



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RPNA01G23GA

10W Front End Over Drive Protected LNA 1GHz~23GHz



Features

- Gain: 29dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +20dBm
- 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	1		12	12		23	GHz
Gain	28	31		24	27		dB
Gain Flatness		±1.5	±2.0		±1.5	±2.0	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.5		dB
Noise Figure		3.5	4.5		5.0	8.0	dB
Input VSWR		2.0	3.8		1.8	2.0	:1
Output VSWR		1.8	2.0		1.8	2.2	:1
Output 1dB Compression Point (P1dB)	25	26		17	20		dBm
Input Power (dBm)			40			40	dBm
Saturated Output Power (Psat)		27			23		dBm
Output Third Order Intercept (IP3)		36			27		dBm
Supply Current (Vcc=+24V)		250	360		250	360	mA
Isolation S12		-65			-45		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 Sealing (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+28V
RF Input Power	+40dBm

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.

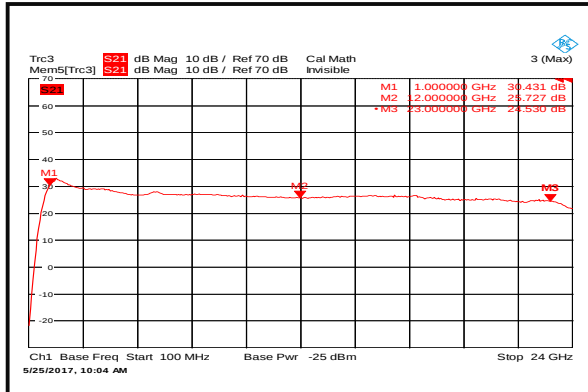
Environmental Specifications and Test Standards

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	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)

