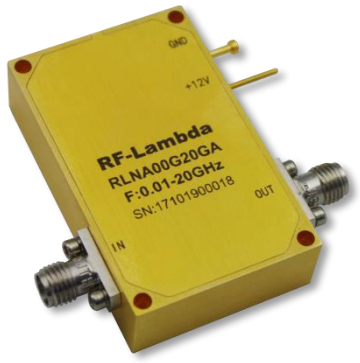
Ultra Wide Band Low Noise Amplifier
0.01GHz~22GHz



RoHS Compliant

Features

- Gain: 26dB Typical
- Noise Figure: 3.5dB Typical
- Output power + 28dBm typical
- High P1dB: + 23dBm Full Band
- Supply Voltage: + 12V

Typical Applications

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

Electrical Specifications, TA = +25 ℃, Vcc = +12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.01		6	6		20	20		22	GHz
Gain	24	28		25	27		25	27		dB
Gain Flatness		±2.0			±1.0	±1.5		±1.0	±1.5	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.2			±1.5		dB
Noise Figure		3.0			2.7	3.5		3.5	4.5	dB
Input VSWR		1.8			1.4	1.8		1.5	1.8	: 1
Output VSWR		2			1.8			1.8		: 1
Output 1dB Compression Point (P1dB)	24	25.5		23	26		21	23		dBm
Saturated Output Power (Psat)		27			28			26.5		dBm
Output Third Order Intercept (IP3)		32			34			32		dBm
Supply Current (Vcc=+12V)		470	600		470	600		470	600	mA
Isolation S12		-50			-65			-60		dB
Weight	3.88									ounces
Impedance	50									Ohms
Input / Output Connectors	SMA-Female									
Finish	Gold Plated									
Material	Copper									
Package Sealing	Epoxy Sealing (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	+6dBm

Biasing Up Procedure

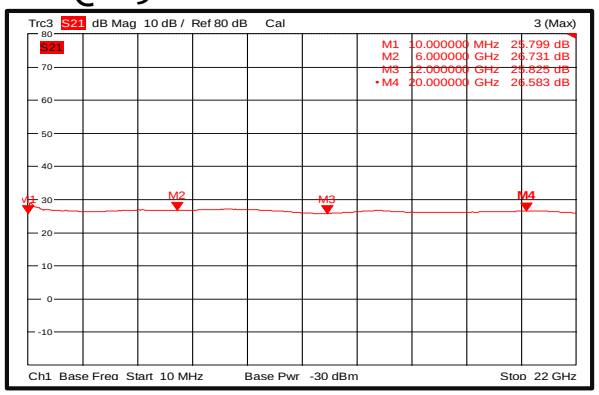
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

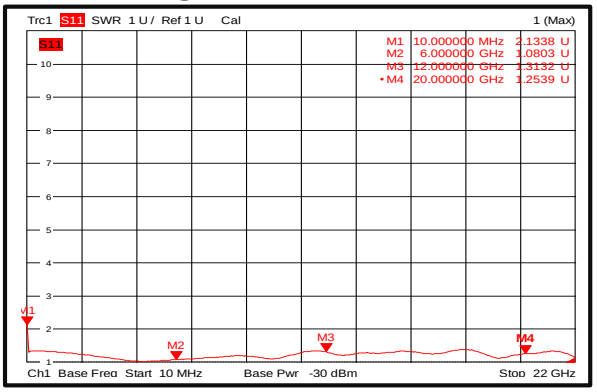
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours
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

