



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

ROOM30GSA

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

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test Instrument



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

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		± 1.0			± 1.0			± 1.0		dB
Gain Variation Over Temperature (-45 to +85)		± 0.5			± 0.5			± 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	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 (Optional)									

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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 +7V biasing
Power OFF Procedure	
Step 1	Turn off +7V 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	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)



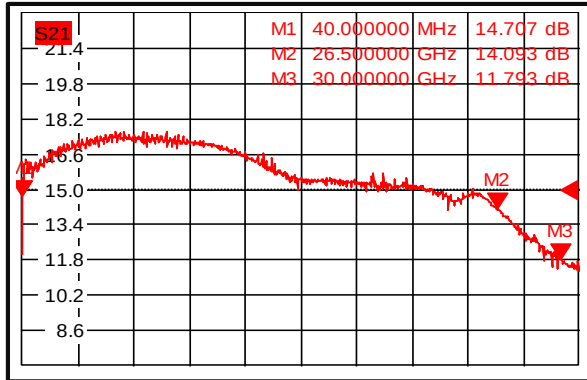
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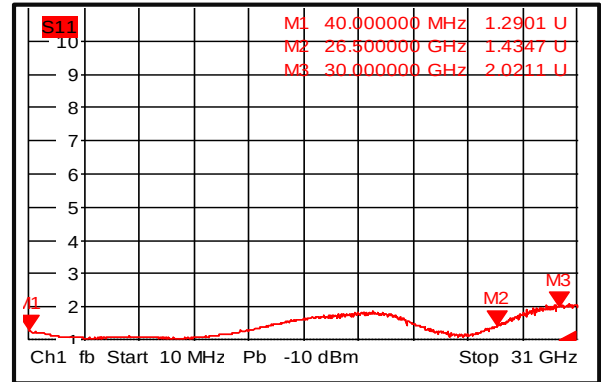
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Typical Performance Plots