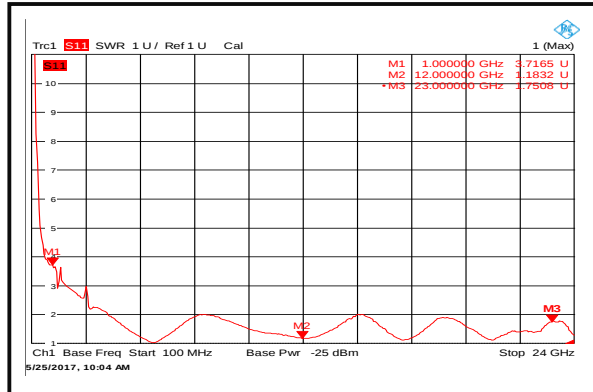


Typical Performance Plots

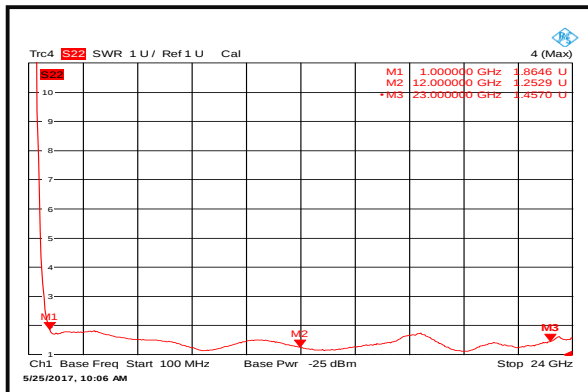
Gain @+25°C



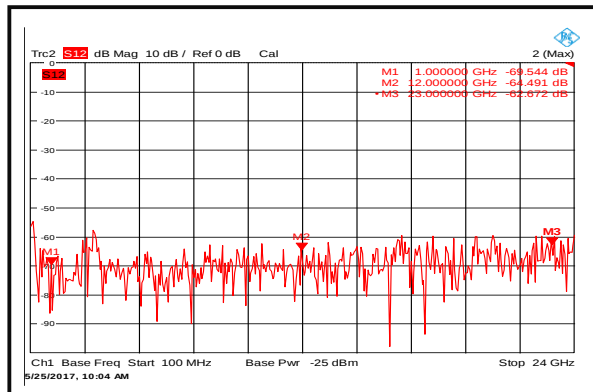
Input VSWR @+25°C



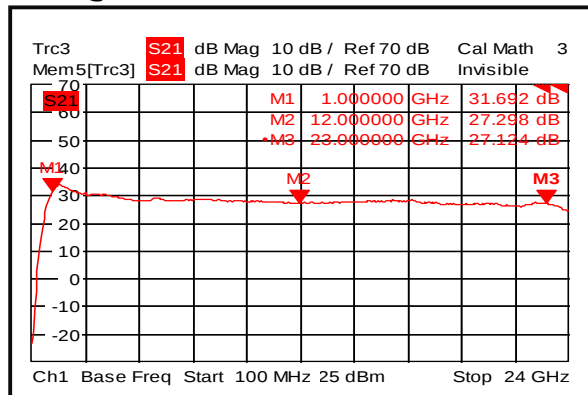
Output VSWR @+25°C



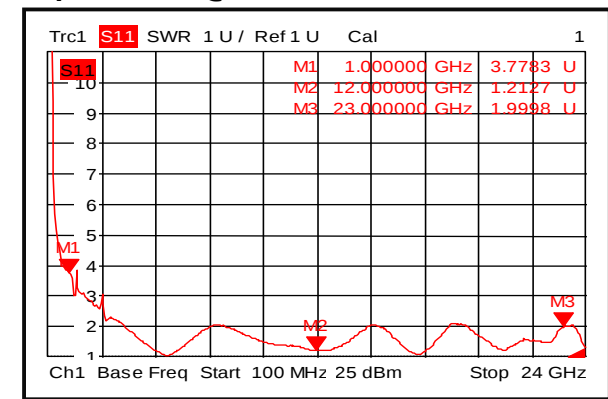
Isolation @+25°C



Gain @-45°C



Input VSWR @-45°C



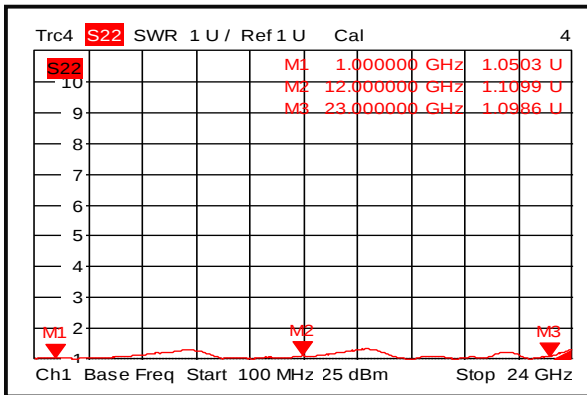


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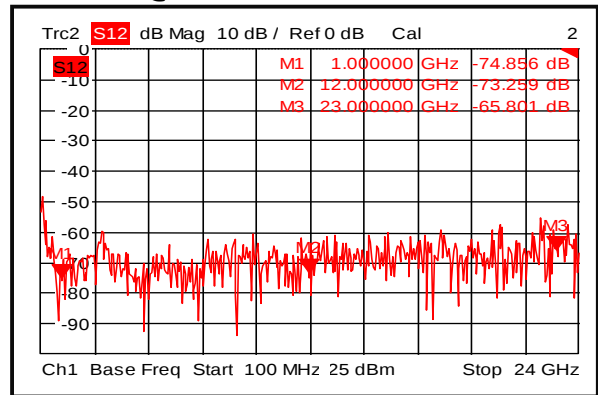
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RPNA01G23GA

