



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

R30G65GSA

Wide Band Low Noise Amplifier 30GHz~65GHz



Features

- Gain: 20 dB Typical
- Saturated Output Power: +20 dBm Typical
- Supply Voltage: +4 V

Typical Applications

- Wireless Infrastructure
- Military and Aerospace
- Test and Measurement

Electrical Specifications, $T_A = +25^\circ \text{C}$, $V_{CC} = +4\text{V}$, $V_G = -5\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	30		40	40		60	60		65	GHz
Gain	15	17	22	17	20	22	12	15	22	dB
Gain Flatness		± 1.5			± 1.0			± 3.0		dB
Gain Variation Over Temperature ($-45^\circ\text{C} \sim +85^\circ\text{C}$)		± 2.5			± 2.5			± 2.5		dB
Noise Figure		/			/			/		dB
Input VSWR		2.5			2.5			2.5		: 1
Output VSWR		2.5			2.5			2.5		: 1
Output 1dB Compression Point (P1dB)	15	16		15	16		15	16		dBm
Saturated Output Power (Psat)	17	20		18	20		16	20		dBm
Output Third Order Intercept (OIP3)		25			25			25		dBm
Supply Current ($V_{CC}=+4\text{V}$, $V_G=-5\text{V}$)		400	750		400	750		400	750	mA
Isolation S12		-50			-45			-40		dB
Weight	2.1 Max.									ounces
Impedance	50									Ohms
Input / Output Connectors	1.85mm-Female									
Finish	Gold Plated									
Material	Copper									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Operating Voltage	+5V
RF Input Power	+23dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect -5V biasing
Step 4	Connect +4V biasing
Power OFF Procedure	
Step 1	Turn off +4V 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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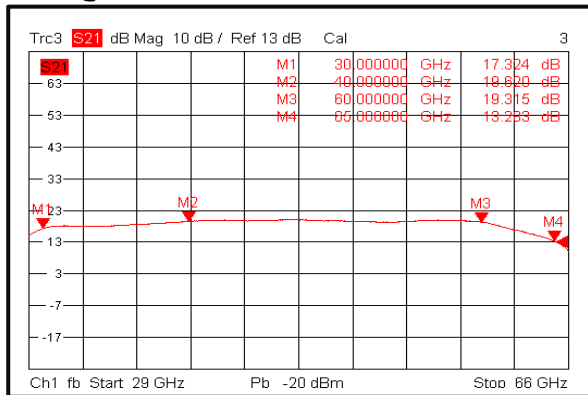
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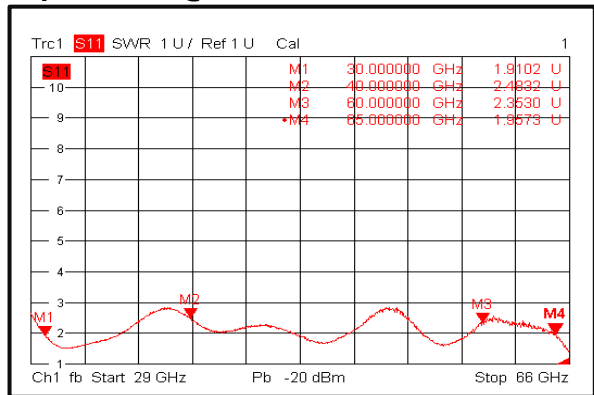
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Typical Performance Plots

