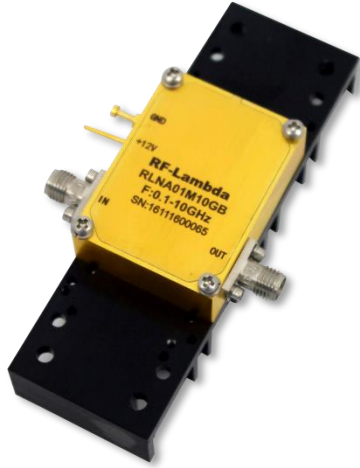




## Ultra Wide Band Low Noise Amplifier 0.1GHz~10GHz



### Features

- Gain: 33dB Typical
- Functional Bandwidth : 0.1GHz to 18 GHz
- Noise Figure: 2.2dB Typical
- P1dB Output Power: +26dBm Typical
- Supply Voltage: +12V @ 320 mA
- 50 Ohm Matched Input / Output
- Size: 1.58x 1.18" x 0.39"

### Typical Applications

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

Electrical Specifications,  $T_A = +25^\circ \text{C}$ ,  $V_{CC} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		10	10		18	GHz
Gain	28	33		25	29		dB
Gain Flatness		±2.0			±2.0		dB
Gain Variation Over Temperature(-45 ~ +85)		±1.0			±1.5		dB
Noise Figure		2.2	4.5		2.8	4.0	dB
Input VSWR		1.8			1.8		: 1
Output VSWR		1.8			1.8		: 1
Output 1dB Compression Point (P1dB)	23.5	26		20	22		dBm
Saturated Output Power (Psat)		28			24		dBm
Output Third Order Intercept (IP3)		35			32		dBm
Isolation S12		-60			-55		dB
Supply Current (Vcc=+12V)		320	400		320	400	mA
Weight	1.41						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)						

Ultra Wide Band Low Noise Amplifier 0.1GHz~10GHz



**Absolute Maximum Ratings**

Operating Voltage	+12V±10%
RF Input Power	+3dBm

**Biasing Up Procedure**

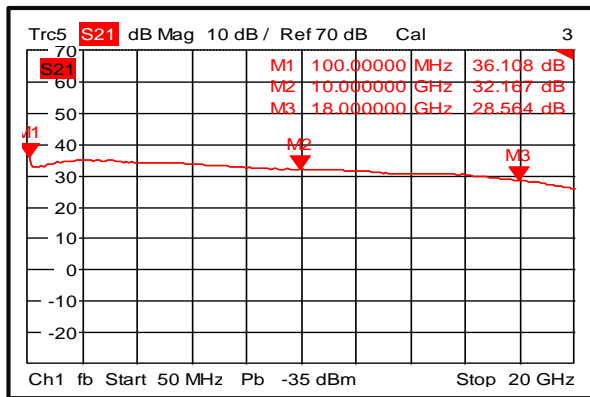
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

**Environmental Specifications**

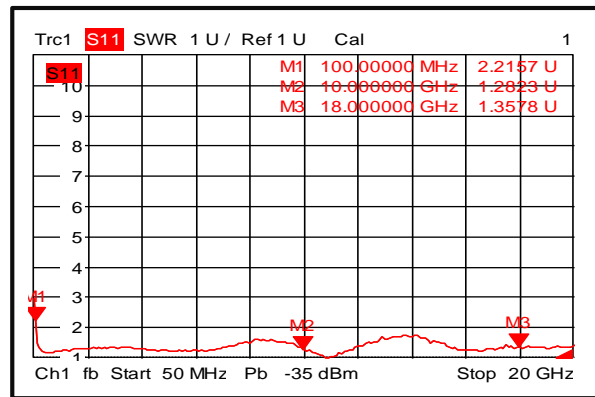
Operational Temperature (°C)	-45 to +85
Storage Temperature (°C)	-50 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c,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