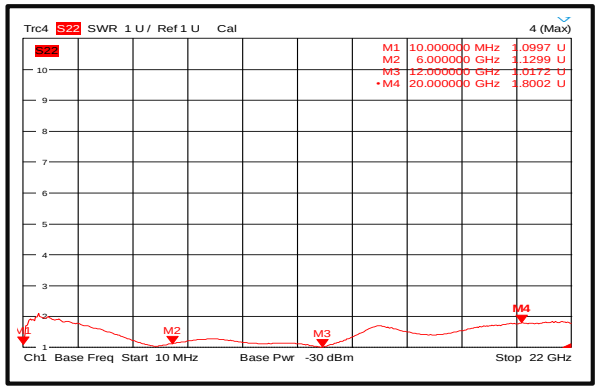
Gain@+25℃



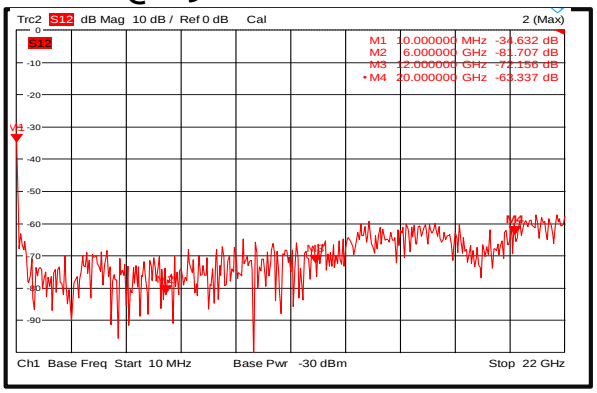
Input VSWR@+25℃



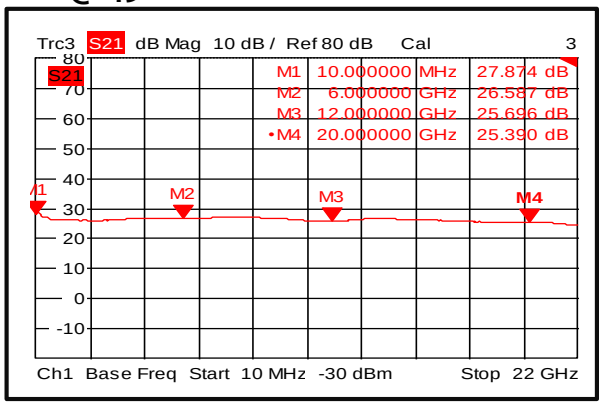
Output VSWR@+25℃



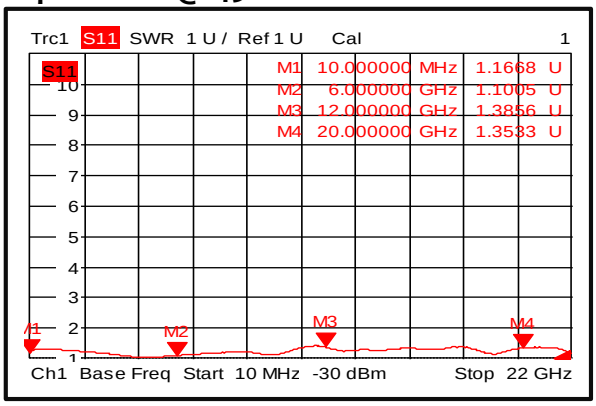
Isolation@+25℃



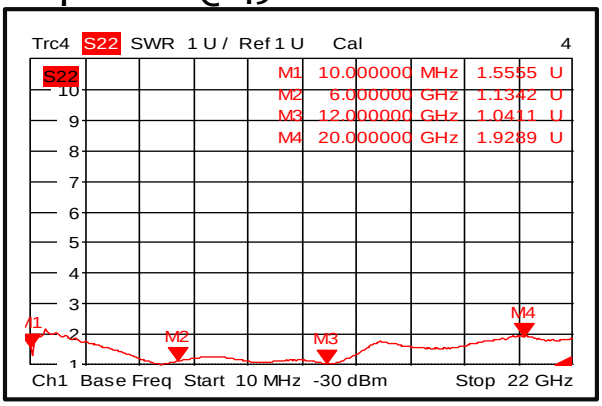
Gain@-45℃