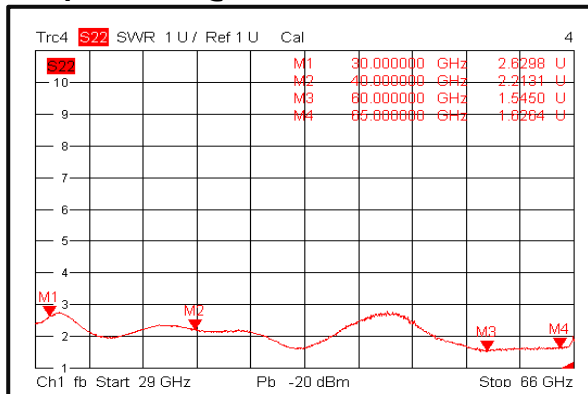
Gain@+25°C



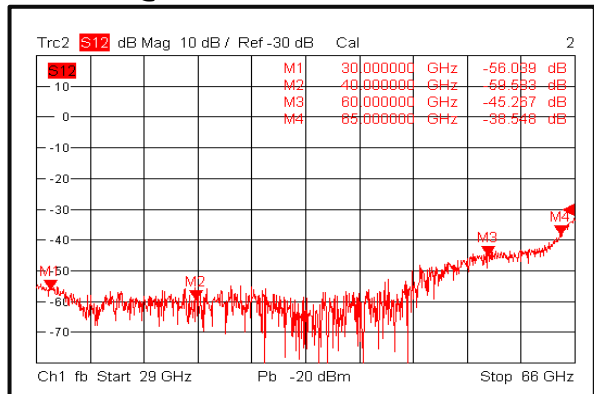
Input VSWR@+25°C



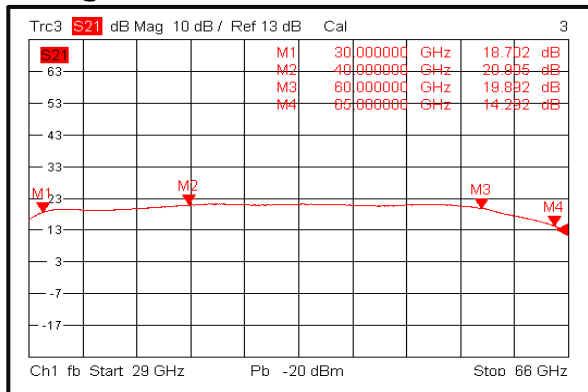
Output VSWR@+25°C



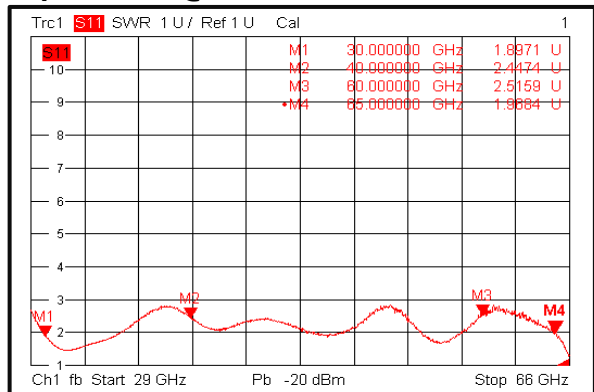
Isolation@+25°C



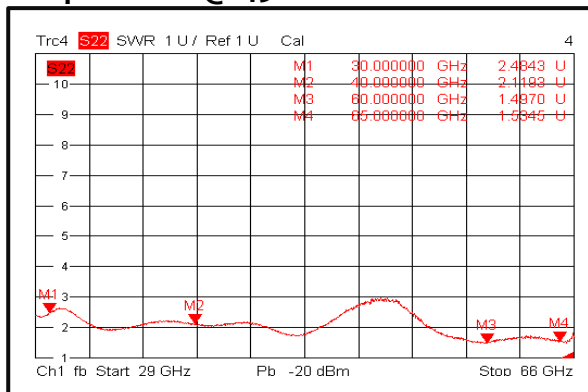
Gain@-45°C



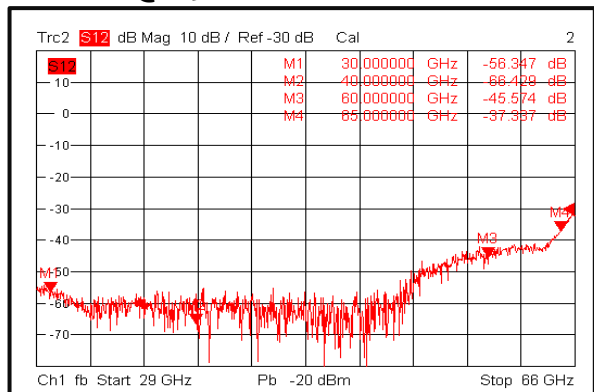
Input VSWR@-45°C



Output VSWR@-45°C



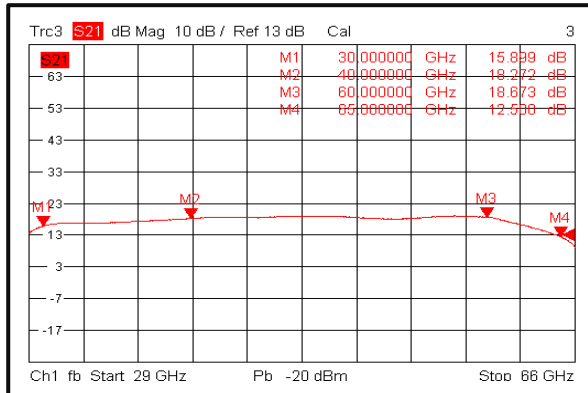