**Typical Performance Plots**

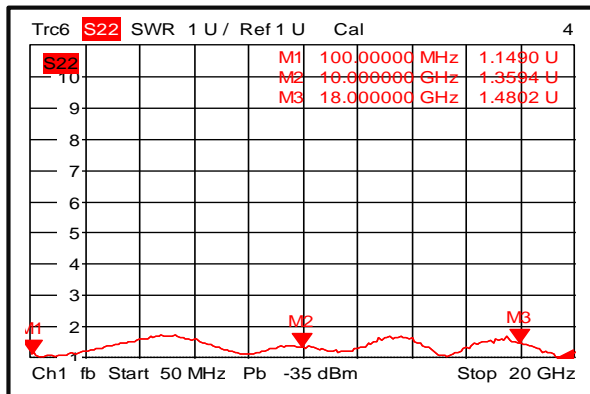
**Gain**



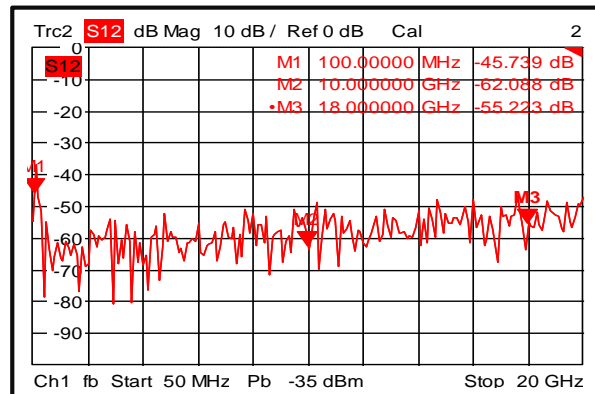
**Input VSWR**



**Output VSWR**



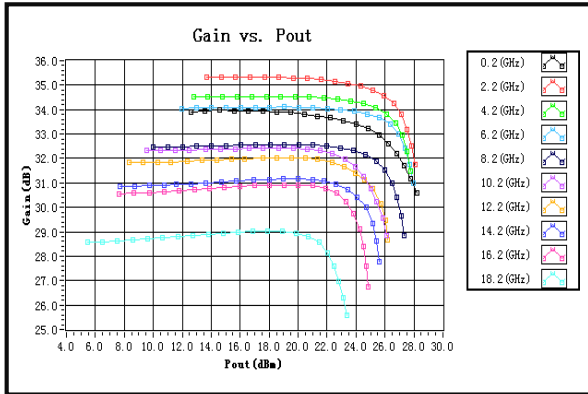
**Isolation**



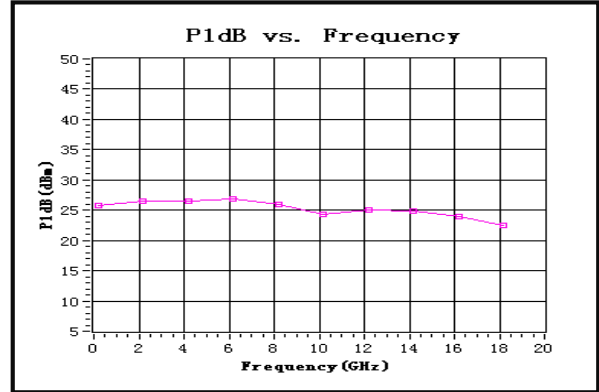
**Ultra Wide Band Low Noise Amplifier 0.1GHz~10GHz**



