



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNA06G18G30

Wide Band Ultra Low Noise Amplifier 6GHz~18GHz



Features

- Gain: 35 dB Typical
- Noise Figure: 1.6dB Typical
- P1dB Output Power: +27dBm Typical
- Supply Voltage: +12V

Typical Applications

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

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	6		12	12		18	GHz
Gain	32	35		29	32		dB
Gain Flatness		±1.5			±2.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0			±1.0		dB
Noise Figure		1.6	2.0		2.0	2.3	dB
Input VSWR		1.8			1.8		: 1
Output VSWR		2.0			2.0		: 1
Output 1dB Compression Point (P1dB)	25	27		24	26		dBm
Saturated Output Power (Psat)		29			28		dBm
Output Third Order Intercept (IP3)		36			34		dBm
Isolation S12		-65			-65		dB
Supply Current (Vcc=+12V)		620	1100		620	1100	mA
Weight	3.17						ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Gold Plated						
Material	Copper						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-8dBm

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°C~+85°C (Case Temperature)
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C 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)

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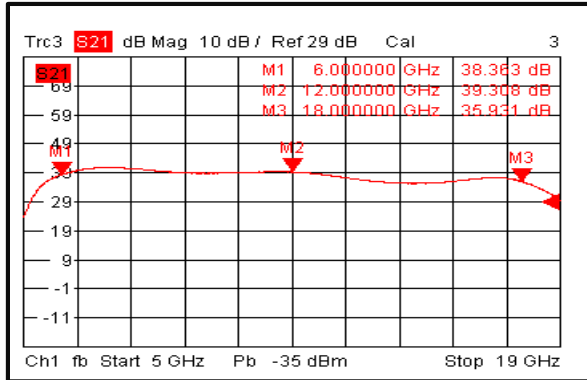
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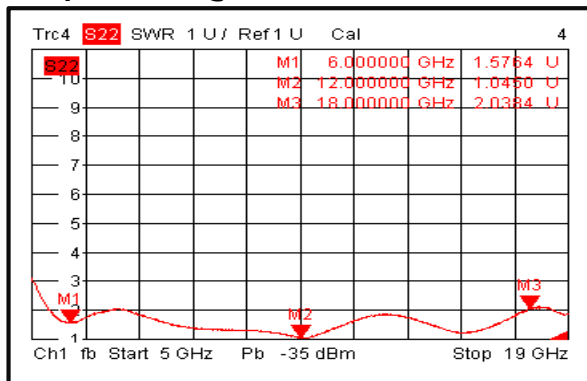
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Typical Performance Plots

