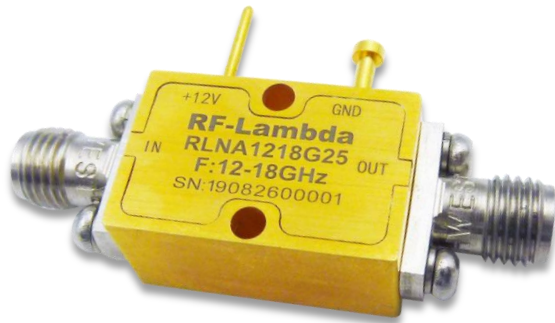




### Wide Band Low Noise Amplifier 12GHz~18GHz



#### Features

- Gain: 31dB 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

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

Parameter	Min	Typ	Max	Units
Frequency Range	12		18	GHz
Gain	28	31	34	dB
Gain Flatness		±0.5	±1.0	dB
Gain Variation Over Temperature (-45°C~+85°C)		±1.0		dB
Noise Figure		2.1	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		dBm
Saturated Output Power (Psat)		20		dBm
Output Third Order Intercept (OIP3)		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			
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness			
	Option: Gold 80 micron; Nickel 180 micron thickness			
Material	Aluminum			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Option with extra charge)			

Wide Band Low Noise Amplifier 12GHz~18GHz



**Absolute Maximum Ratings**

Operating Voltage	+8~15V
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**

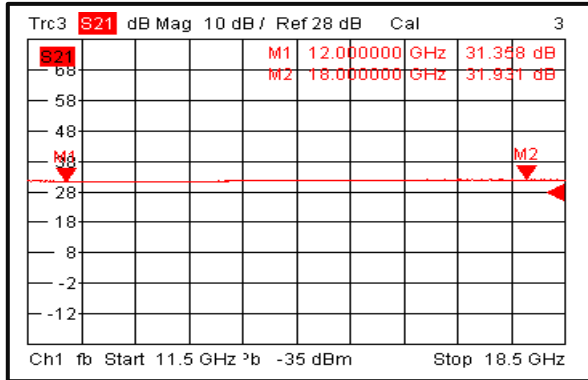
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72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

