Ultra Wide Band Low Noise Amplifier
0.1GHz~6GHz

RoHS Compliant

Features

- Gain: 38dB Typical
- Noise Figure: 2.8dB Typical
- Output P1dB : +21dBm Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, TA = +25°C, Vcc=+12V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		3	3		6	GHz
Gain	35	38		35	37		dB
Gain Flatness		±1.0			±1.0		dB
Gain Variation Over Temperature (-45 °C~ +85°C)		±1.0			±1.5		dB
Noise Figure		3.0	5.0		2.8	3.5	dB
Input VSWR		1.8			1.8		:1
Output VSWR		1.8			1.8		:1
Output 1dB Compression Point (P1dB)	19	21		18	20		dBm
Saturated Output Power (Psat)		23			22		dBm
Output Third Order Intercept (IP3)		29			28		dBm
Supply Current (Vcc=+12V)		180	280		180	280	mA
Isolation S12		-60			-55		dB
Weight	2.47						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Nickel plated						
Material	Aluminum						
Package Seal	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-10dBm

Biasing Up Procedure

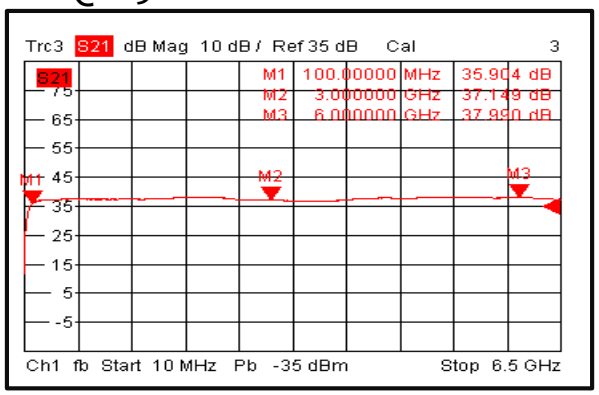
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

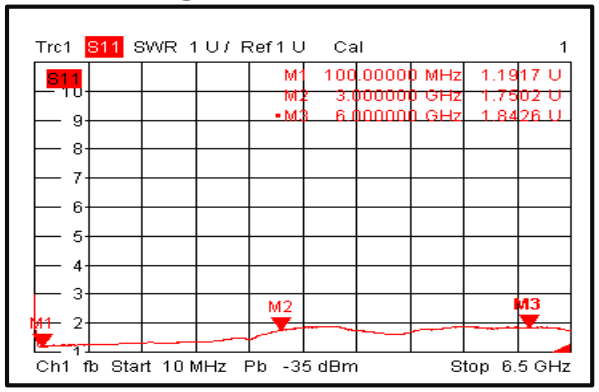
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours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

