



### 2W Front End Over Drive Protected LNA 5GHz~13GHz



#### Features

- Gain: 45dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +20dBm Typical
- Supply Voltage: +24V

#### Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument
- Fiber Optics

#### Electrical Specifications, TA = +25°C, Vcc = +24V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	5		11	11		13	GHz
Gain	42	46		35	42		dB
Gain Flatness		±1.5	±2.0		±4.0	±6	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure		1.8	3.5		2.0	3.5	dB
Input VSWR		2.0			2.0		: 1
Output VSWR		2.0	3		1.6		: 1
Input Power (dBm)			34			34	dBm
Output 1dB Compression Point (P1dB)		20			22		dBm
Saturated Output Power (Psat)		22			26		dBm
Output Third Order Intercept (IP3)		31			32		dBm
Supply Current (Vcc=+24V)		160	300		160	300	mA
Isolation S12		-70			-70		dB
Weight	2.3						ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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**Absolute Maximum Ratings**

Operating Voltage	+24~28V
RF Input Power@(50Ω)	34dBm

**Biasing Up Procedure**

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +24V biasing
Power OFF Procedure	
Step 1	Turn off +24V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

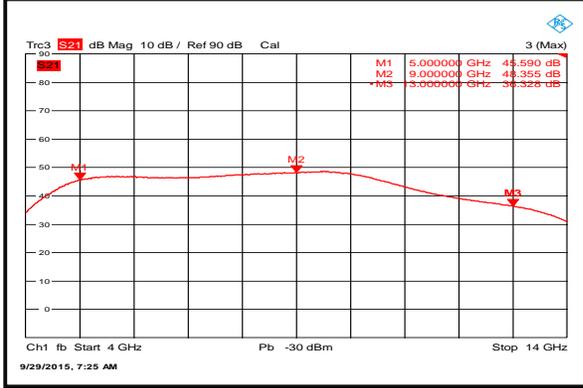
**Environmental Specifications and Test Standards**

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C(5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