**Wide Band Low Noise Amplifier 12GHz~18GHz**

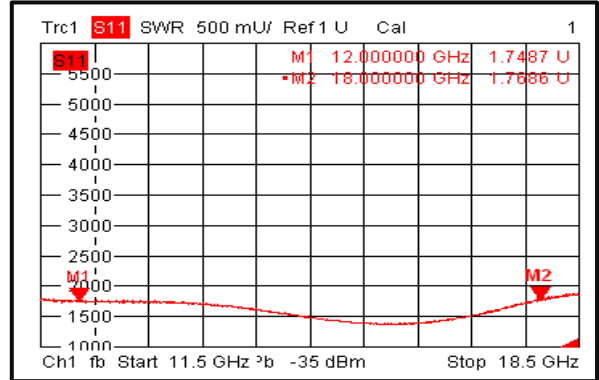


### Typical Performance Plots

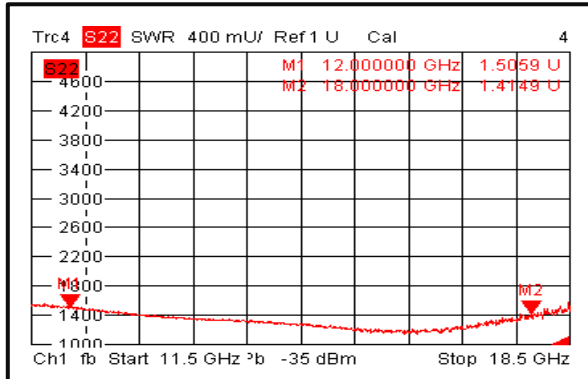
#### Gain@+25°C



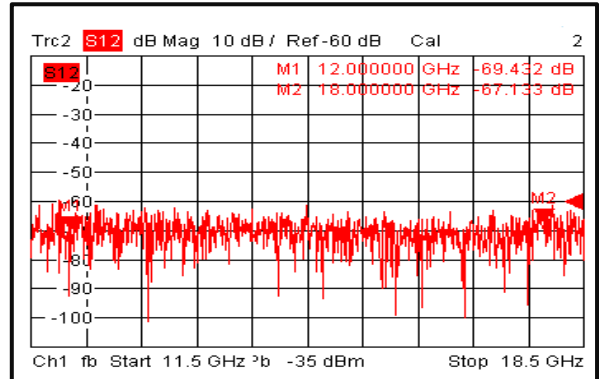
#### Input VSWR@+25°C



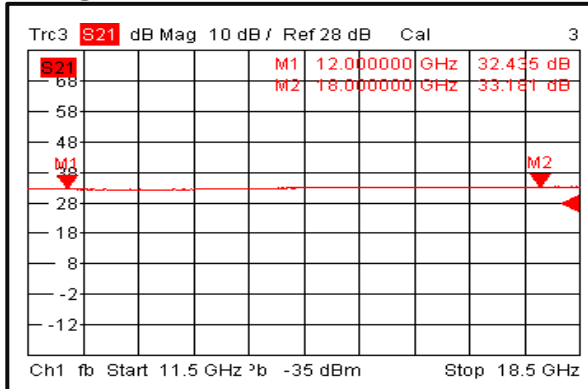
#### Output VSWR@+25°C



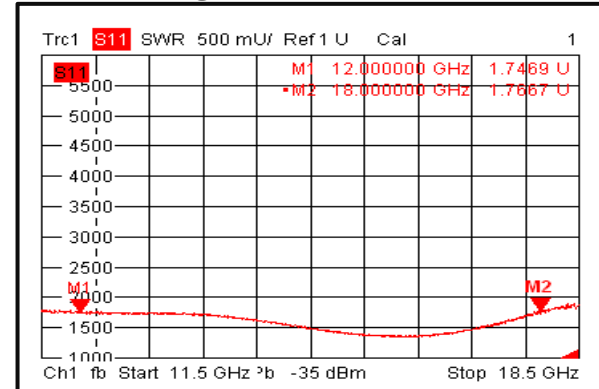