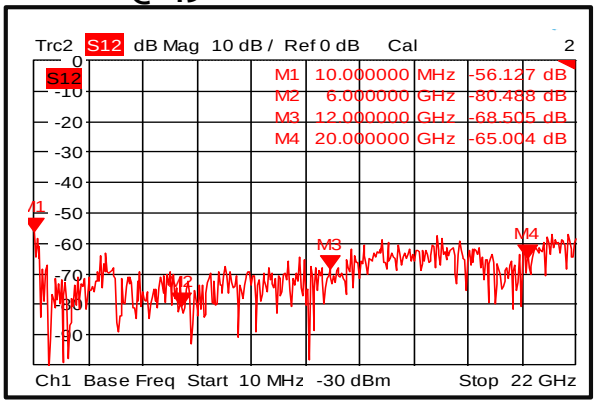
Input VSWR@-45℃



Output VSWR@-45℃



Isolation@-45℃



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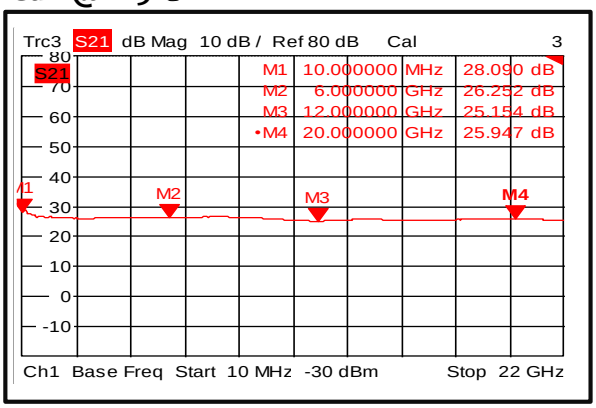
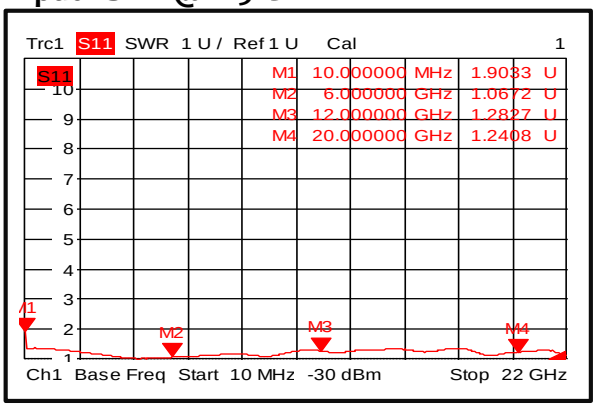
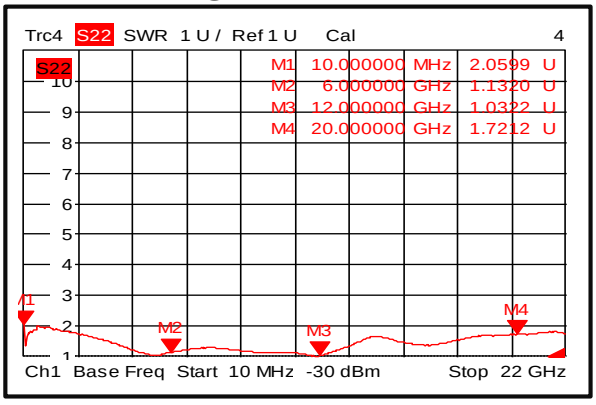
Gain@+85℃



