Wide Band Low Noise Amplifier
12GHz~18GHz

RoHS Compliant

Features

- Gain: 31dB typical
- Noise Figure: 1.6dB typical
- High P1dB: +19.5dBm typical
- Supply Voltage: +12V @ 200mA
- 50 Ohm Matched Input / Output
- Size: 0.79" x 0.51" x0.39"

Typical Applications

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

Electrical Specifications, TA = +25℃, Vcc = +12V, 50 Ohm System

Parameter	Min	Typ	Max	Units
Frequency Range	12		18	GHz
Gain	29	31		dB
Gain Flatness		±0.6	±1.0	dB
Gain Variation Over Temperature (-45 ~ +85℃)		±0.8	±1.0	dB
Noise Figure		1.6	2.3	dB
Input VSWR		1.7	2.0	: 1
Output VSWR		1.5	1.8	: 1
Output 1dB Compression Point (P1dB)	17.5	19.5		dBm
Saturated Output Power (Psat)		20.5		dBm
Output Third Order Intercept (IP3)		25		dBm
Supply Current (Vcc=+12V)		200	230	mA
Isolation S12		-60		dB
Weight	0.71			ounces
Impedance	50			Ohms
Input / Output Connectors	SMA-Female			
Finishing	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 (Option with extra charge)			

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Absolute Maximum Ratings

Operating Voltage	+12.5V
RF Input Power	-10dBm

Biasing Up Procedure

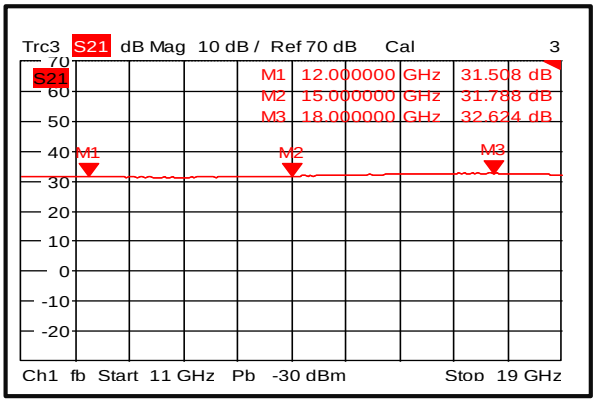
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications

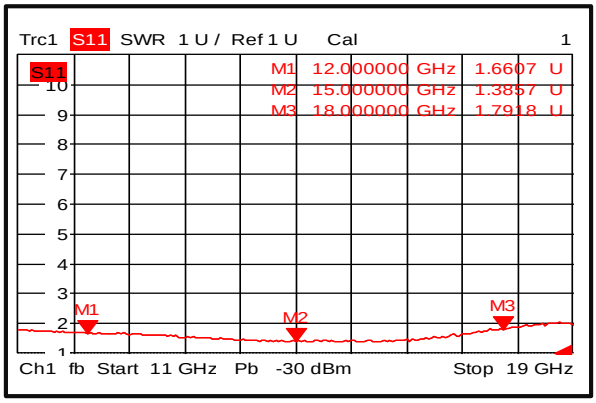
Operational Temperature (°C)	-45 to+85
Storage Temperature (°C)	-50 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msec half sine wave,3 axis both directions