#### Isolation@+25°C



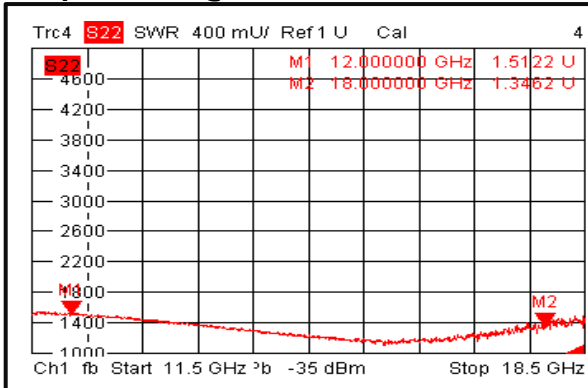
#### Gain@-45°C



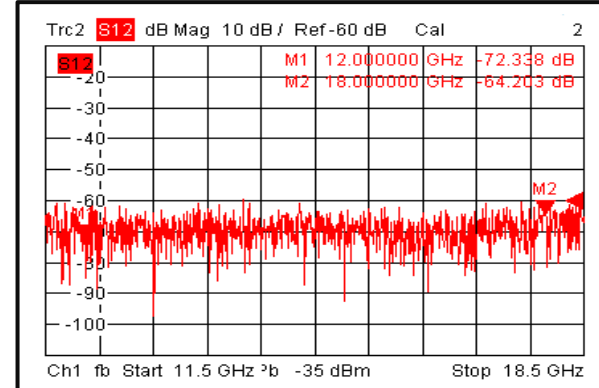
#### Input VSWR@-45°C



#### Output VSWR@-45°C



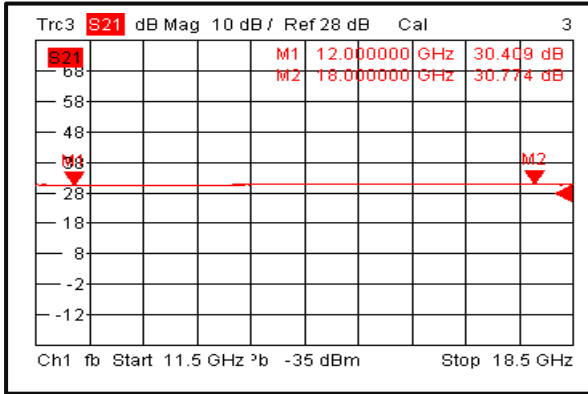
#### Isolation@-45°C



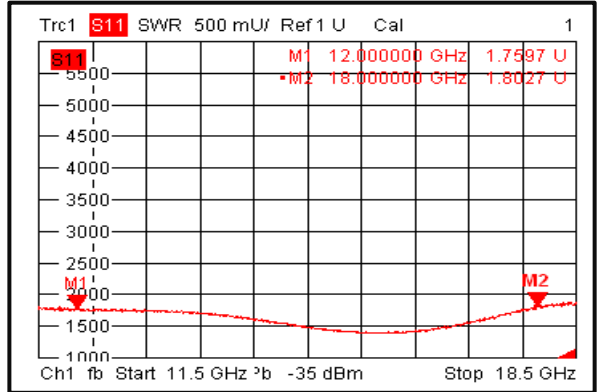
Wide Band Low Noise Amplifier 12GHz~18GHz



