Wide Band Low Noise Amplifier
12GHz~18GHz

RoHS Compliant

Features

- Functional Bandwidth : 6GHz to 18GHz
- Gain: 25dB typical
- Noise Figure: 2.0dB typical
- High P1dB: +19.5dBm typical
- Supply Voltage: +12V

Typical Applications

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

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

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	6		12	12		18	GHz
Gain	25	27		24	25		dB
Gain Flatness		±1.5			±1.0		dB
Gain Variation Over Temperature (-45 ~ +85)		±0.8	±1.0		±0.8	±1.0	dB
Noise Figure		2.0	2.5		2.0	2.5	dB
Input VSWR		1.6	2.0		1.7	2.0	: 1
Output VSWR		1.5	1.8		1.5	2.0	: 1
Output 1dB Compression Point (P1dB)	17	19		17.5	19.5		dBm
Saturated Output Power (Psat)		20			20		dBm
Output Third Order Intercept (IP3)		27			25		dBm
Supply Current (Vcc=+12V)		180	230		180	230	mA
Isolation S12		-55			-55		dB
Weight	1.41						ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	copper						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-10dBm

Biasing Up Procedure

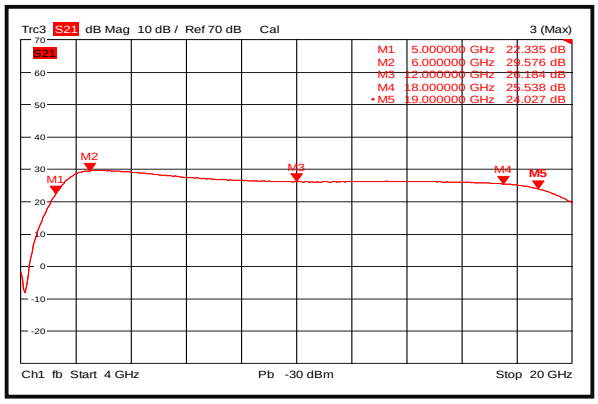
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

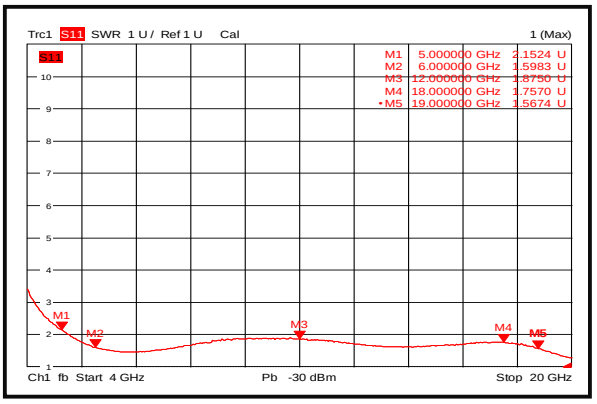
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours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