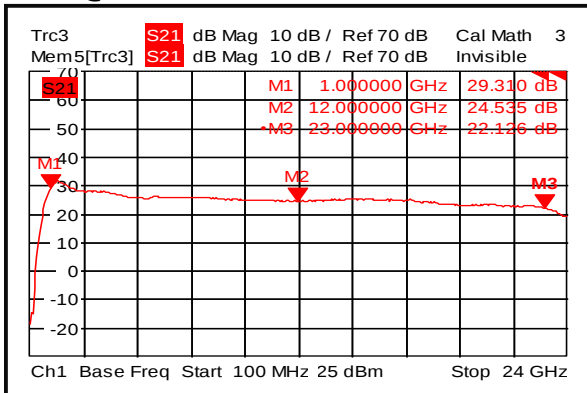
Output VSWR @-45°C



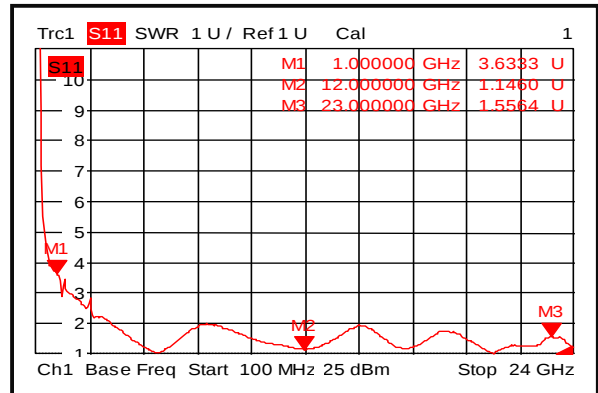
Isolation @-45°C



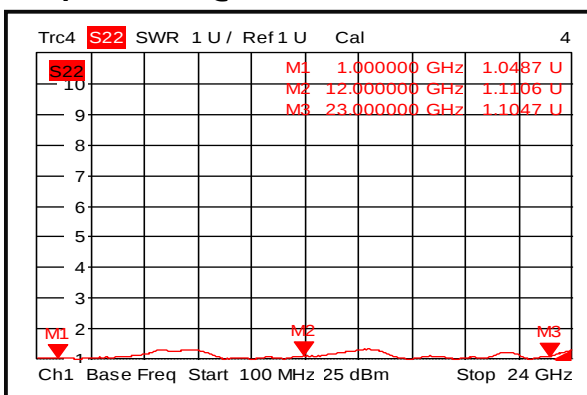
Gain @+85°C



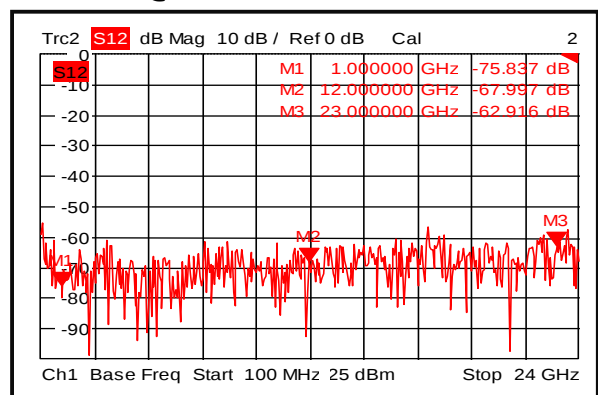
Input VSWR @+85°C



Output VSWR @+85°C



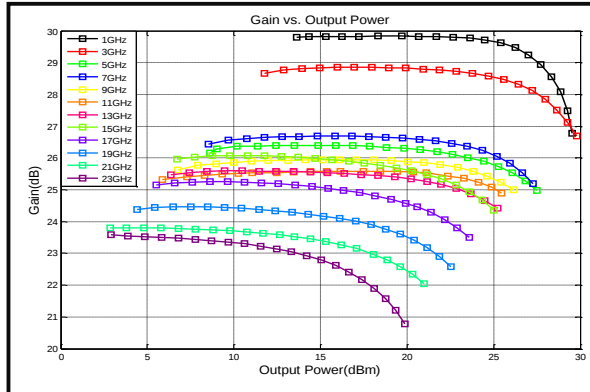
Isolation @+85°C



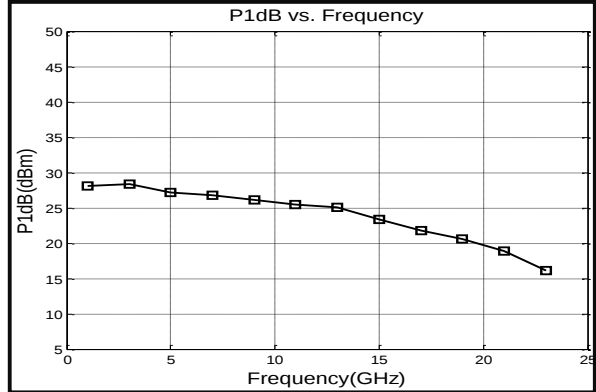