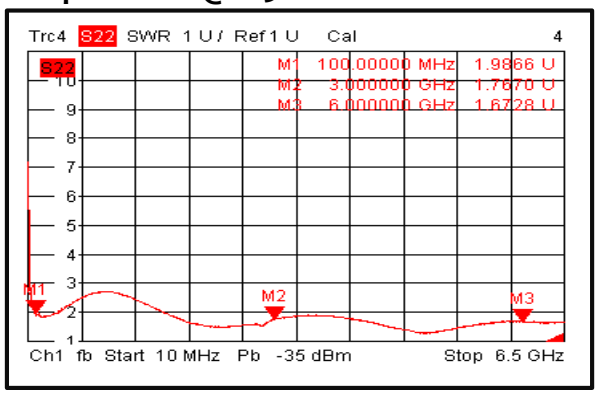
Gain@+25℃



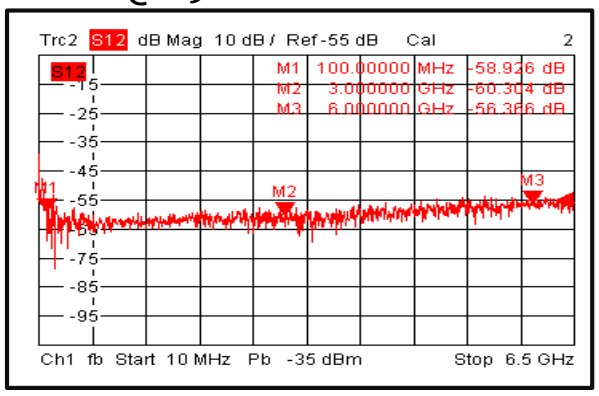
Input VSWR@+25℃



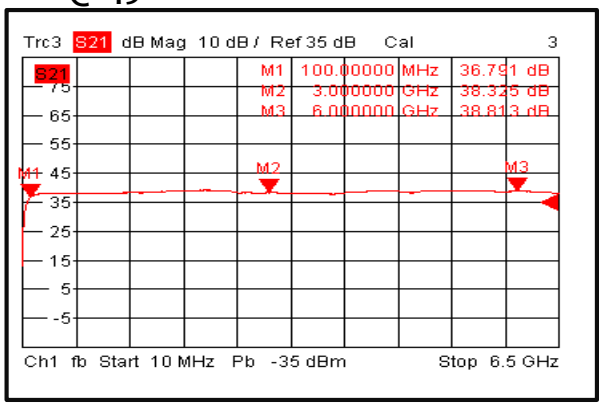
Output VSWR@+25℃



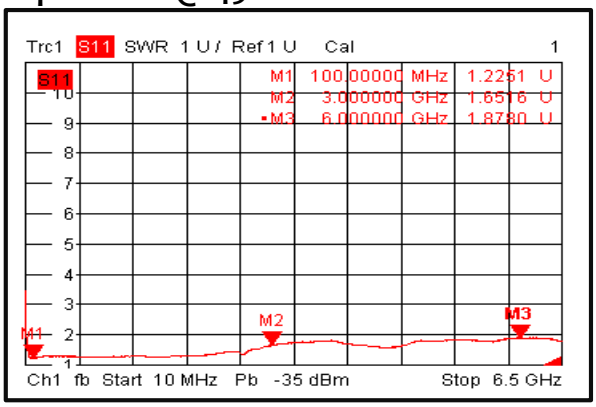
Isolation@+25℃



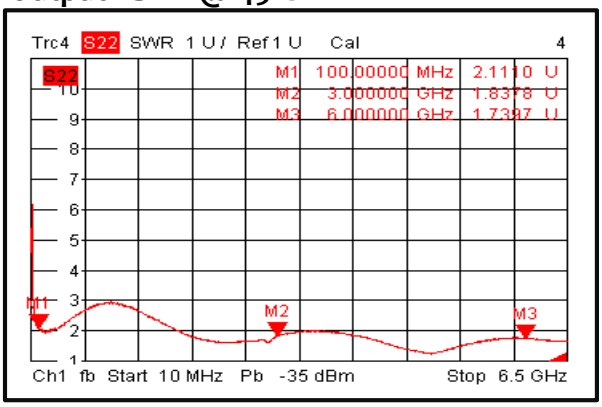
Gain@-45℃