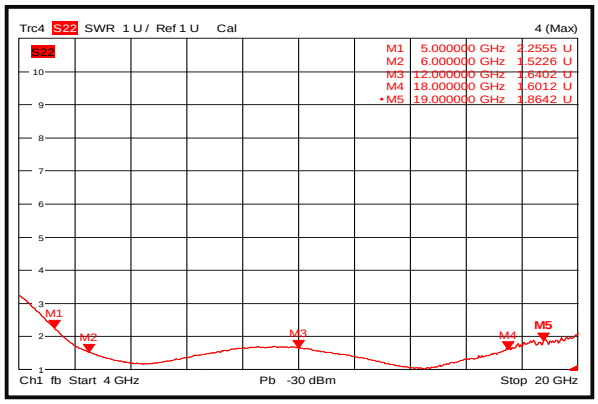
Gain



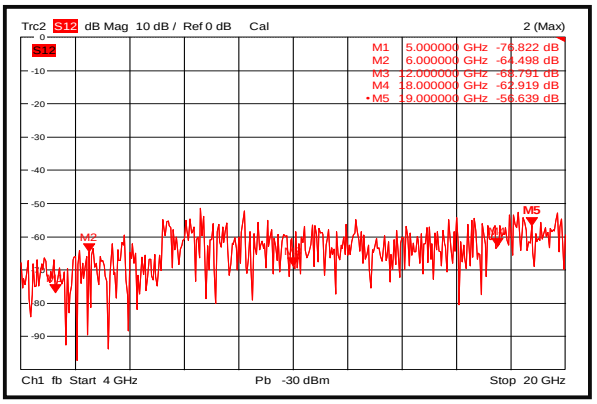
Input VSWR



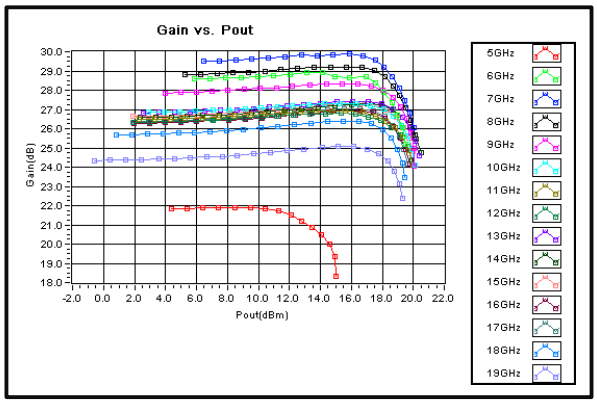
Output VSWR



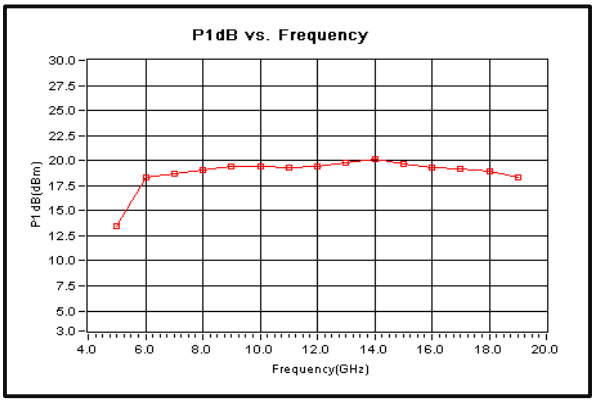
Isolation



Gain vs. Output Power



P1dB vs. Frequency



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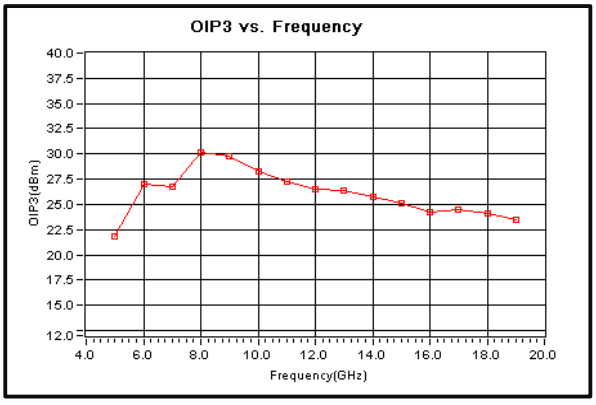
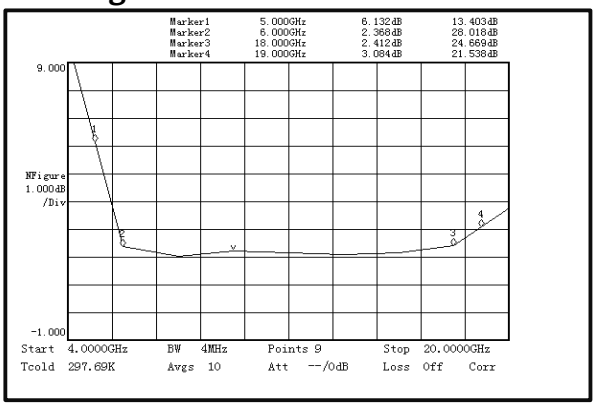
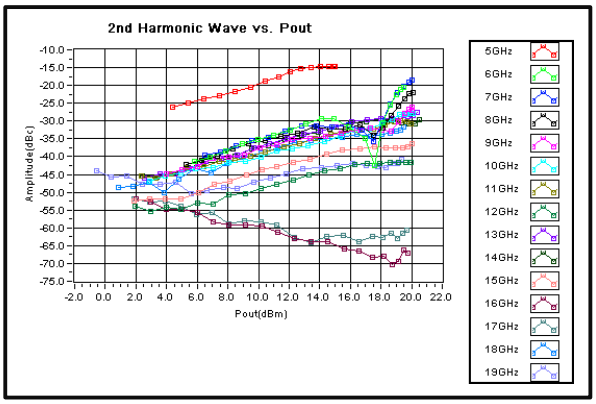
Output Third Order Intercept (IP3)