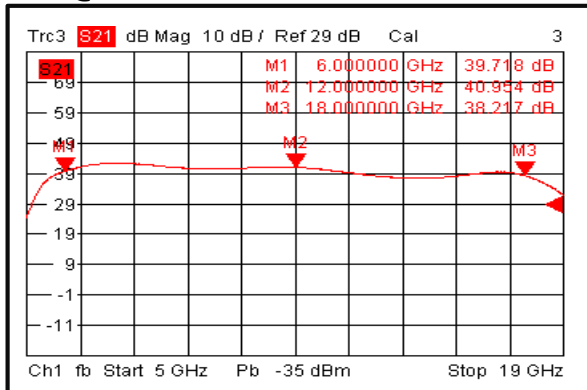
Gain@+25°C



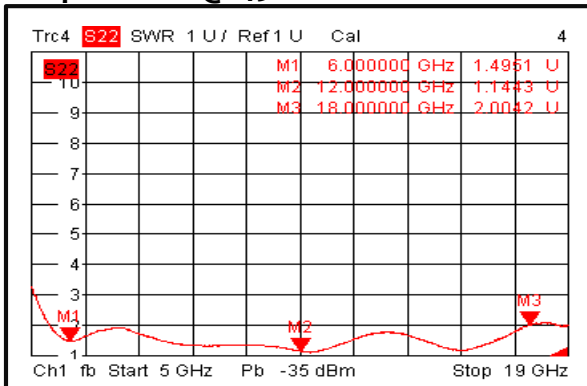
Output VSWR@+25°C



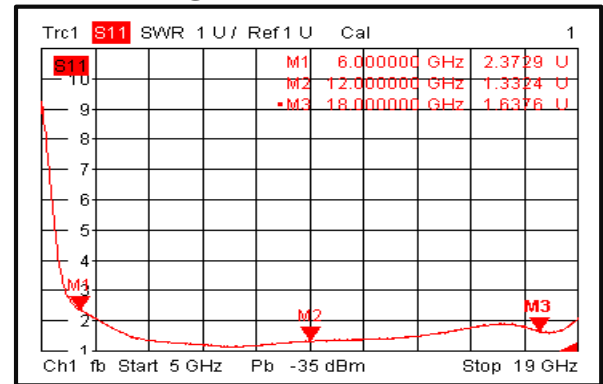
Gain@-45°C



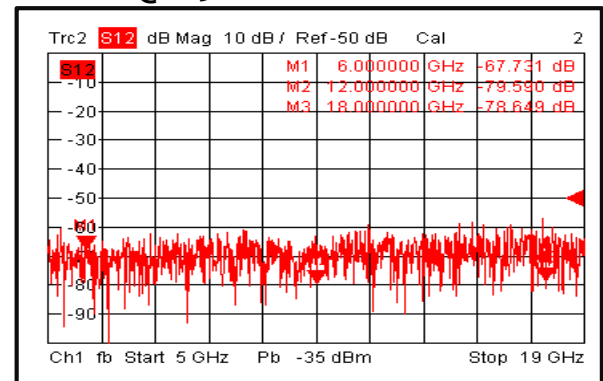
Output VSWR@-45°C



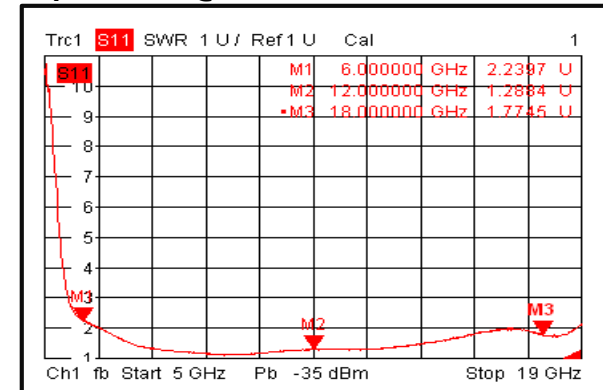
Input VSWR@+25°C



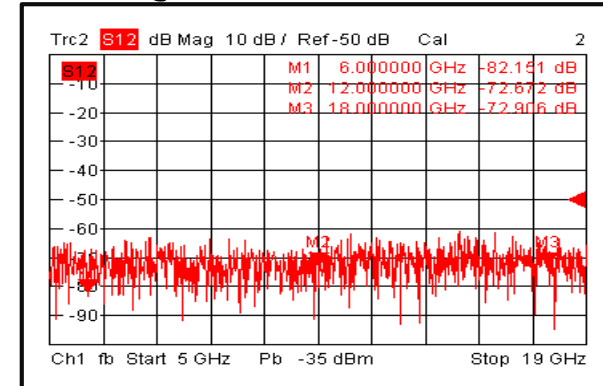
Isolation@+25°C



Input VSWR@-45°C



Isolation@-45°C



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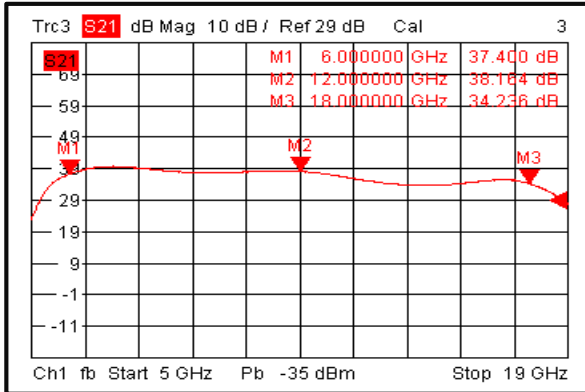


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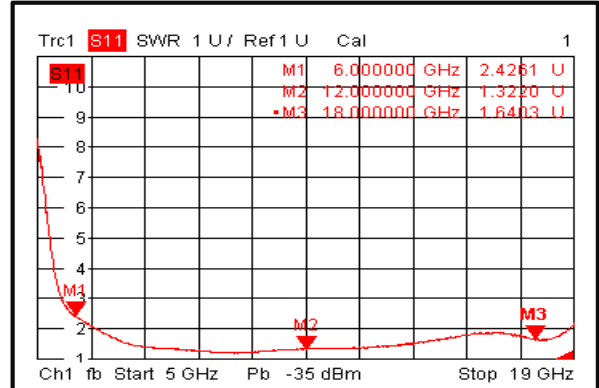
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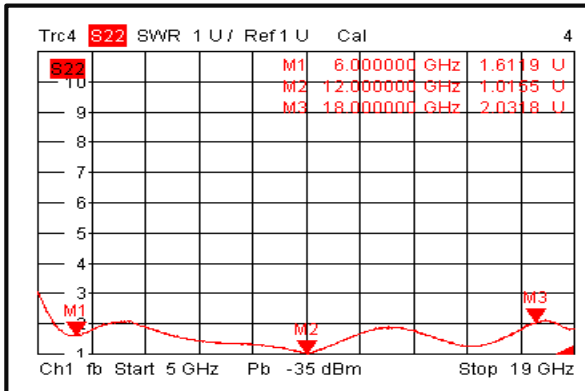
Gain@+85°C