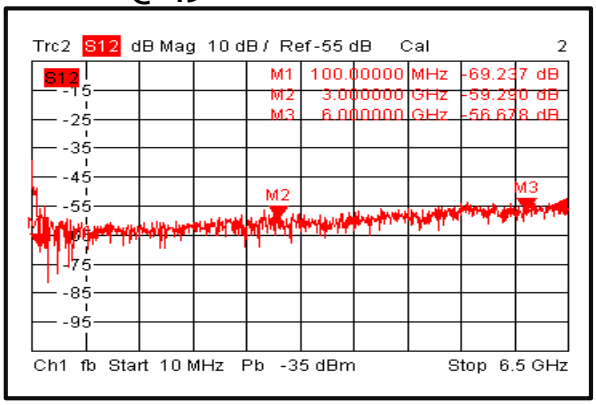
Input VSWR@-45℃



Output VSWR@-45℃



Isolation@-45℃



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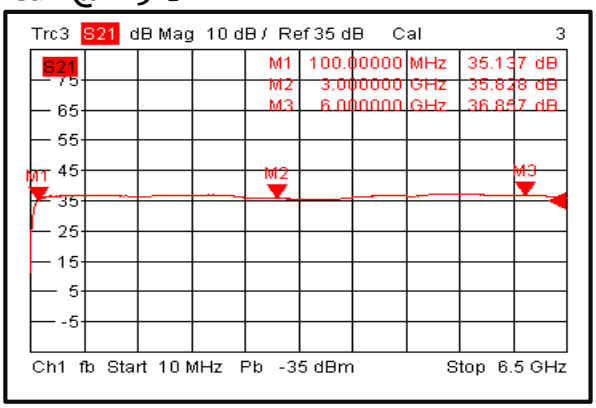
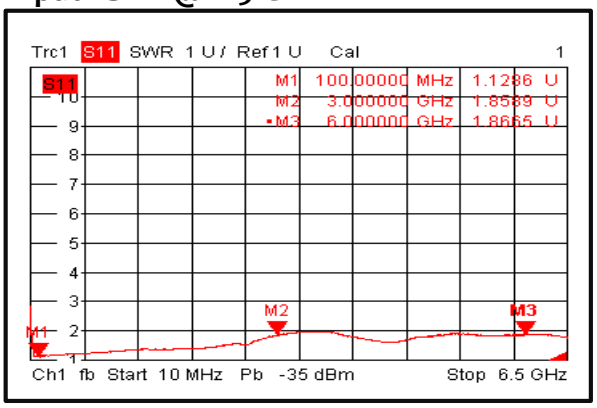
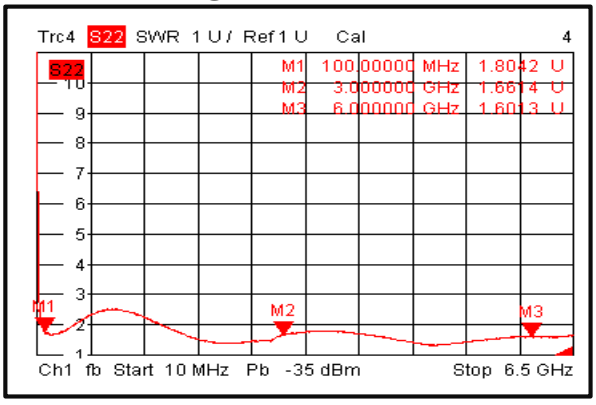
Gain@+85℃