Typical Performance Plots

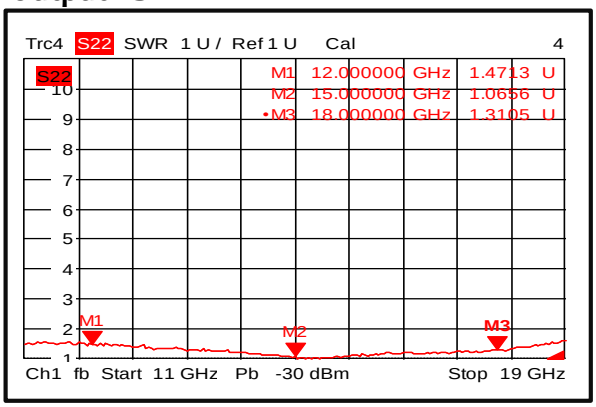
Gain



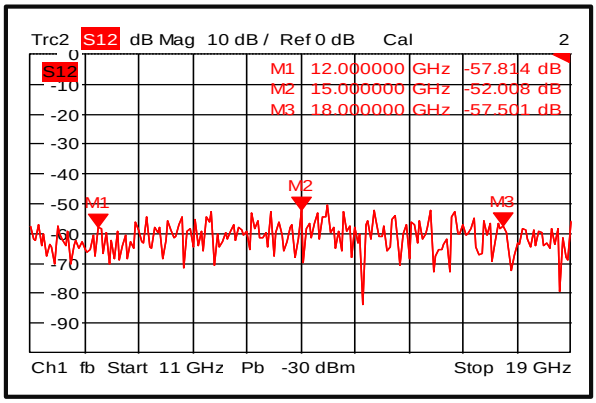
Input VSWR



Output VSWR



Isolation



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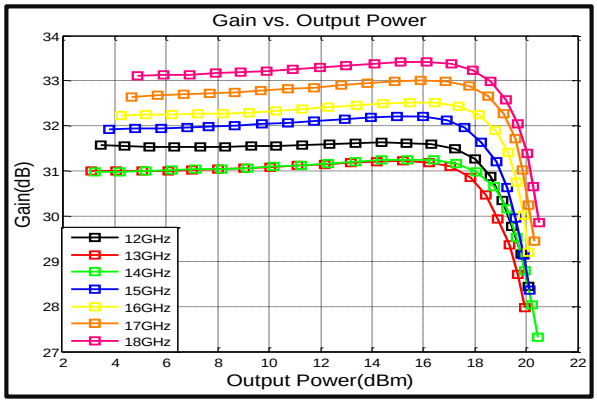
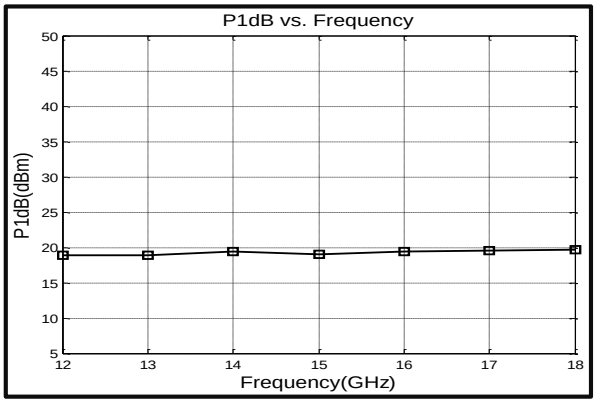
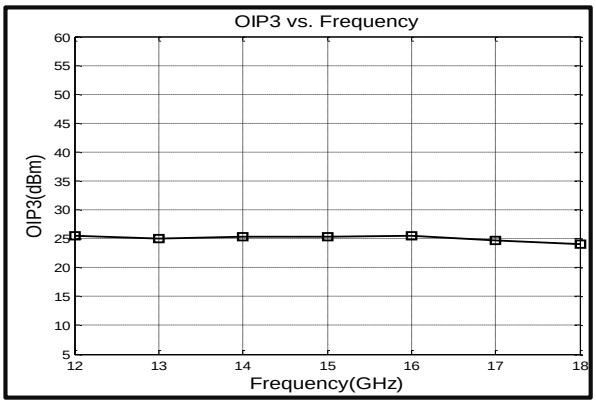
Gain vs. output power