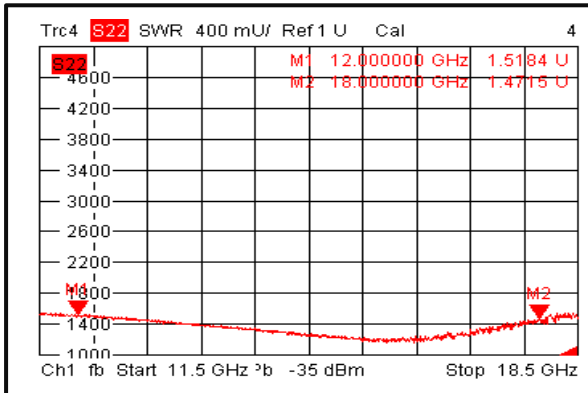
### Gain@+85°C



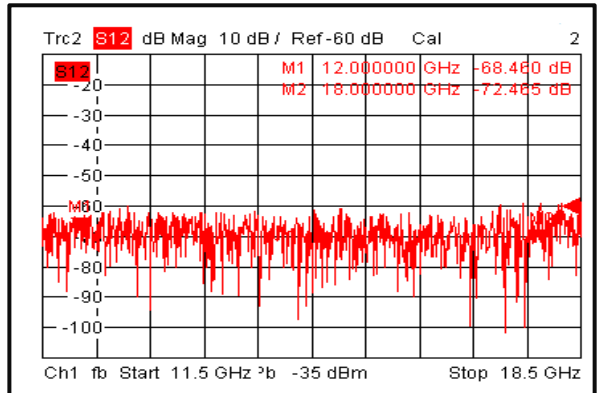
### Input VSWR@+85°C



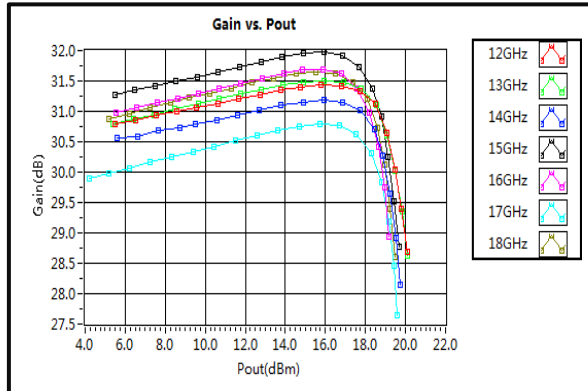
### Output VSWR@+85°C



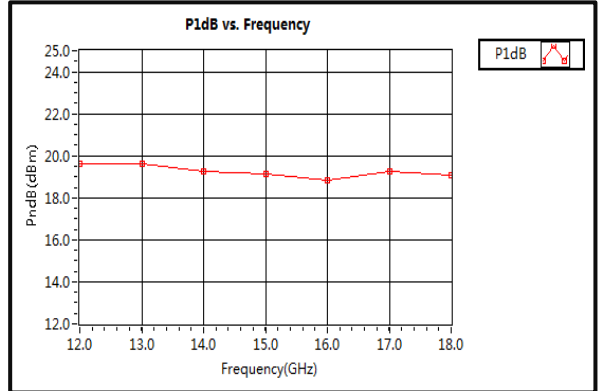
### Isolation@+85°C



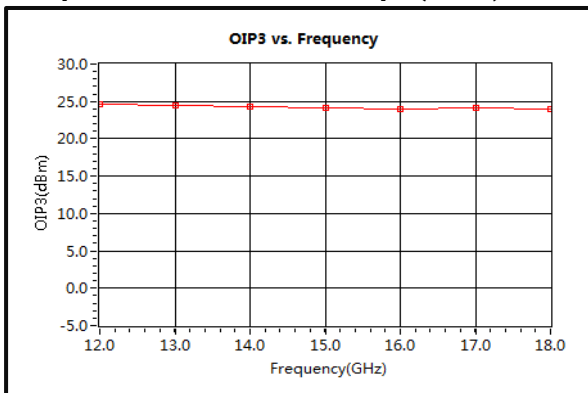
### Gain vs. Output Power



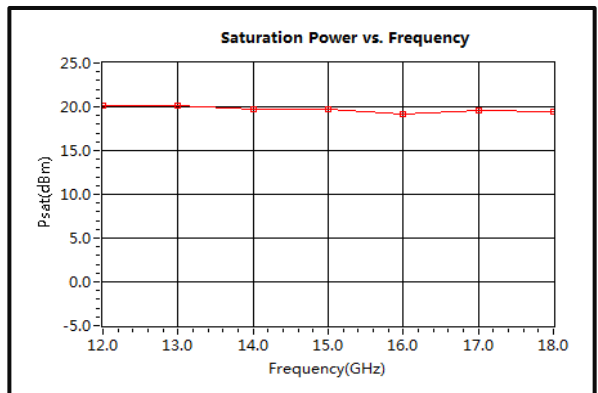
### P1dB vs. Frequency



### Output Third Order Intercept (OIP3)



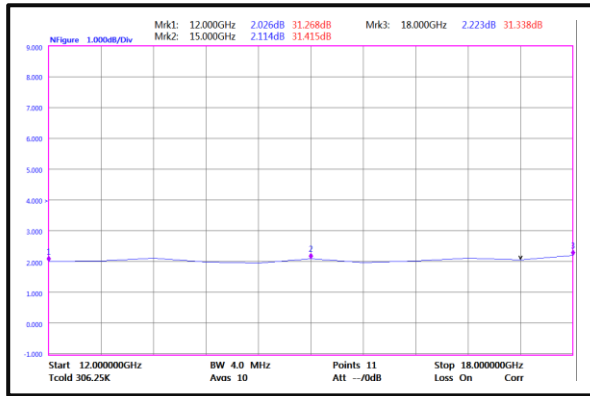
### Saturation Power vs. Frequency



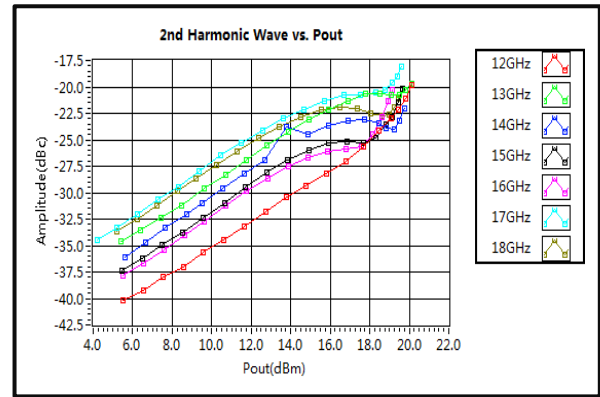
Wide Band Low Noise Amplifier 12GHz~18GHz



