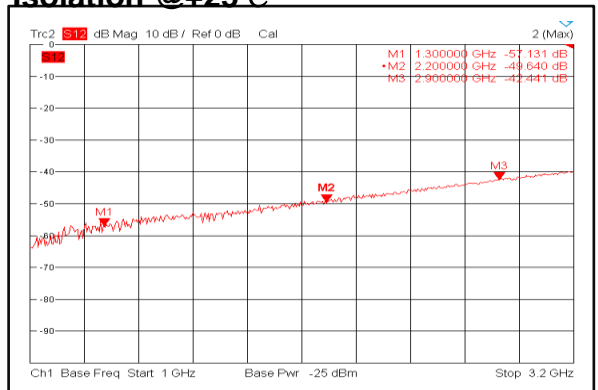
### Input VSWR @+25°C



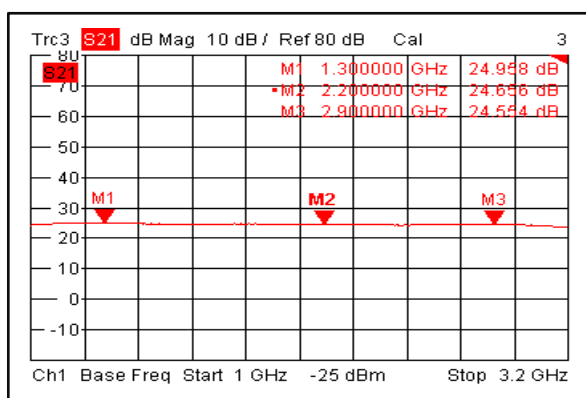
### Output VSWR @+25°C



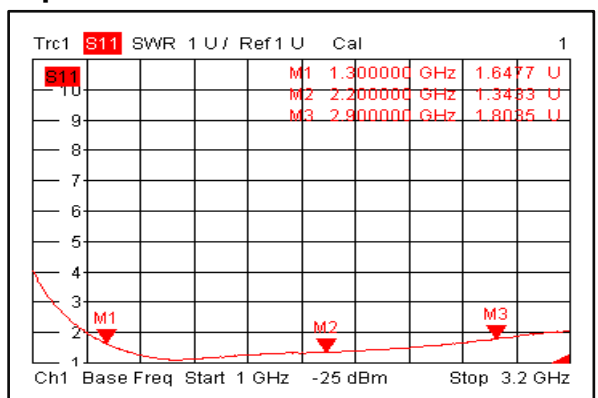
### Isolation @+25°C



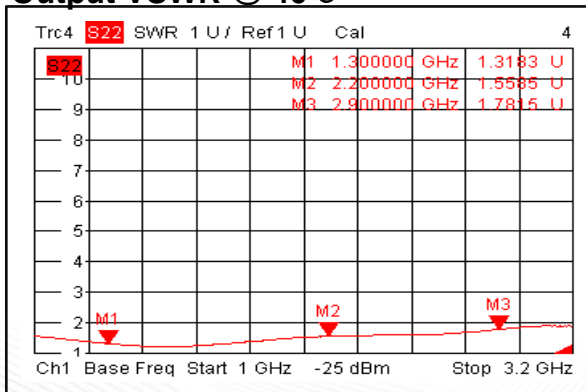
### Gain @-40°C



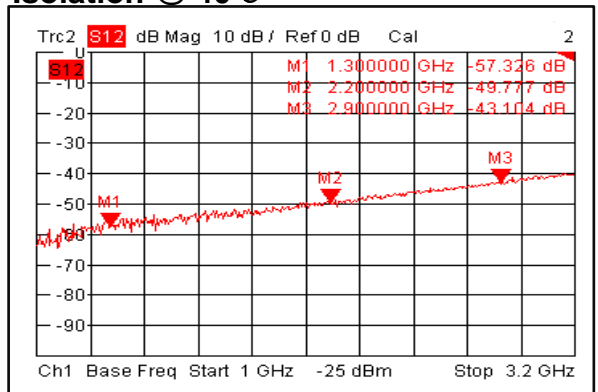
### Input VSWR @-40°C



### Output VSWR @-40°C

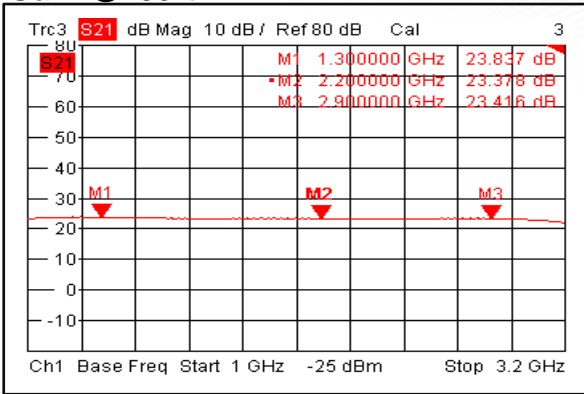