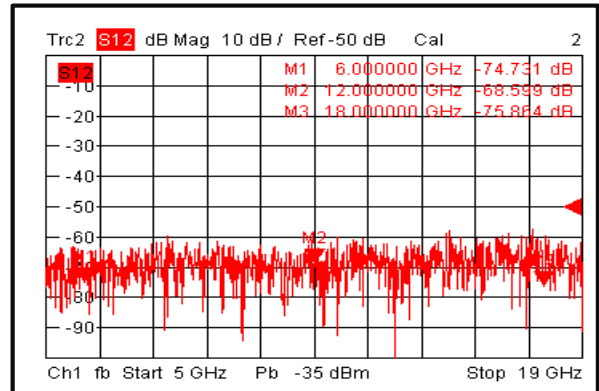
Input VSWR@+85°C



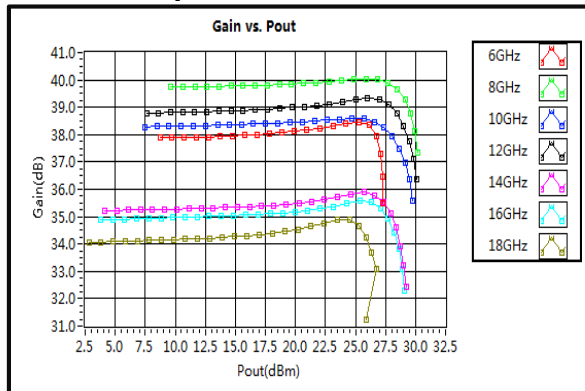
Output VSWR@+85°C



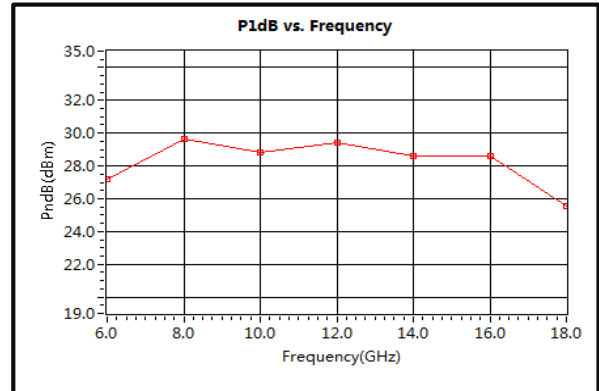
Isolation@+85°C



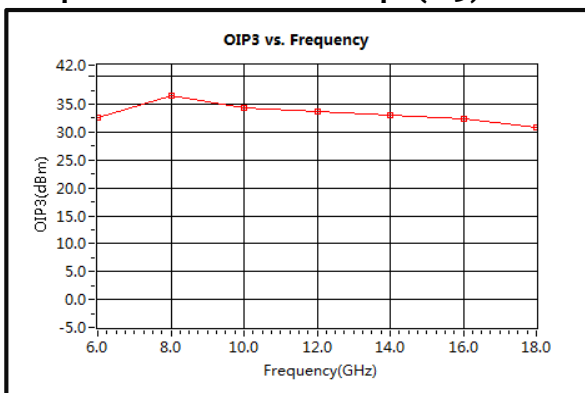
Gain vs. Output Power



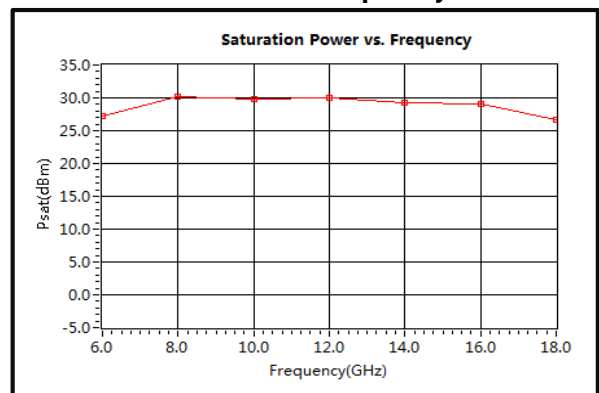
P1dB vs. Frequency



Output Third Order Intercept (IP3)