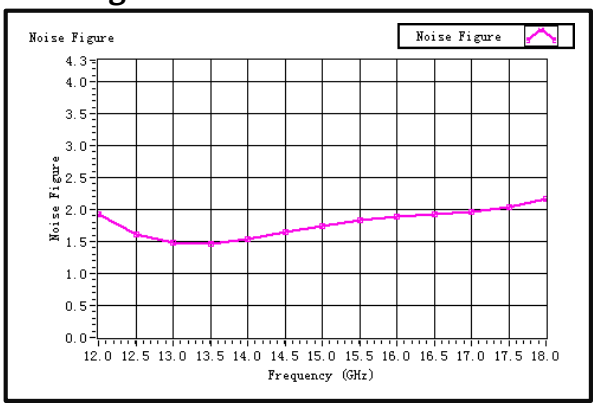
P1dB vs. Frequency



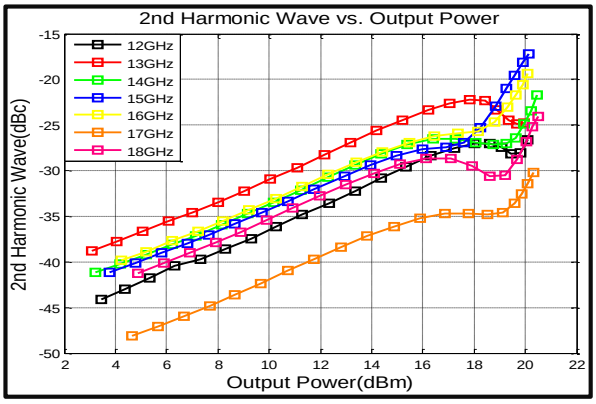
Output Third Order Intercept (IP3)



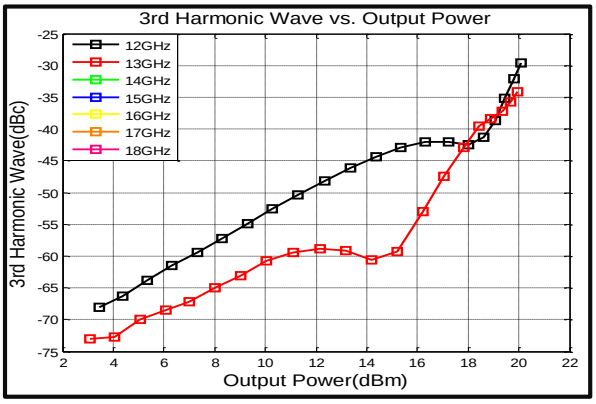
Noise Figure



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



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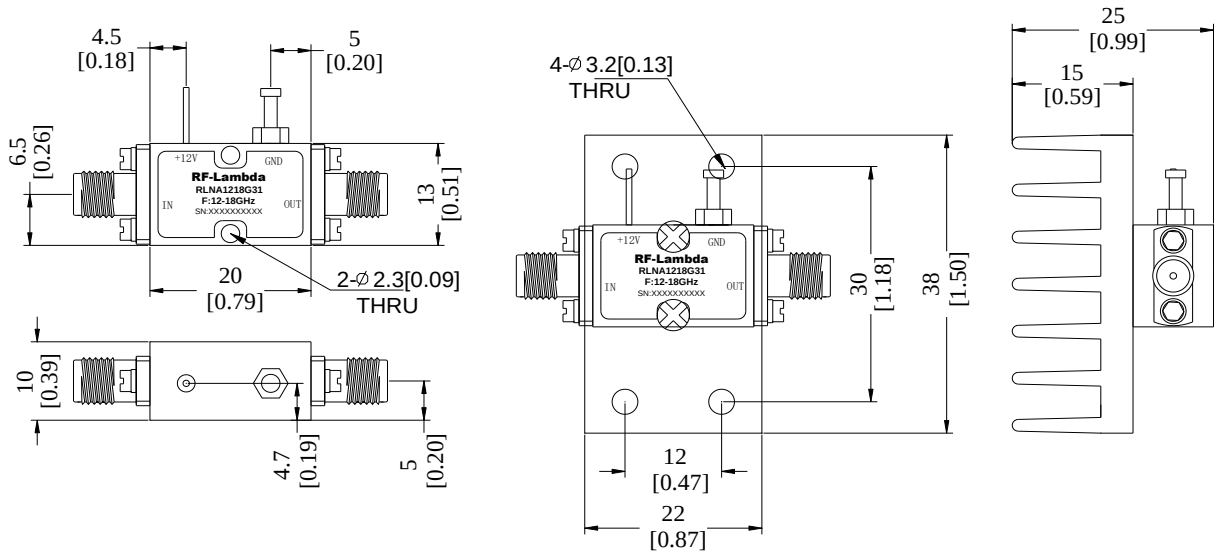
Outline Drawing:

All Dimensions in mm [inches]
Heat Sink required during operation（Sold Seperately）



Ordering Information

Part No.	ECCN	Description
RLNA1218G31	EAR99	12-18GHz Low Noise Amplifier

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