Ultra Wide Band Low Phase Noise Amplifier 1GHz~2GHz

RoHS Compliant

Feature

- Gain: 35 dB Typical
- Noise Figure: 5dB Typical
- P1dB Output Power: +14dB m Typical
- Supply Voltage: +12V @ 190 mA
- 50 Ohm Matched Input / Output
- Size:1.182x 1.576" x0.473"

Typical Applications

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

Electrical Specifications, TA = +25 ° C, With Vcc = +12V, 50 Ohm System

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1		2	2		18	18		20	GHz
Gain	28	35			33	36		30	34	dB
Gain Flatness		±3.0			±2.0	±2.5		±1.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±1.5			±2.0			±2.0		dB
Noise Figure		10			5			9		dB
Input VSWR		2			1.5	2		1.5	2	
Output VSWR		2			1.5	2		1.5	2	
Output Power for 1 dB Compression (P1dB)		14		10	15			7		dBm
Saturated Output Power (Psat)		15			17			8		dBm
Output Third Order Intercept (IP3)		26			28			16		dBm
Phase Noise @ 1 kHz		-150			-150			-150		dBc/Hz
Isolation S12	75	80		70	75		70	75		dB
Supply Current (Idd) (Vcc=+12V)		190	220		190	220		190	220	mA
Input Max Power(no damage)	-11									dBm
Weight	3.55									ounces
Impedance	50									Ohms
Input /Output Connector	SMA-Female									
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness									
	Option: Gold 80 micron; Nickel 180 micron thickness									
Material	Aluminum/copper									
Package Sealing	Epoxy Sealing (Standard)									
	Hermetically Seal (Option with extra charge)									

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Absolute Maximum Ratings

Operating Voltage	+13V
RF Input Power	-11dB m
Operating Temperature(℃)	-45 to +85
Storage Temperature(℃)	-50 to +125

Biasing Up Procedure

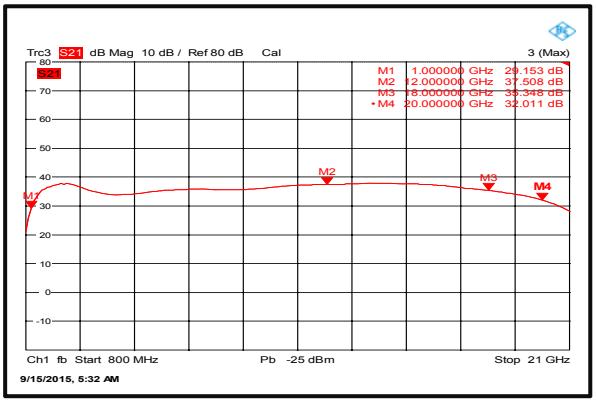
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environment specifications

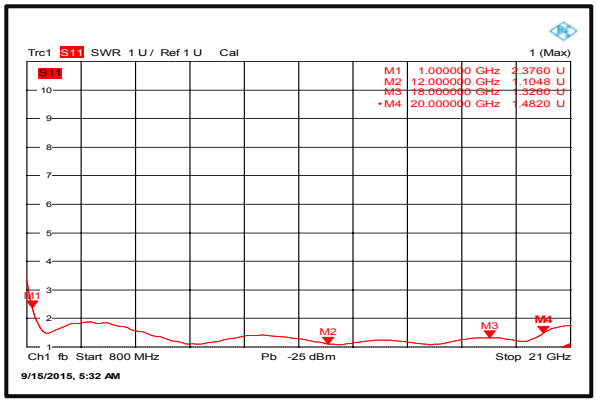
Operational Temperature (℃)	-45 to+85
Storage Temperature (℃)	-50 to +125
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH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