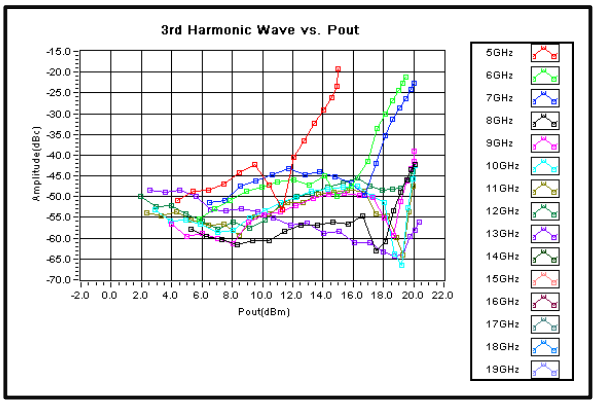
Noise Figure



2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



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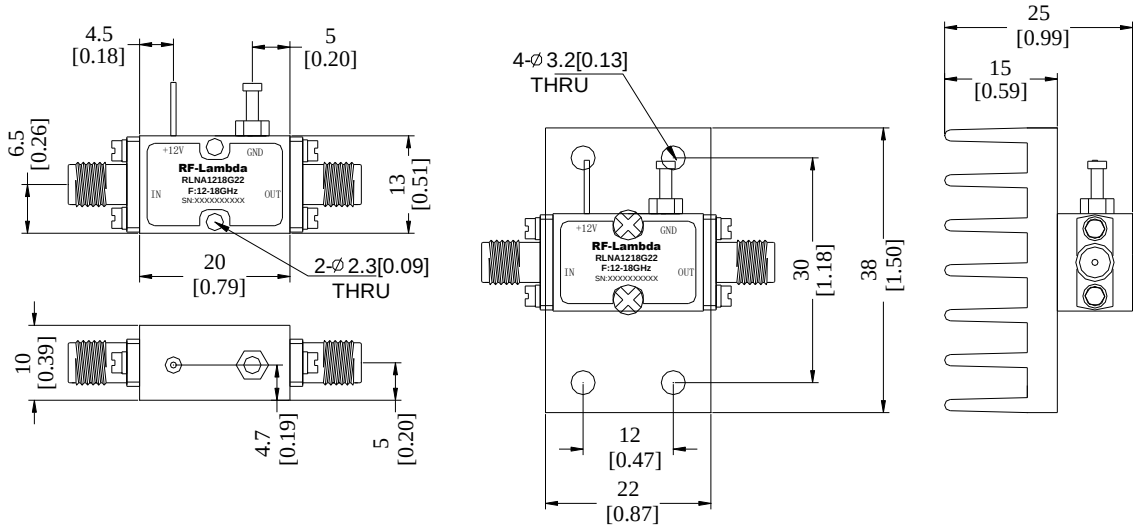
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
RLNA1218G22	EAR99	12-18GHz Low Noise Amplifier

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