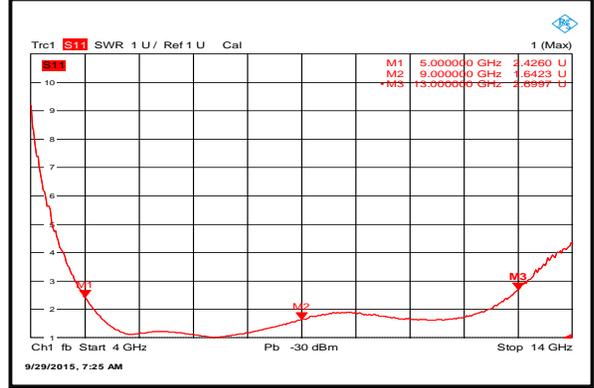


**Typical Performance Plots**

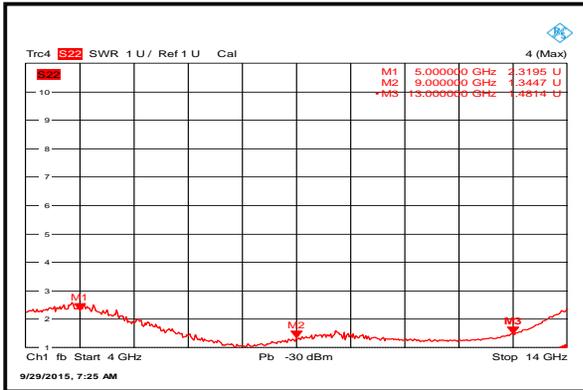
**Gain**



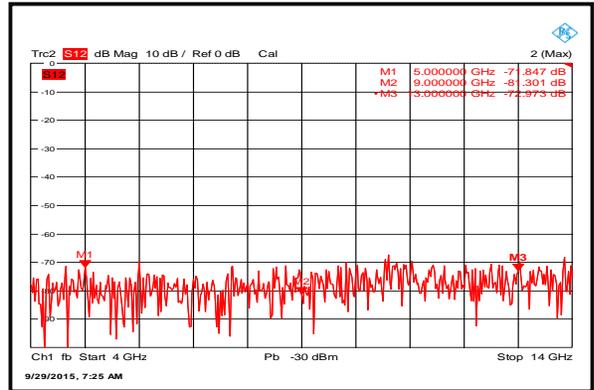
**Input VSWR**



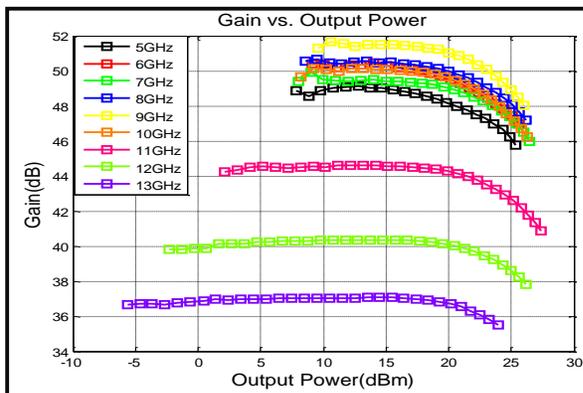
**Output VSWR**



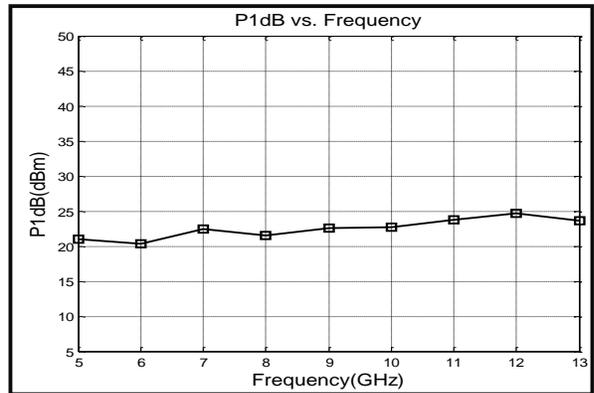
**Isolation**



**Gain vs. Output Power**



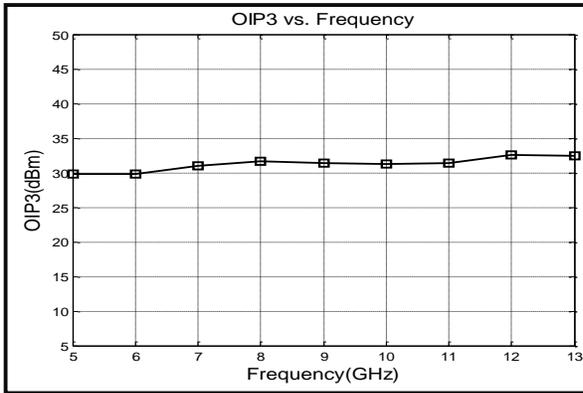
**P1dB vs. Frequency**



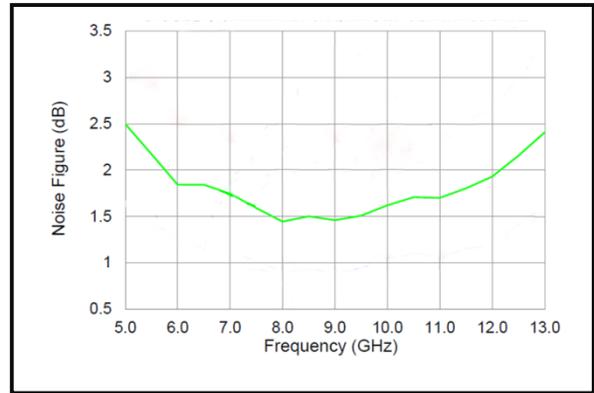
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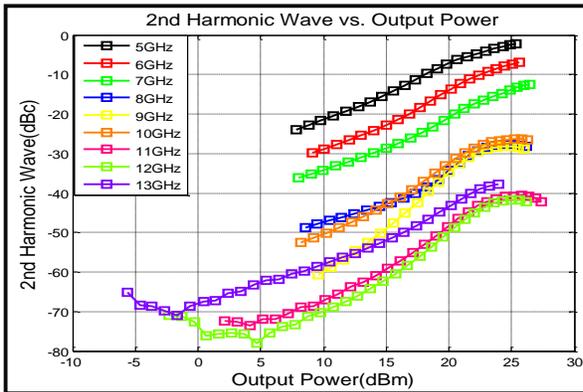
### Output Third Order Intercept (IP<sub>3</sub>)



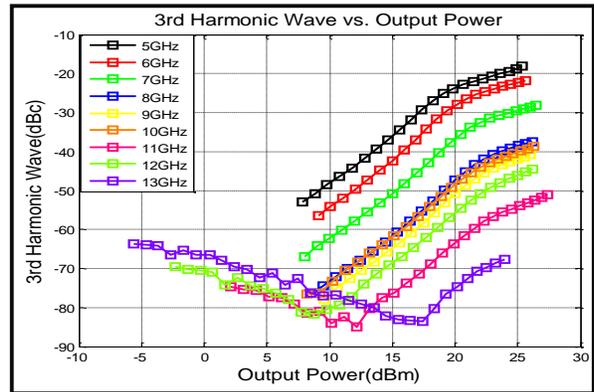
### Noise Figure



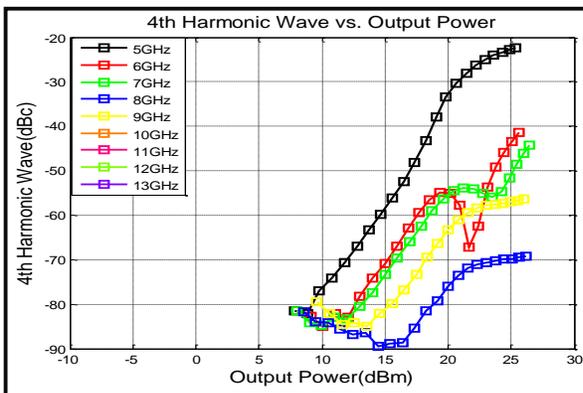
### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