Typical performance plots

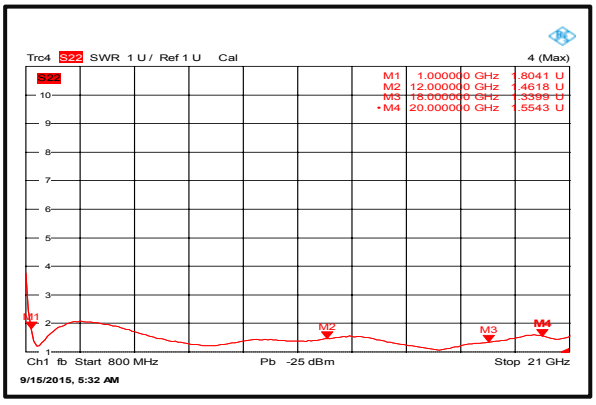
Gain



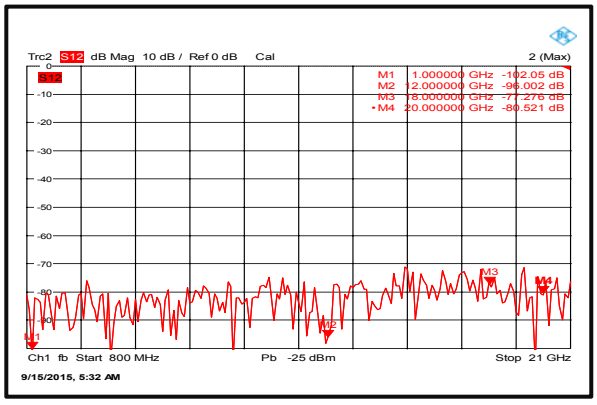
Input VSWR



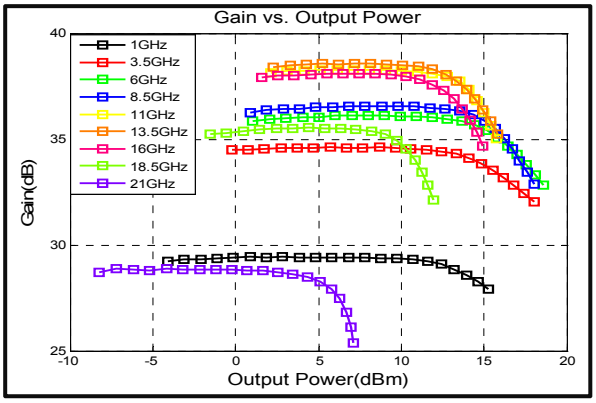
Output VSWR



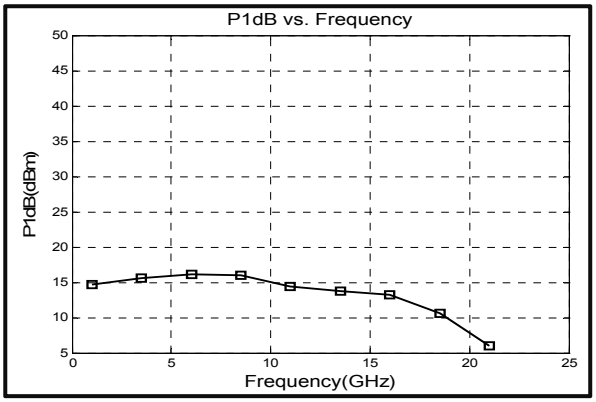
Isolation



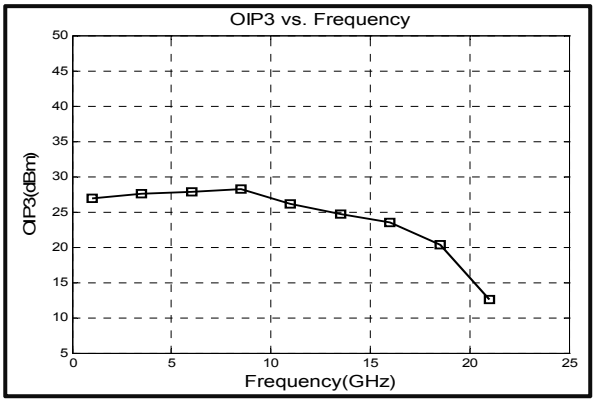
Cain vs. output power



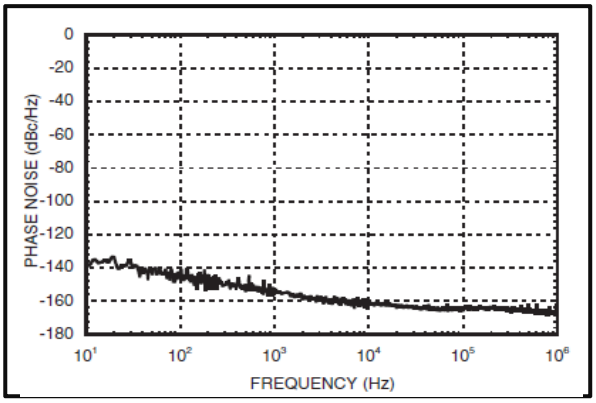
P1dB vs. Frequency



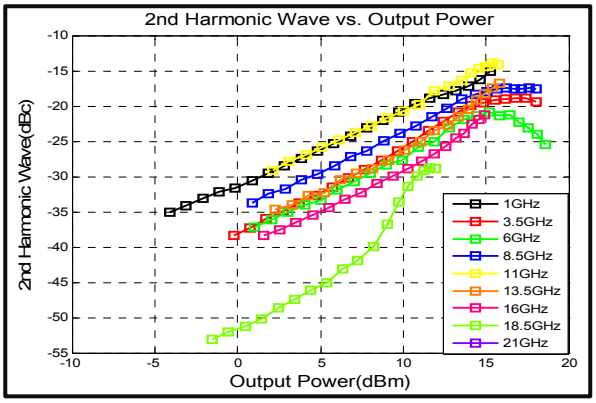
Output Third Order Intercept (IP3)