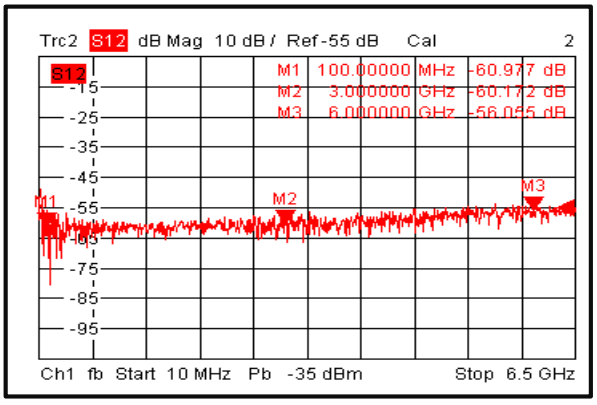
Input VSWR@+85℃



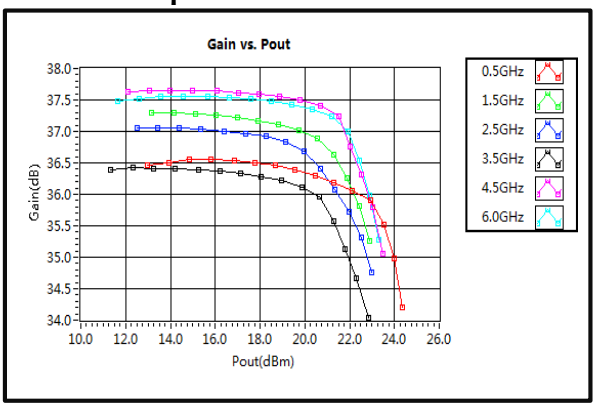
Output VSWR@+85℃



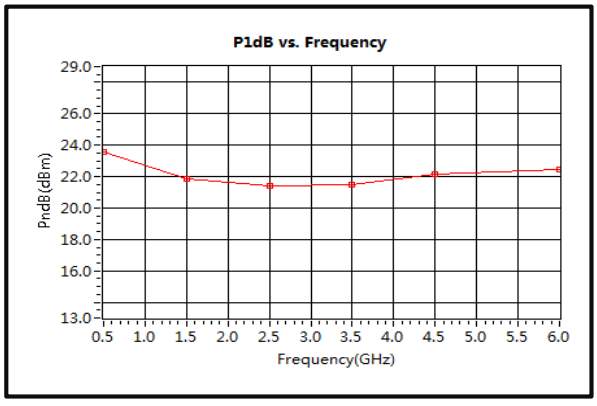
Isolation@+85℃



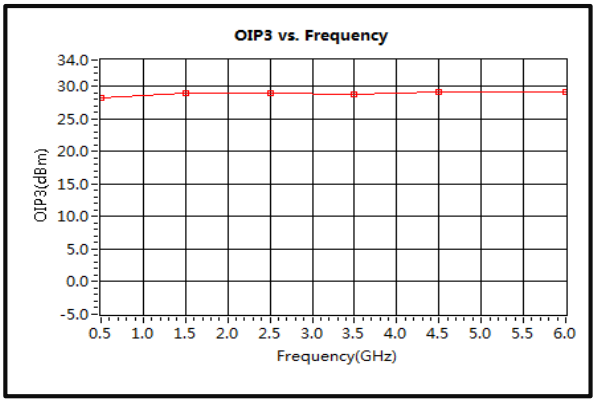
Gain vs. Output Power



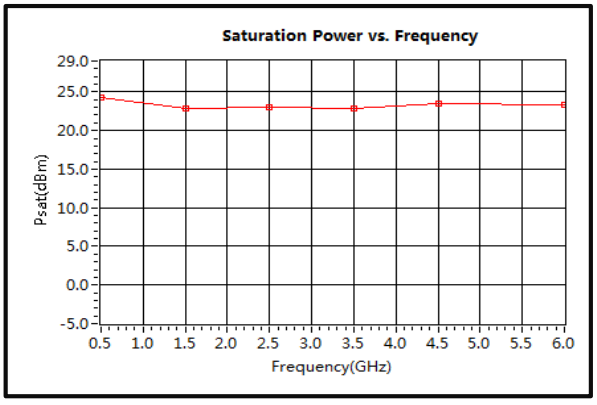
P1dB vs. Frequency



Output Third Order Intercept (IP3)

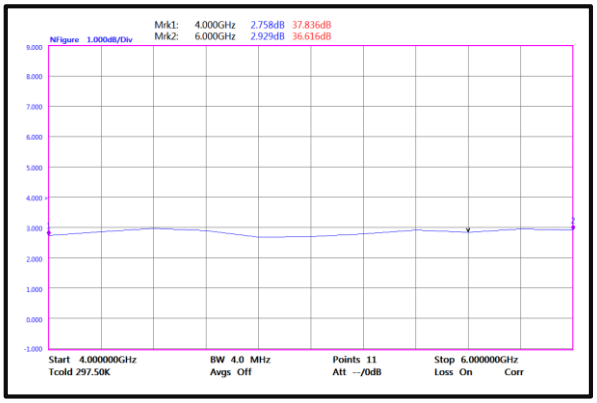


Saturation Power vs. Frequency

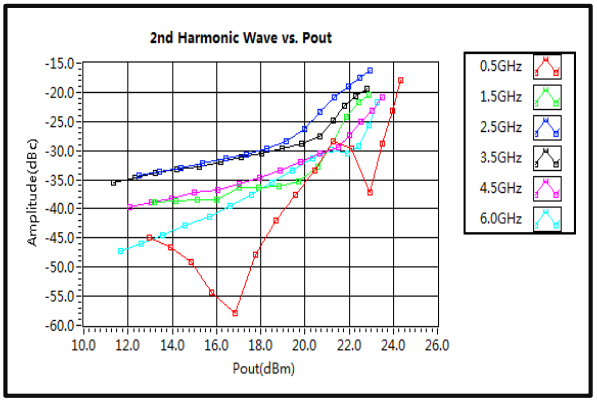


Noise Figure (200MHz-4GHz)