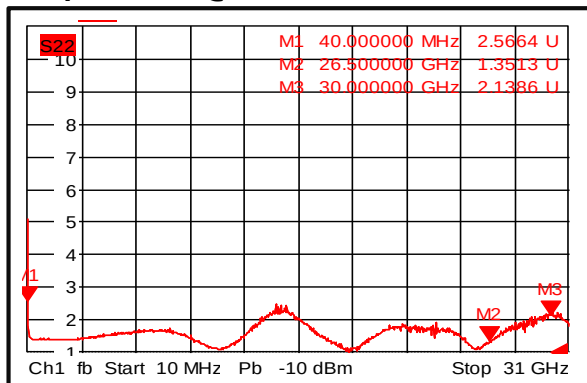
Gain@+25°C



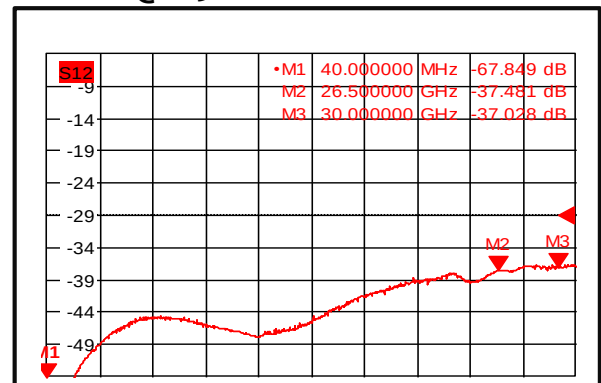
Input VSWR@+25°C



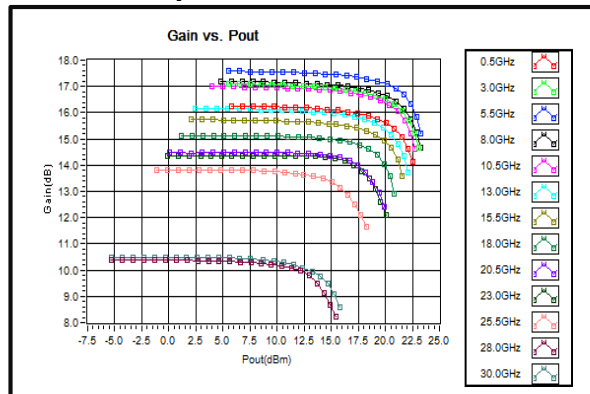
Output VSWR@+25°C



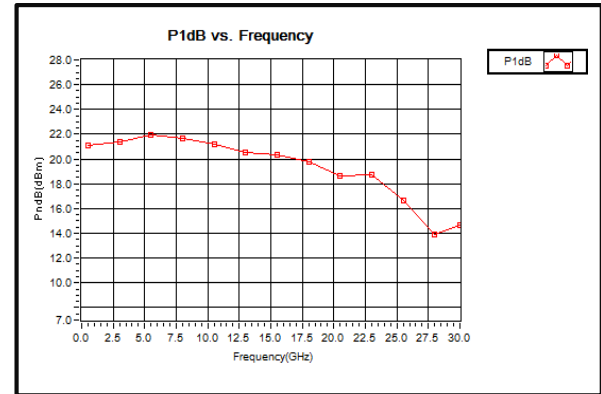
Isolation@+25°C



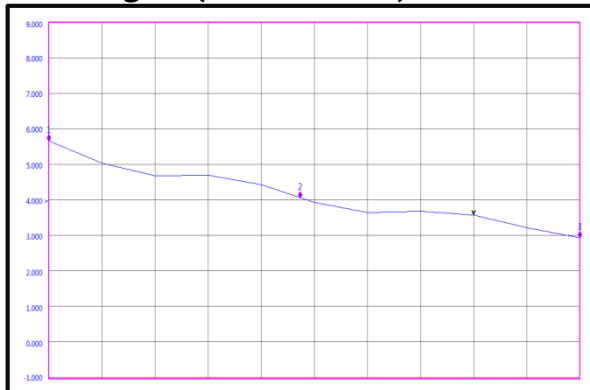
Gain vs. Output Power



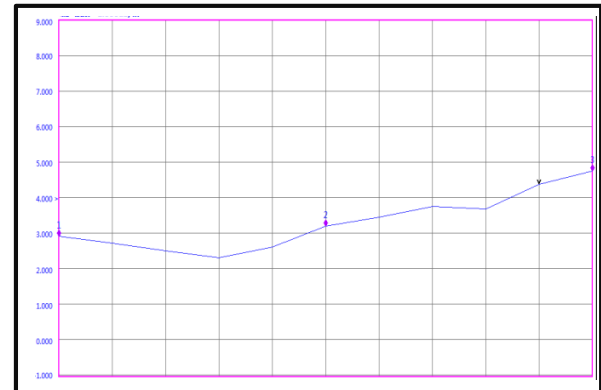
P1dB vs. Frequency



Noise Figure (200MHz-4GHz)



Noise Figure (4GHz-26GHz)

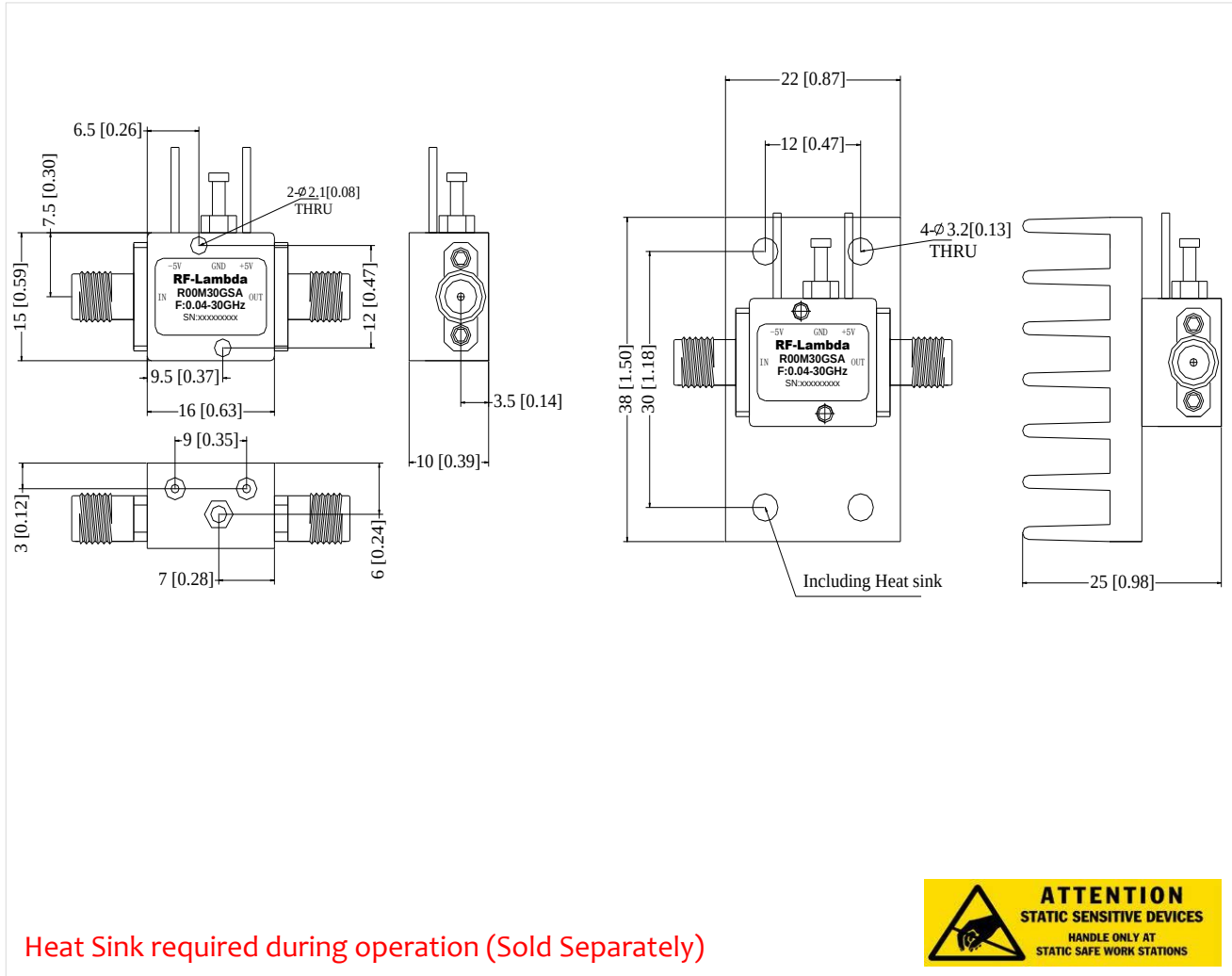


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Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	ECCN	Description
Room30GSA	EAR99	0.04-30GHz Low Noise Amplifier

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