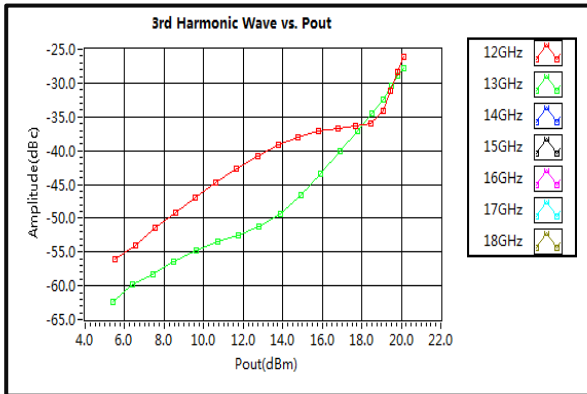
**Noise Figure**



**2nd Harmonic Wave Output Power**



**3rd Harmonic Wave Output Power**

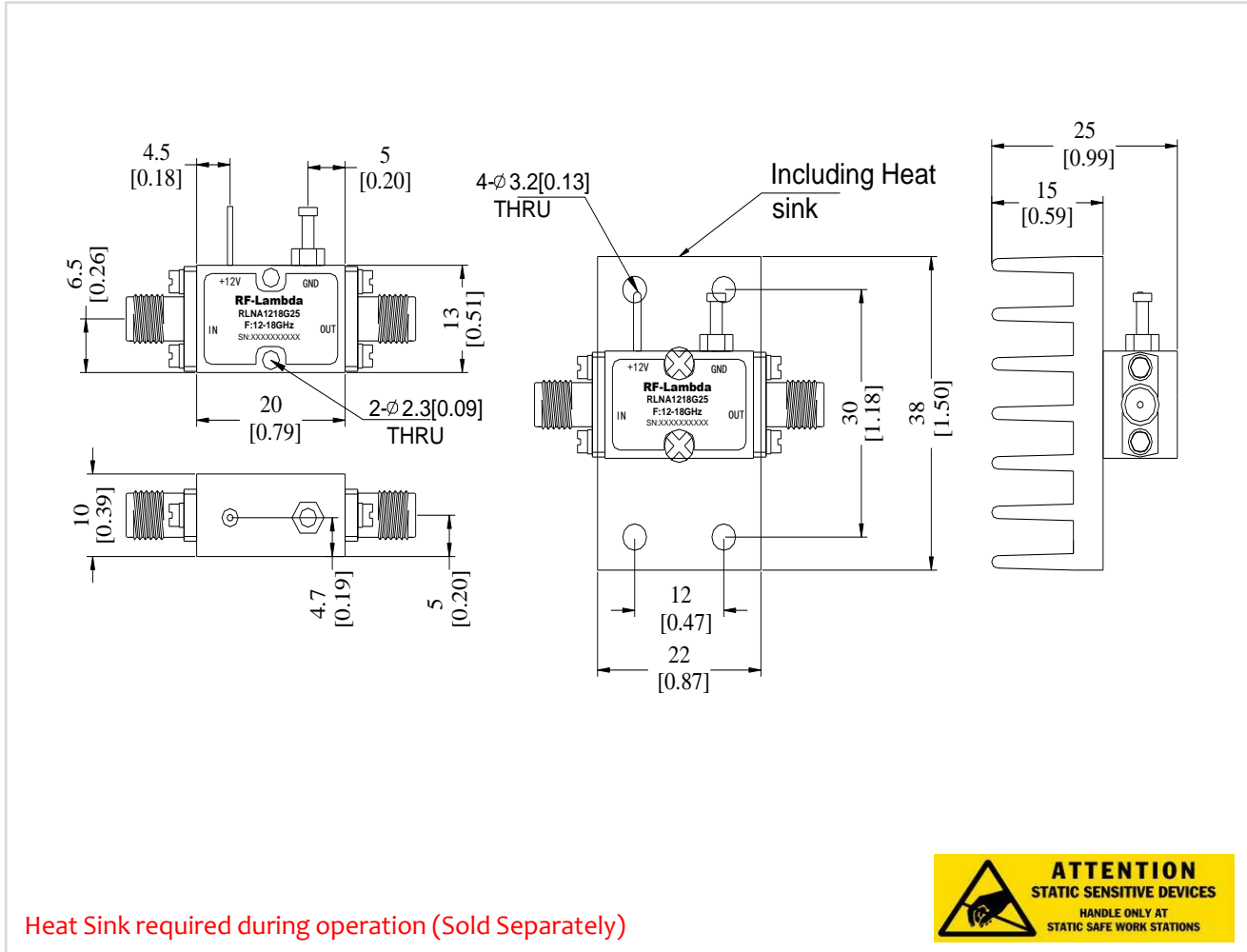


**Wide Band Low Noise Amplifier 12GHz~18GHz**



**Outline Drawing:**

All Dimensions in mm [inches]



**Wide Band Low Noise Amplifier 12GHz~18GHz**

**Ordering Information**

Part No.	ECCN	Description
RLNA1218G25	EAR99	12-18GHz Low Noise Amplifier

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