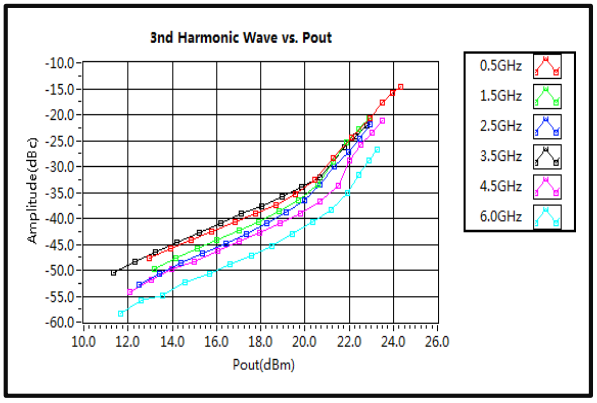
Noise Figure (4GHz-6GHz)



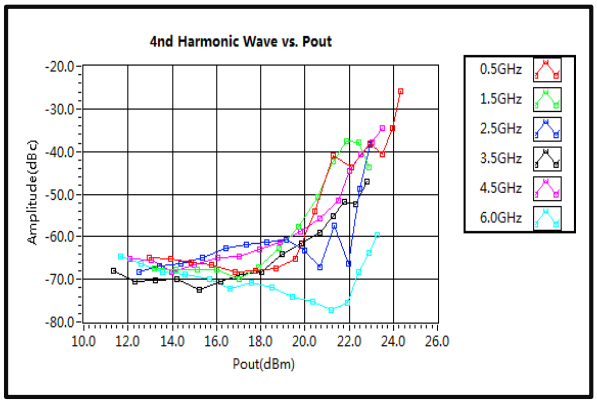
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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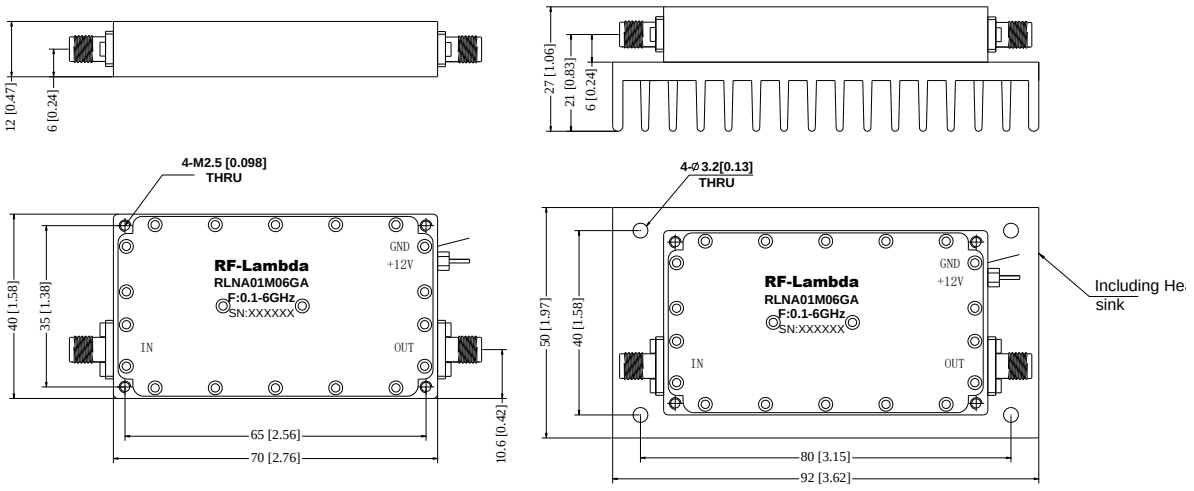
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA01M06GA	EAR99	0.1-6GHz Low Noise Amplifier

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