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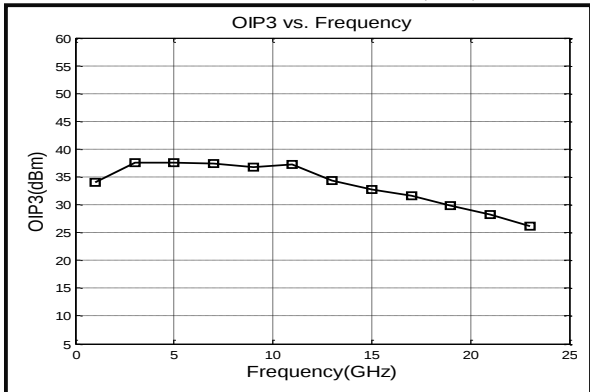
Gain vs. Output Power



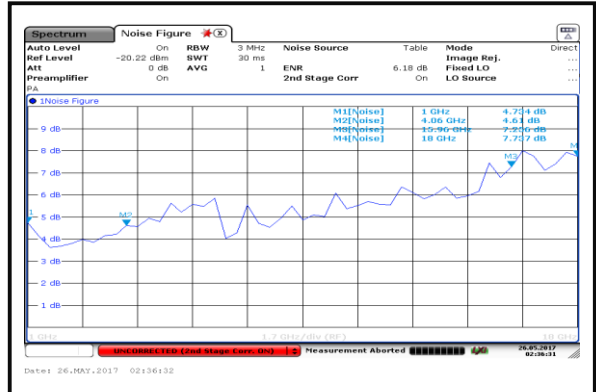
P1dB vs. Frequency



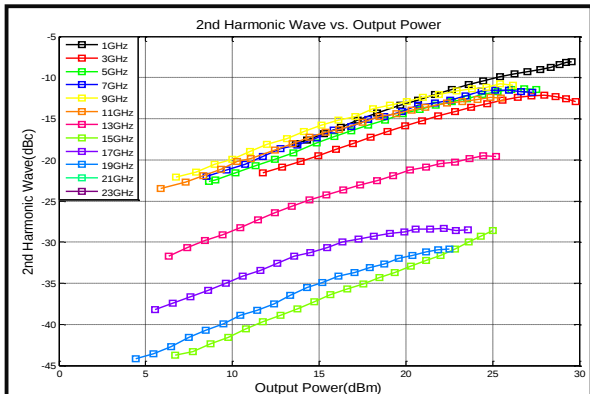
Output Third Order Intercept (IP3)



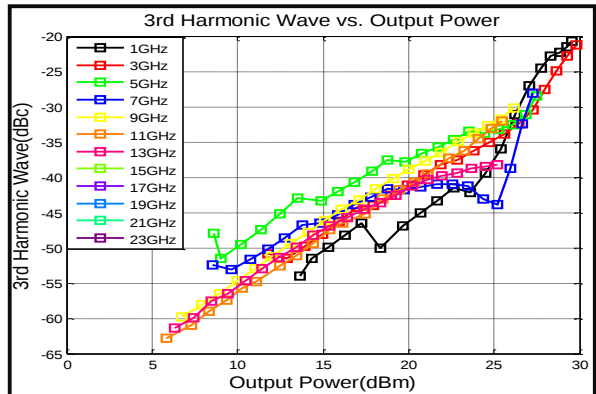
Noise Figure



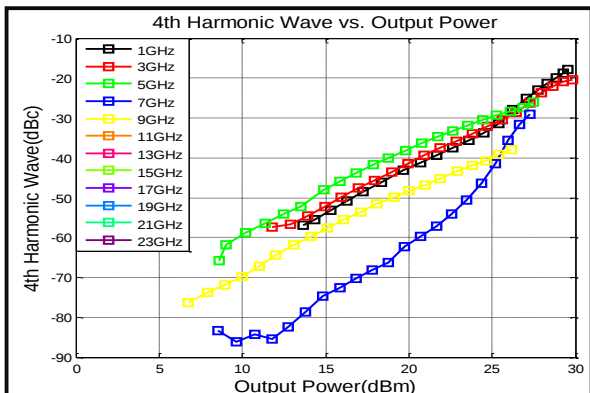
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