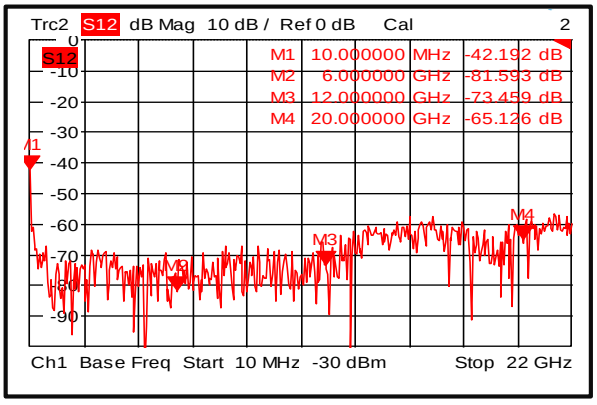
Input VSWR@+85℃



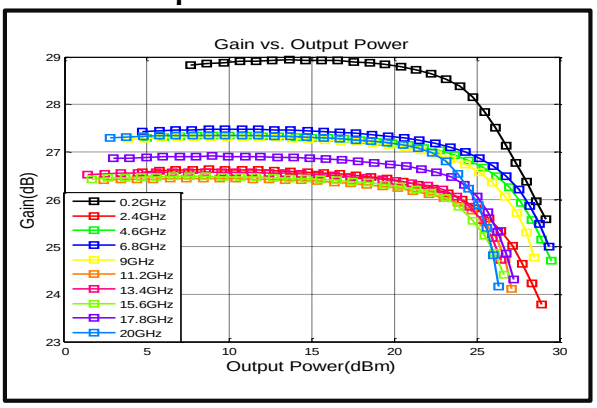
Output VSWR@+85℃



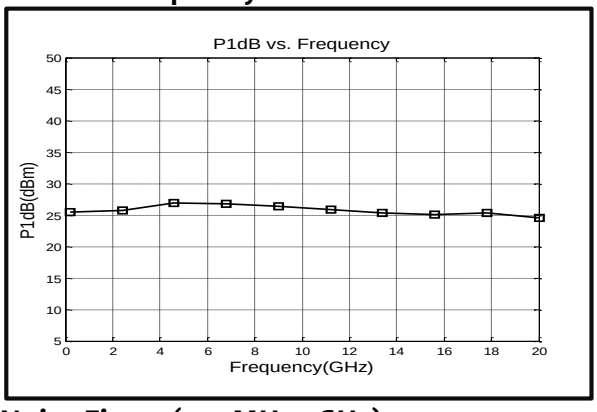
Isolation@+85℃



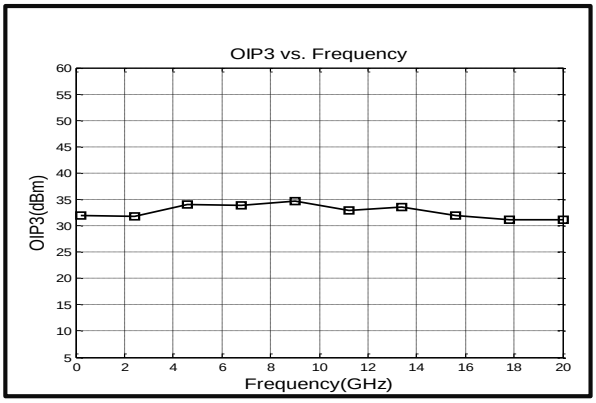
Gain vs. Output Power



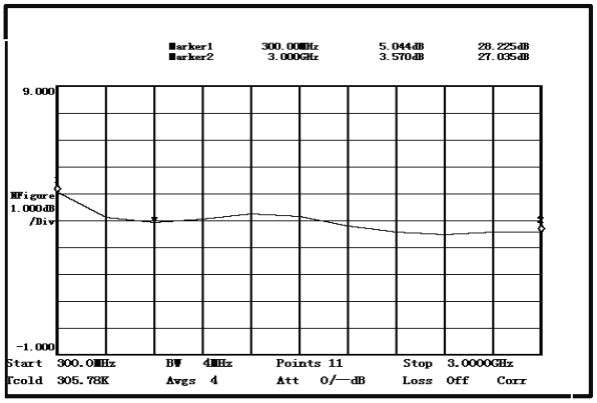
P1dB vs. Frequency



Output Third Order Intercept (IP3)



Noise Figure(300MHz-3GHz)



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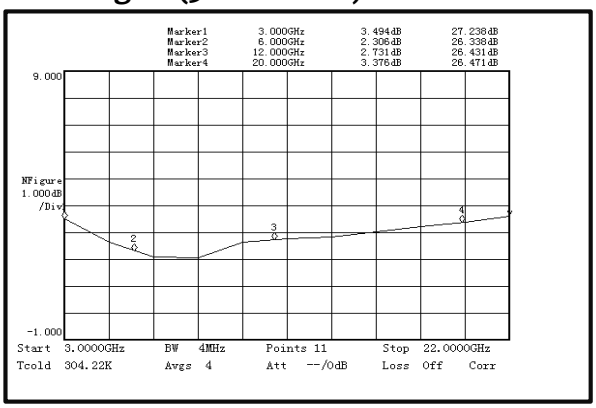
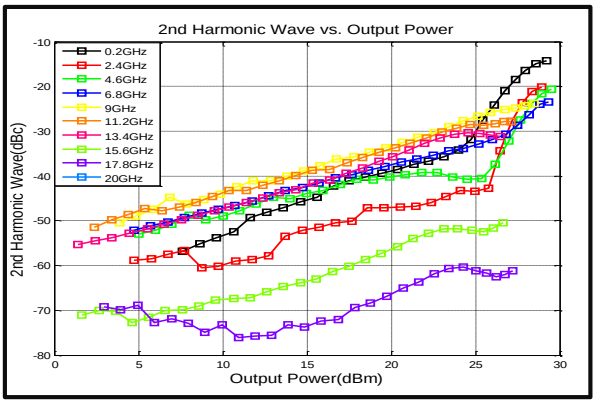
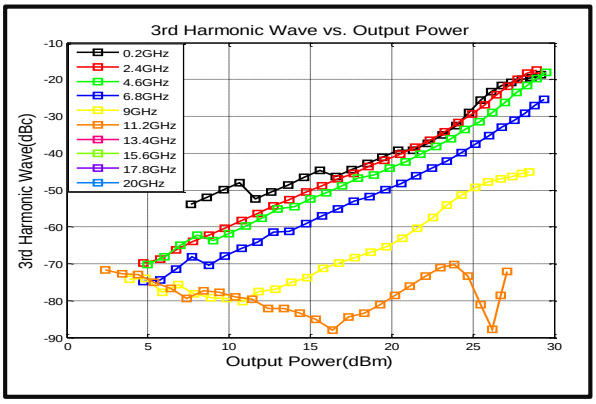
Noise Figure(3GHz-22GHz)