### 4th Harmonic Wave output Power

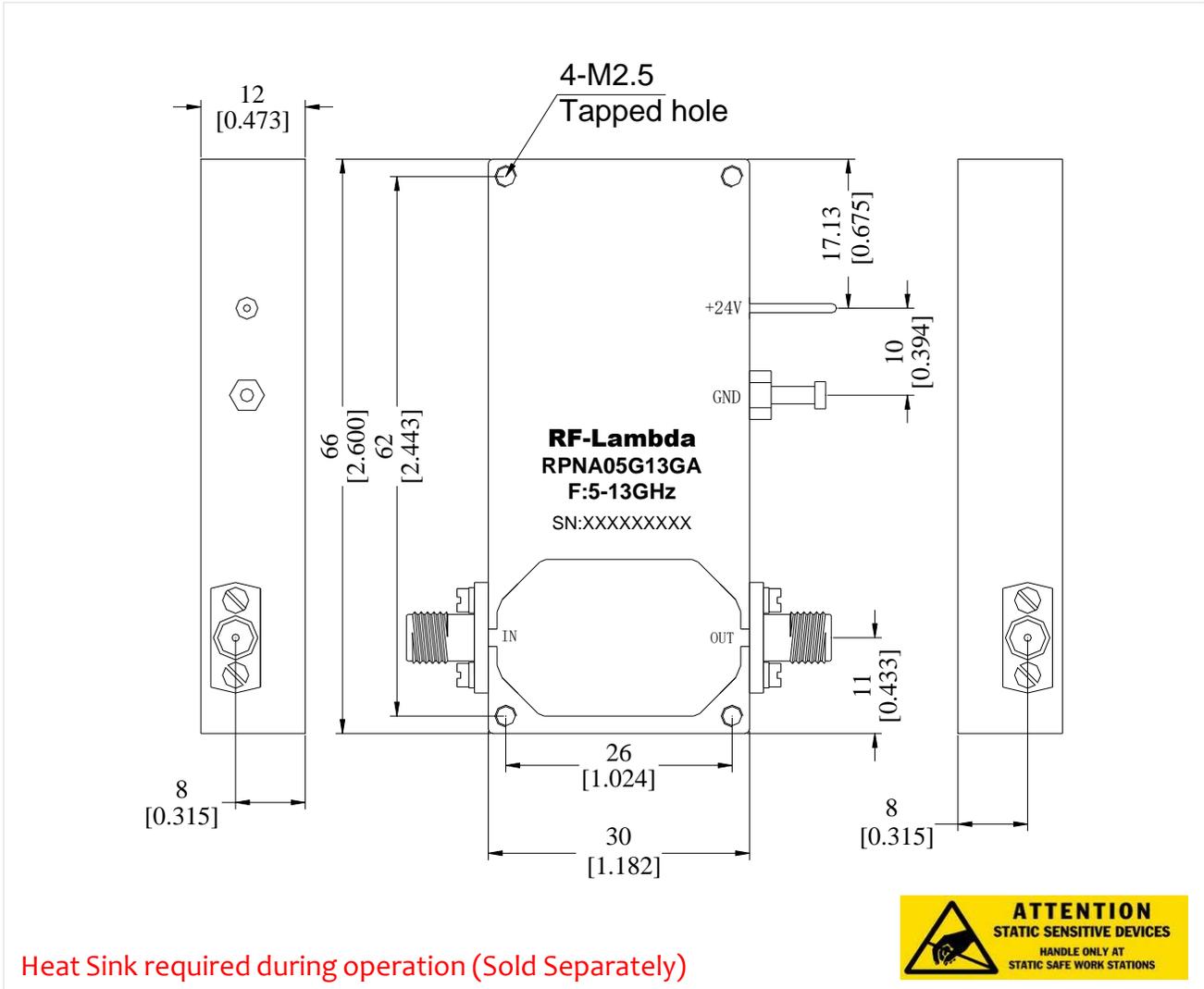


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**Outline Drawing:**

All Dimensions in mm [inches]



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**Ordering Information**

Part No.	ECCN	Description
RPNA05G13GA	EAR99	5-13GHz Low Noise Amplifier

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