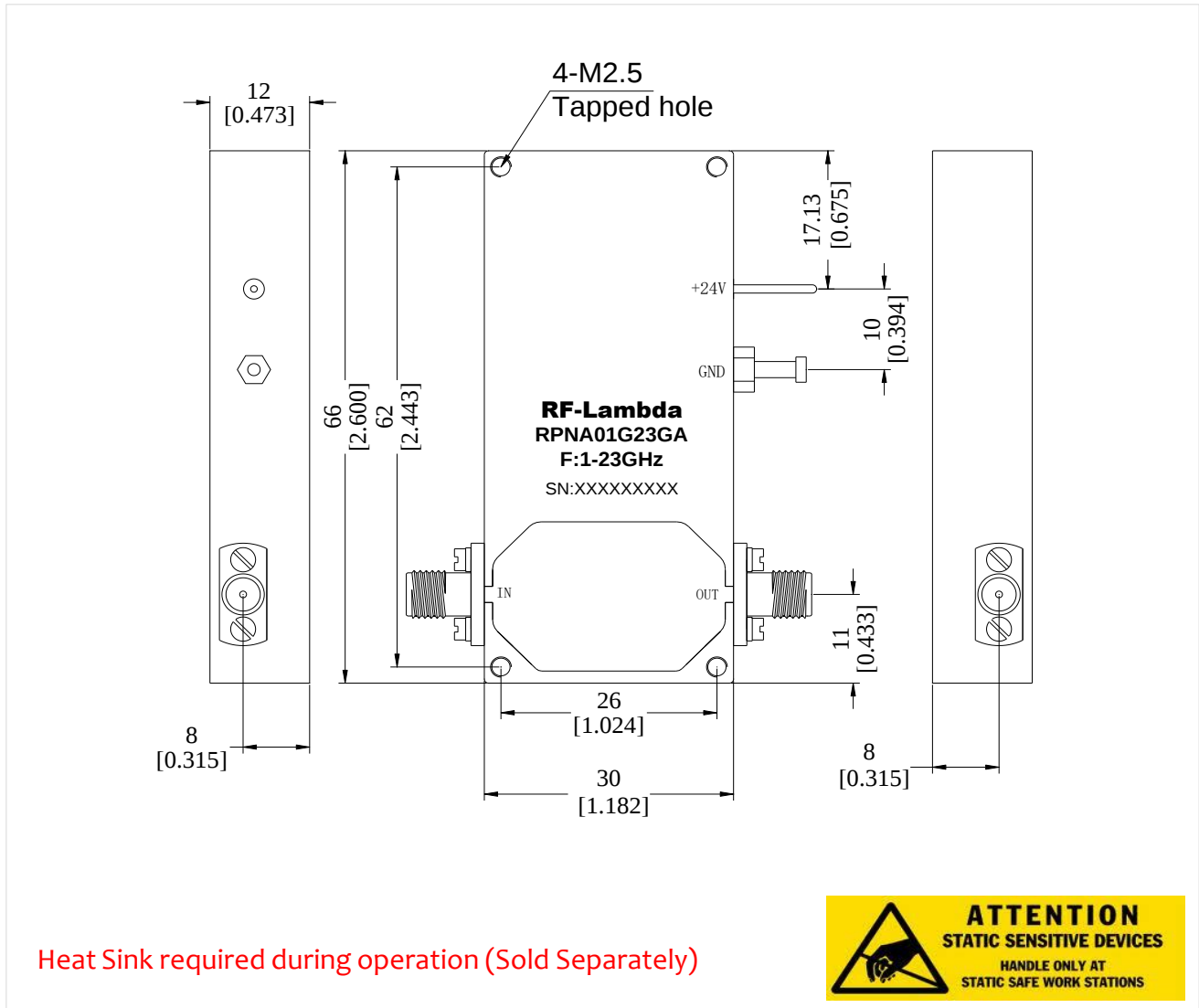
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	ECCN	Description
RPNA01G23GA	EAR99	1-23GHz Low Noise Amplifier

Important Notice

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