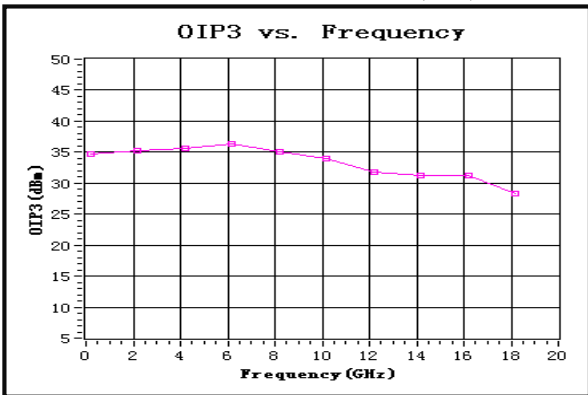
**Gain vs. Output Power**



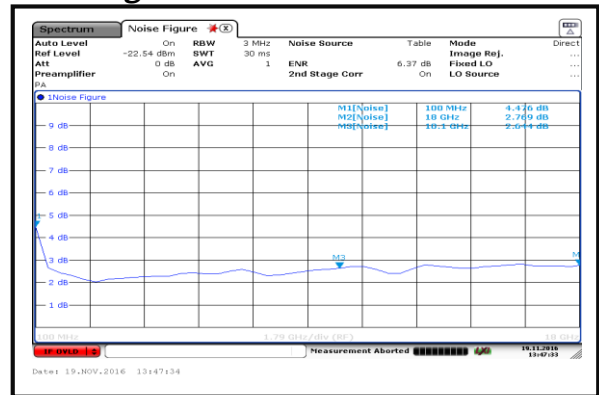
**P1dB vs. Frequency**



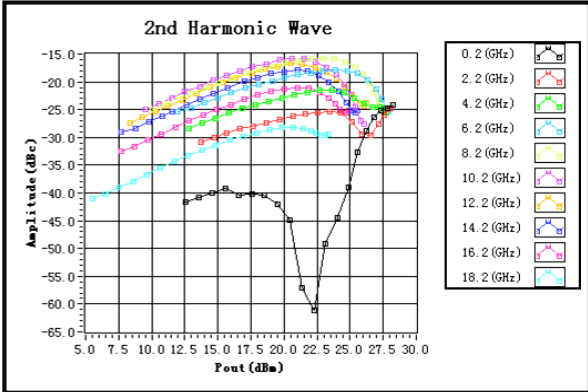
**Output Third Order Intercept (IP3)**



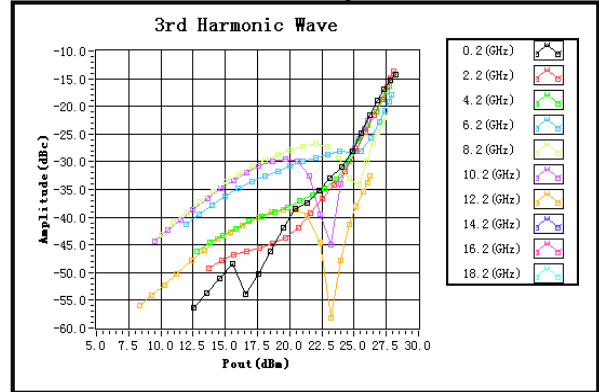
**Noise Figure**



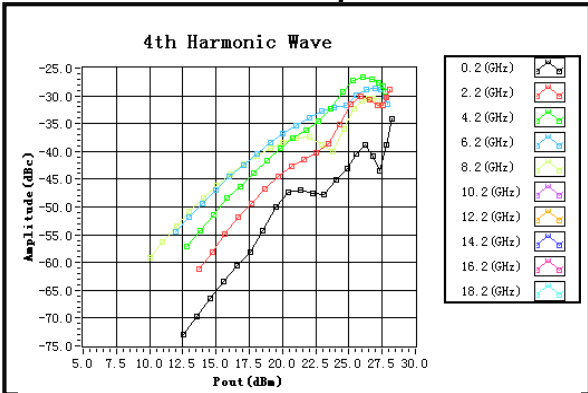
**2nd Harmonic Wave Output Power**



**3rd Harmonic Wave Output Power**



**4th Harmonic Wave Output Power**



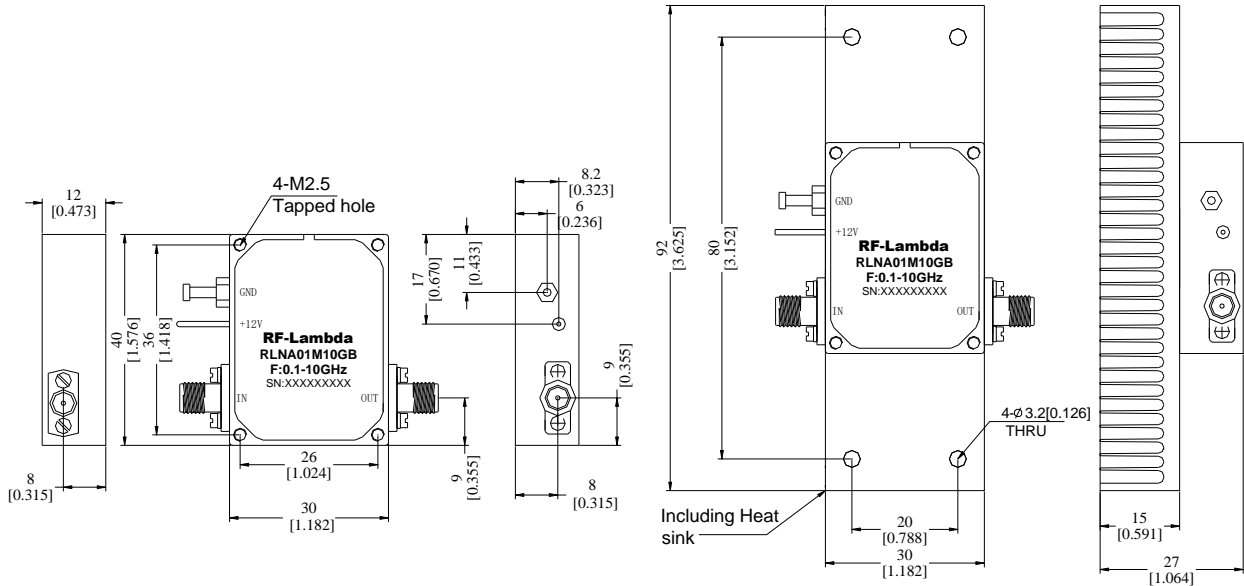
**Ultra Wide Band Low Noise Amplifier 0.1GHz~10GHz**



**Outline Drawing:**

All Dimensions in mm [inches]

Heat Sink required during operation (Sold Separately)



**Ordering Information**

Part No.	ECCN	Description
RLNA01M10GB	EAR99	0.1-10GHz Low Noise Amplifier

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