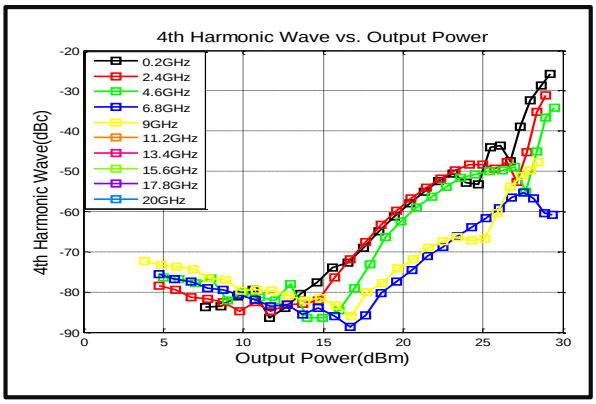
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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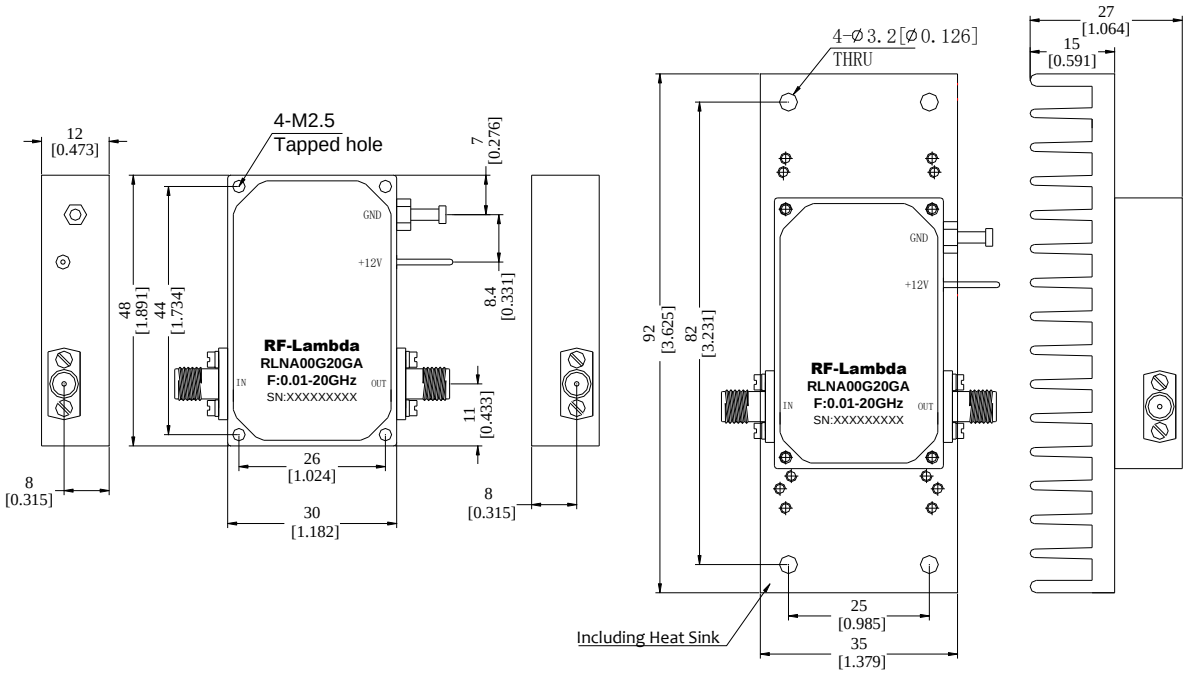
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA00G20GA	EAR99	0.01-22GHz Ultra Wide Band Low Noise Amplifier

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