### Isolation @-40°C

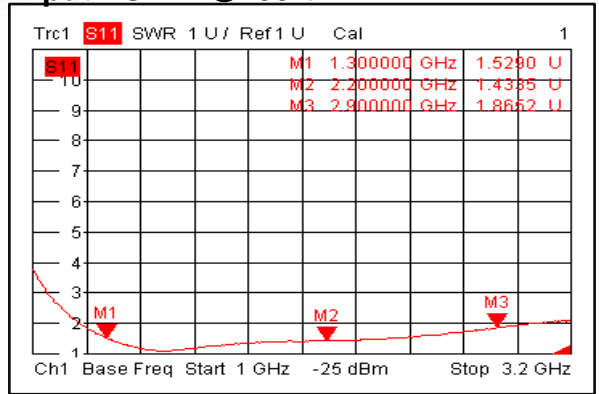




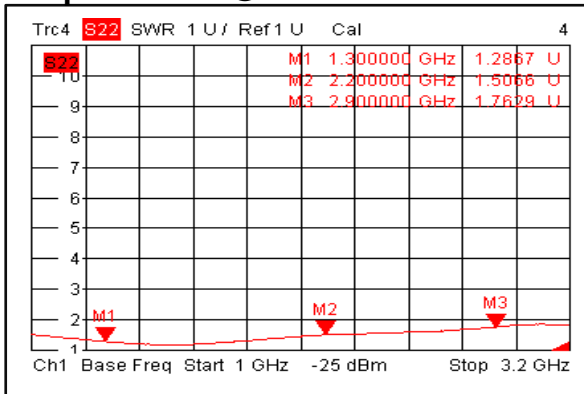
### Gain @+85°C



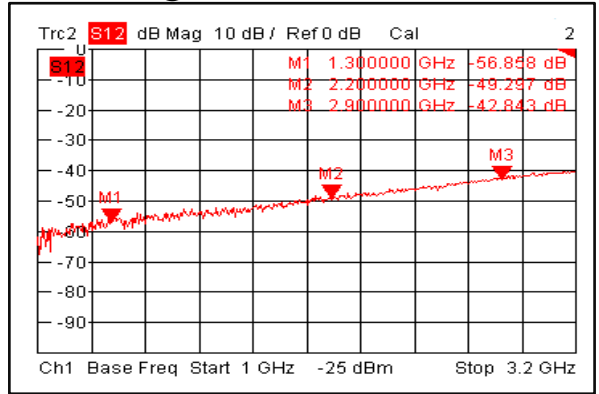
### Input VSWR @+85°C



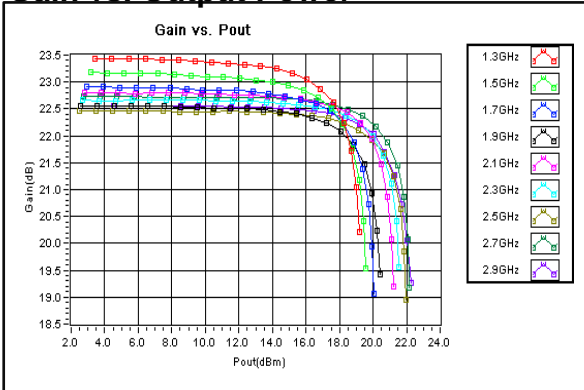
### Output VSWR @+85°C



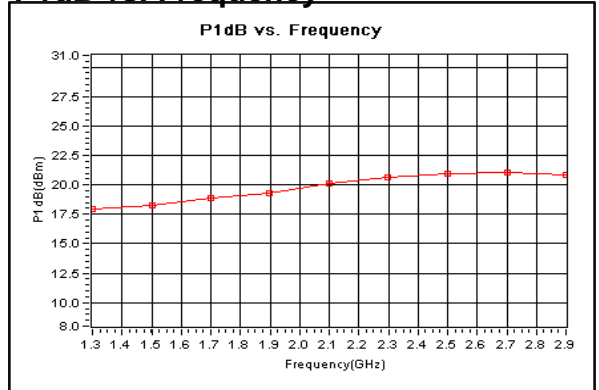
### Isolation @+85°C



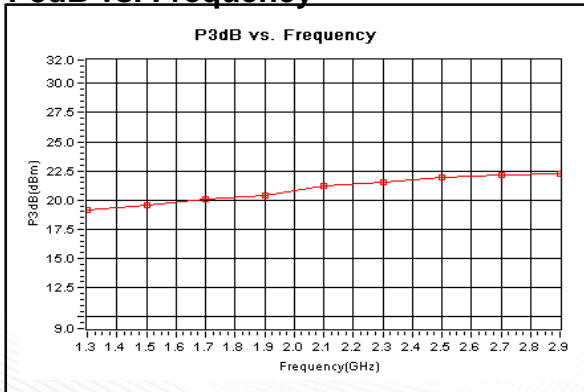
### Gain vs. Output Power



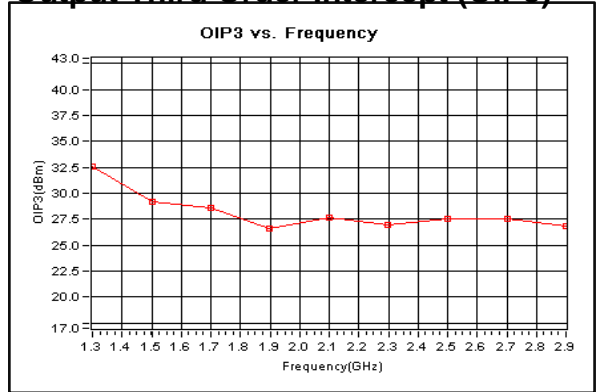