Saturation Power vs. Frequency



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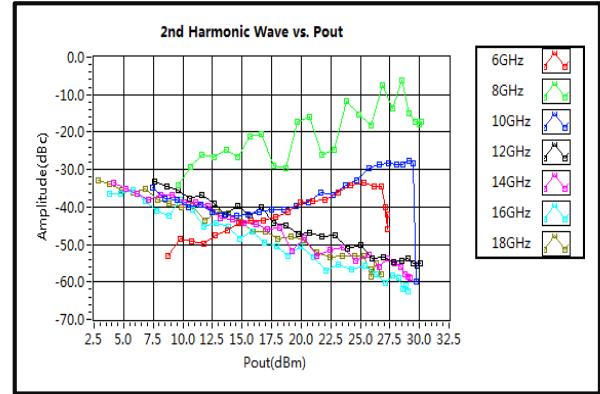
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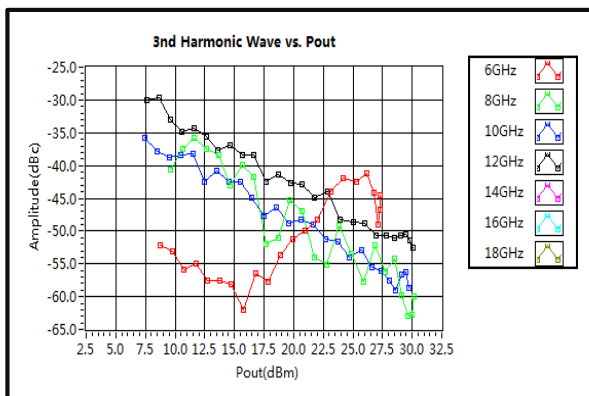
Noise Figure



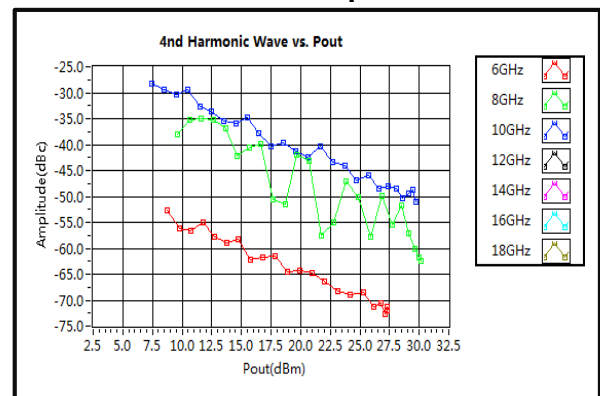
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

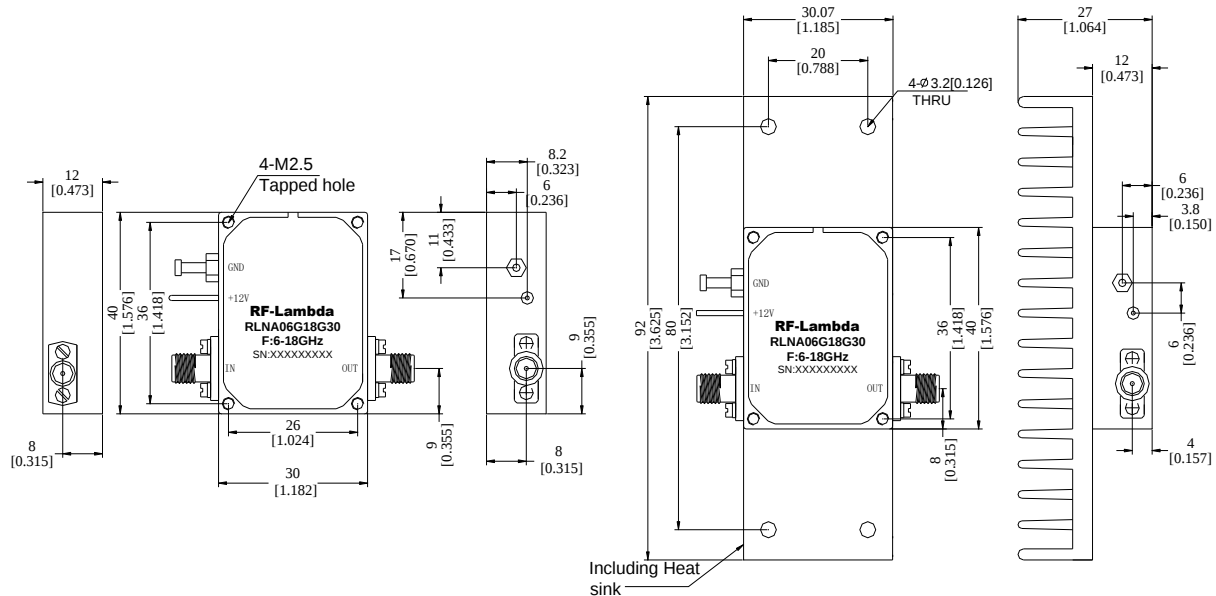


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Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
RLNA06G18G30	EAR99	6-18GHz Ultra Low Noise Amplifier

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