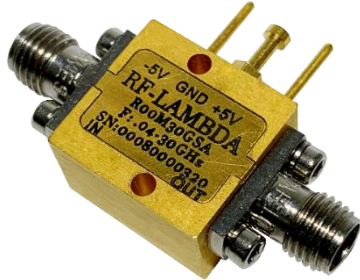




## Ultra Wide Band Low Noise Amplifier 0.04 ~ 30GHz



### Features

- Gain: 14dB Typical
- Noise Figure: 2.5dB Typical
- P1dB Output Power: +13dBm Typical
- Supply Voltage: +5V / -5V

### Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test Instrument

Electrical Specifications,  $T_A = +25\text{ }^\circ\text{C}$ ,  $V_{CC} = +5\text{V}$ ,  $V_{GG} = -5\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	units
Frequency Range	0.04		8	8		20	20		30	GHz
Gain		17			16			15		dB
Gain Flatness		$\pm 1.0$			$\pm 1.0$			$\pm 1.0$		dB
Gain Variation Over Temperature (-45 to +85)		$\pm 0.5$			$\pm 0.5$			$\pm 0.5$		dB
Noise Figure		4.0			2.5			4.5		dB
Input VSWR		1.5			1.6			1.8		: 1
Output VSWR		1.5			1.6			1.8		: 1
Output 1dB Compression Point (P1dB)		18			16			13		dBm
Saturated Output Power (Psat)		17			15			14		dBm
Output Third Order Intercept (IP3)		27			25			23		dBm
Supply Current ( $V_{CC} = +5\text{V}$ , $V_{GG} = -5\text{V}$ )		150			150			150		mA
Isolation S12		-45			-40			-35		dB
Weight	1.06									Ounces
Impedance	50									Ohms
Input / Output Connectors	2.92-Female									
Finish	Gold Plated									
Material	Aluminum									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

Ultra Wide Band Low Noise Amplifier 0.04 ~ 30GHz



**Absolute Maximum Ratings**

Operating Voltage	+8V
RF Input Power	+20dBm

**Biasing Up Procedure**

Step 1	Connect Ground Pin
Step 2	Connect input and output
step3	Connect -5V biasing
Step 4	Connect +5V biasing
Power OFF Procedure	
Step 1	Turn off +5V biasing
Step 2	Turn off -5V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

**Environmental Specifications and Test Standards**

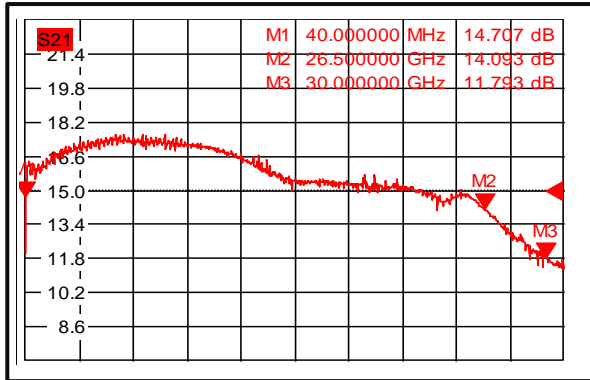
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72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