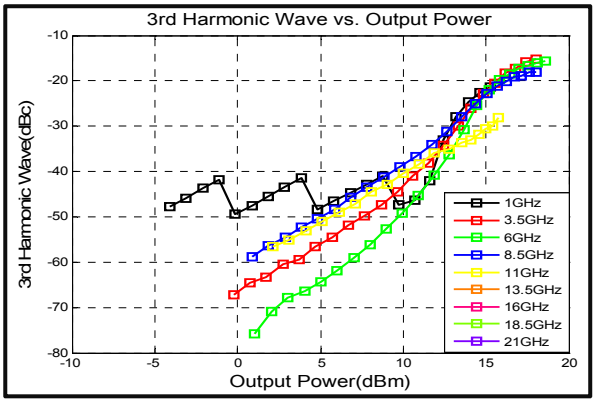
Phase Noise @ 12GHz



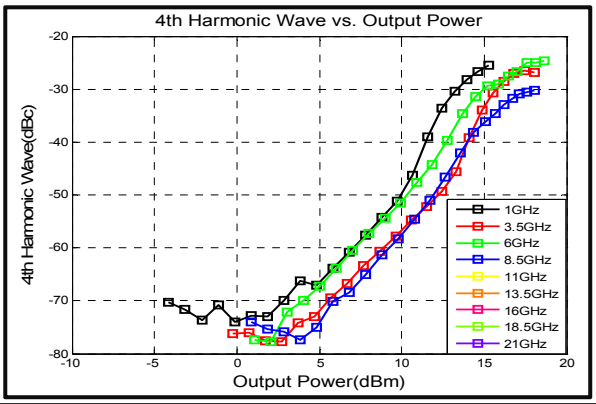
2nd Harmonic Wave output Power



3th Harmonic Wave output Power



4nd Harmonic Wave output Power



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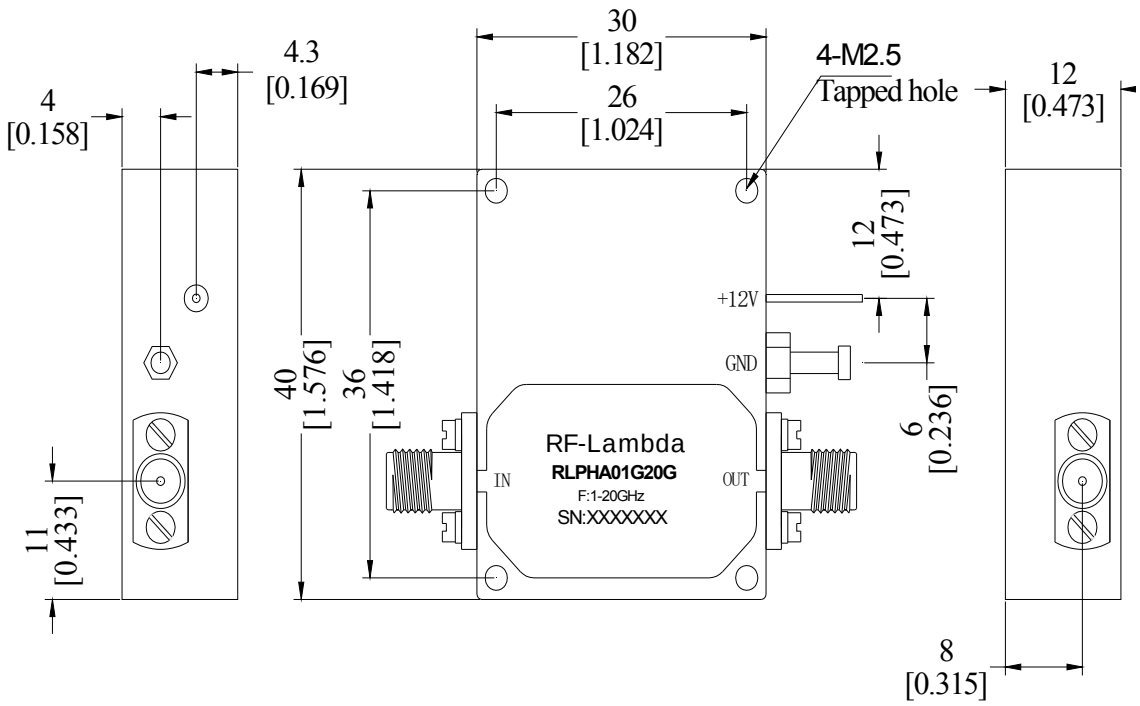
Outline Drawing:

All Dimensions in mm（inches）
Heat Sink required during operation



Ordering Information

Part No	ECCN	Description
RLPHA01G20G	EAR99	1-20GHz LPHA Amplifier

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