### P1dB vs. Frequency



### P3dB vs. Frequency

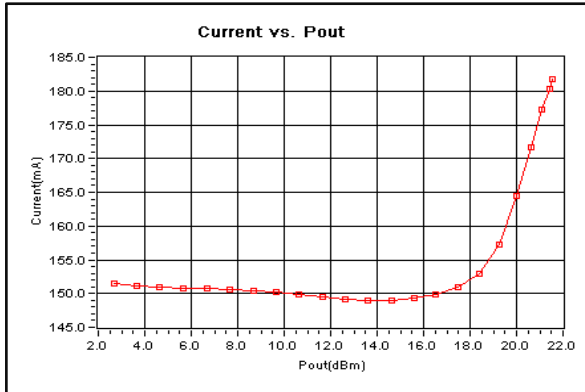


### Output Third Order Intercept (OIP3)

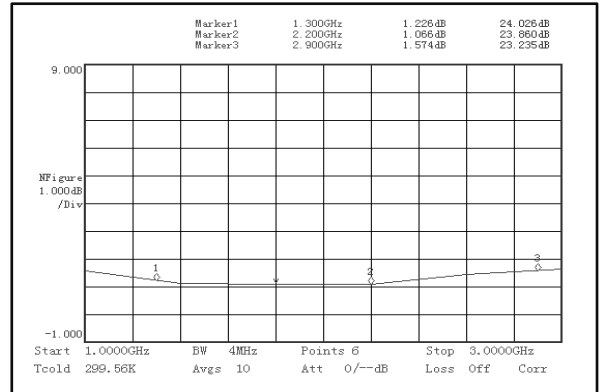




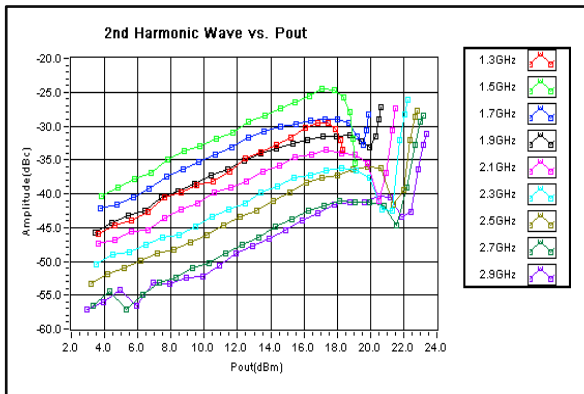
## Current



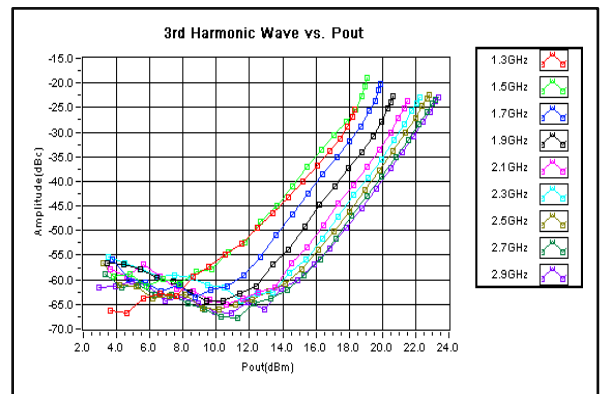
## Noise Figure



## 2nd Harmonic Wave Output Power



## 3rd Harmonic Wave Output Power



## 4th Harmonic Wave Output Power