**Ultra Wide Band Low Noise Amplifier 0.04 ~ 30GHz**

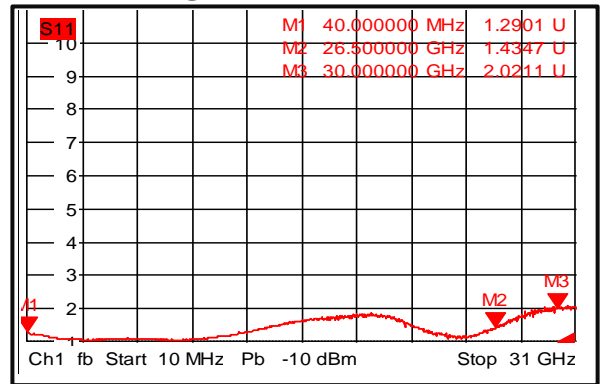


**Typical Performance Plots**

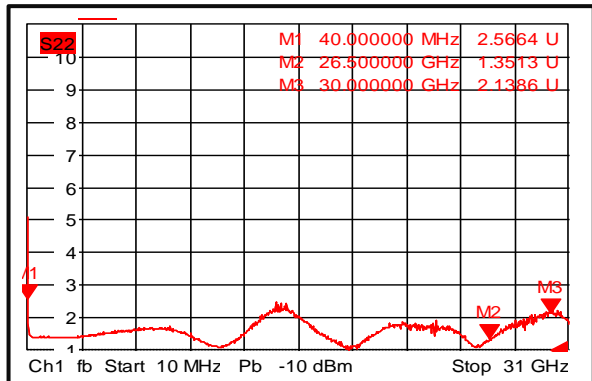
**Gain@+25°C**



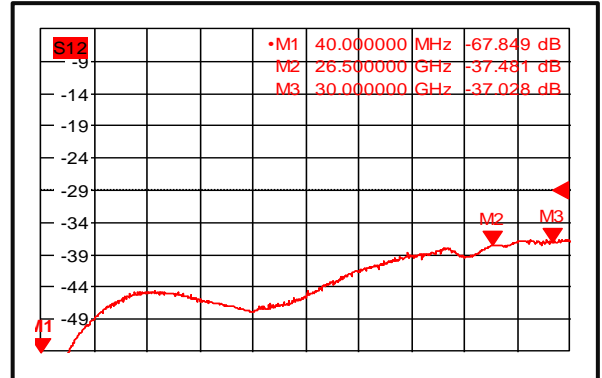
**Input VSWR@+25°C**



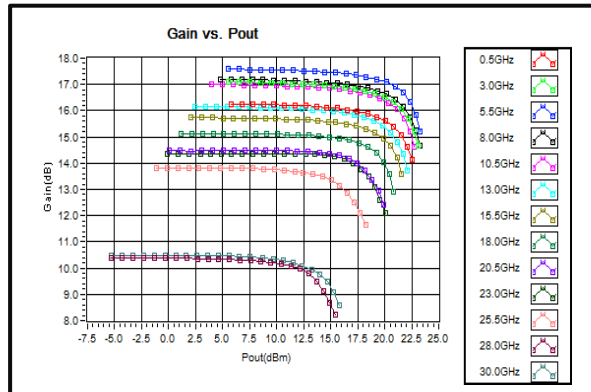
**Output VSWR@+25°C**



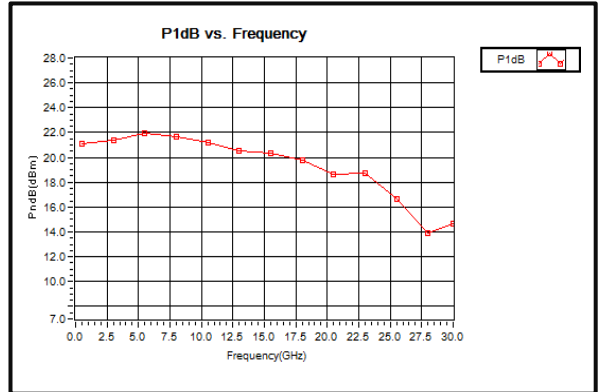
**Isolation@+25°C**



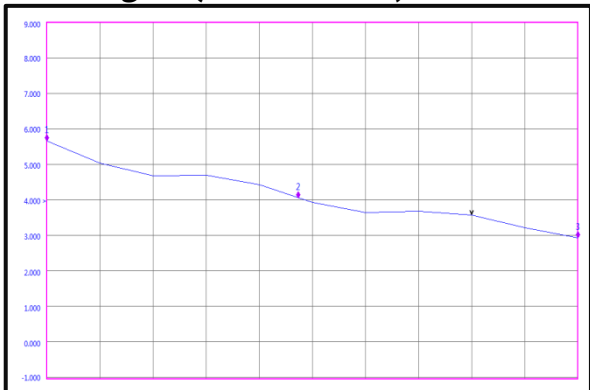
**Gain vs. Output Power**



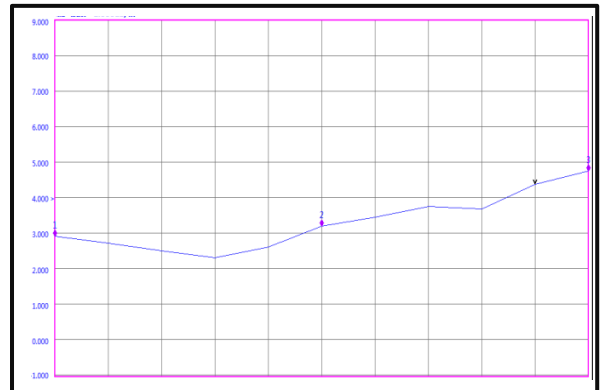
**P1dB vs. Frequency**



**Noise Figure (200MHz-4GHz)**



**Noise Figure (4GHz-26GHz)**

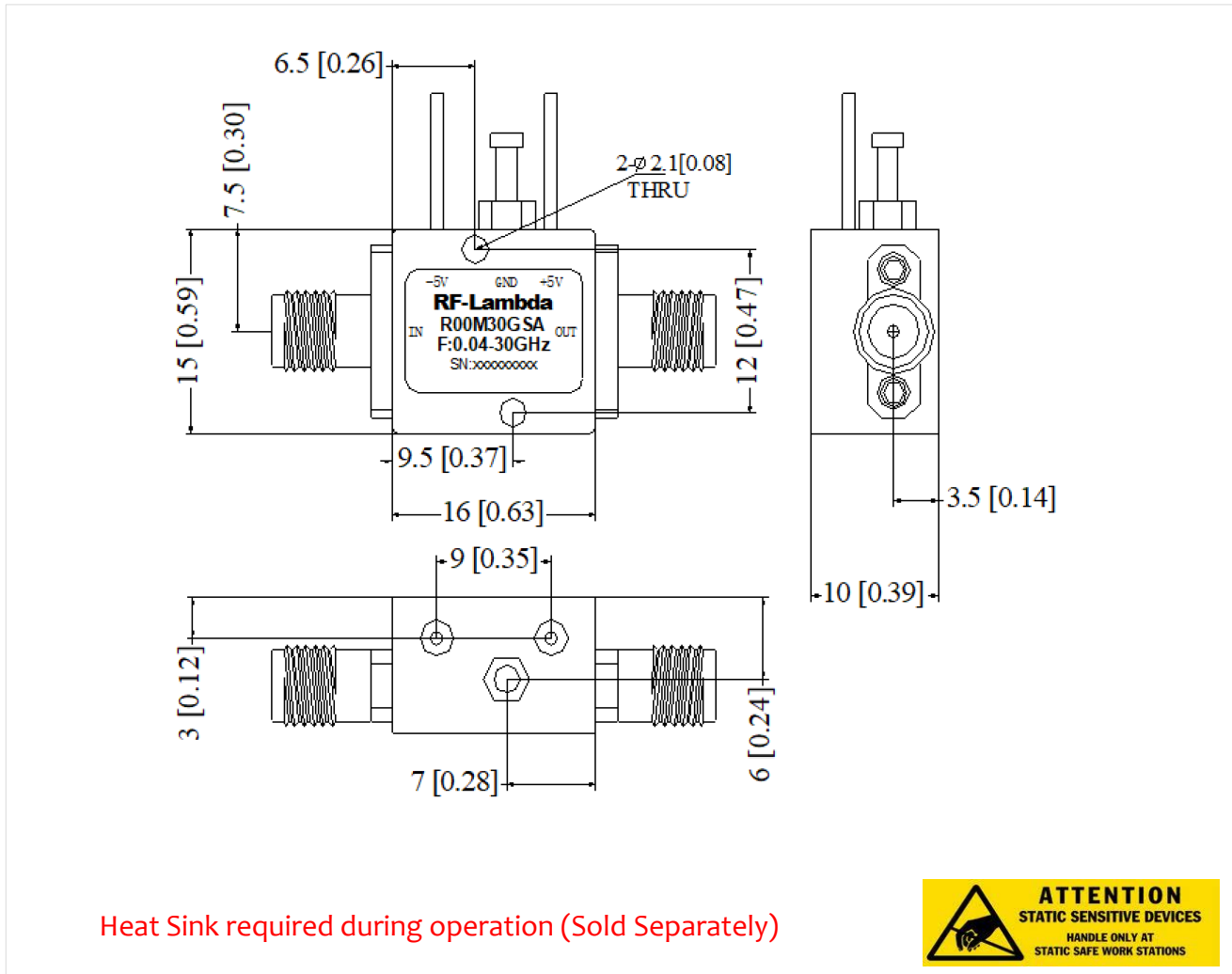


**Ultra Wide Band Low Noise Amplifier 0.04 ~ 30GHz**



**Outline Drawing:**

All Dimensions in mm [inches]



**Ultra Wide Band Low Noise Amplifier 0.04 ~ 30GHz**

**Ordering Information**

Part No.	Description
Room30GSA	0.04-30GHz Low Noise Amplifier

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