Isolation@-45°C



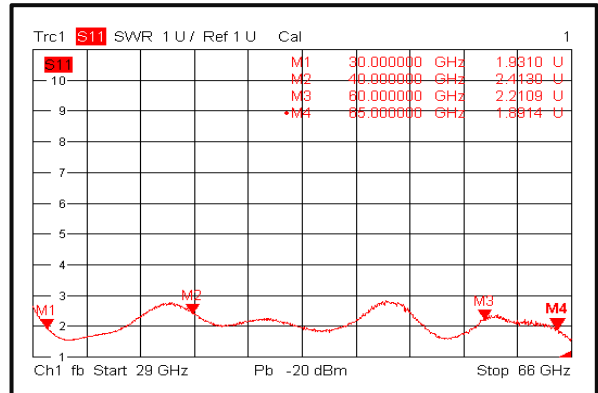
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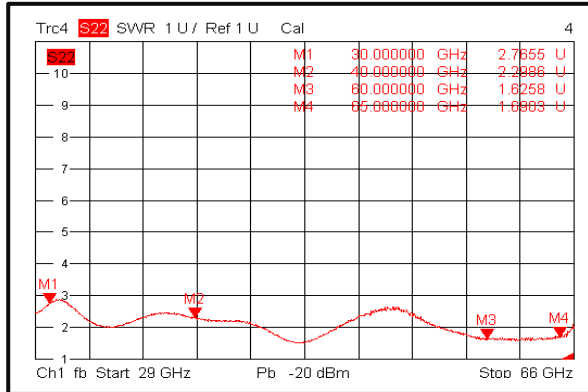
Gain@+85°C



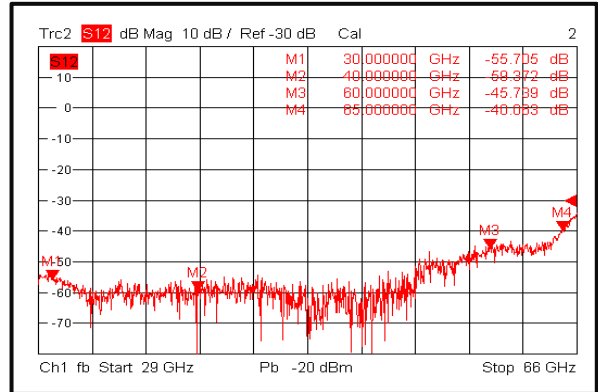
Input VSWR@+85°C



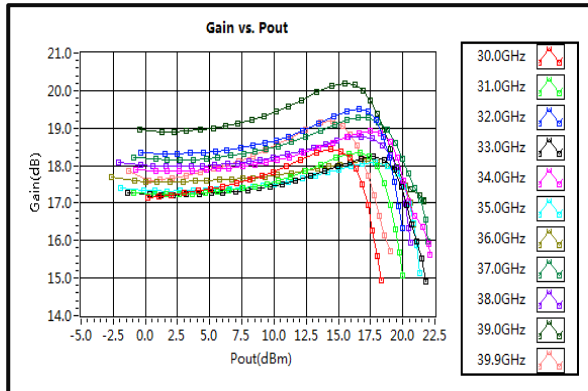
Output VSWR@+85°C



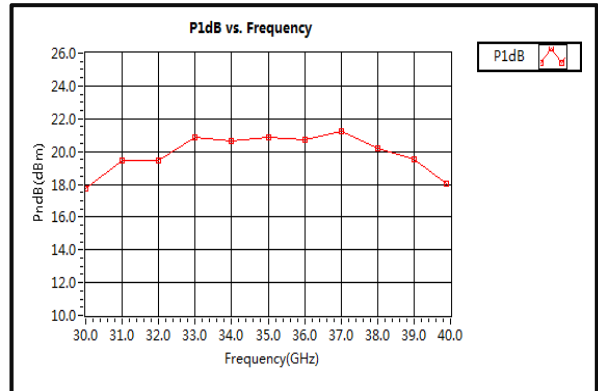
Isolation@+85°C



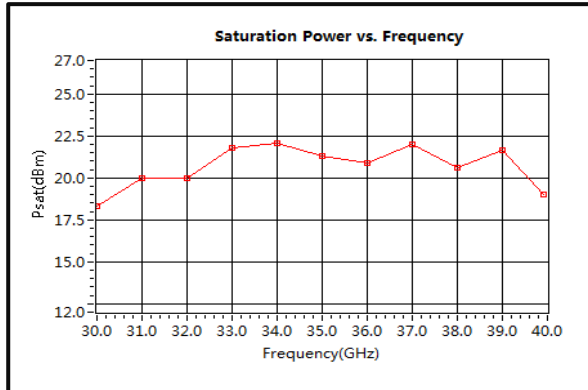
Gain vs. Output Power



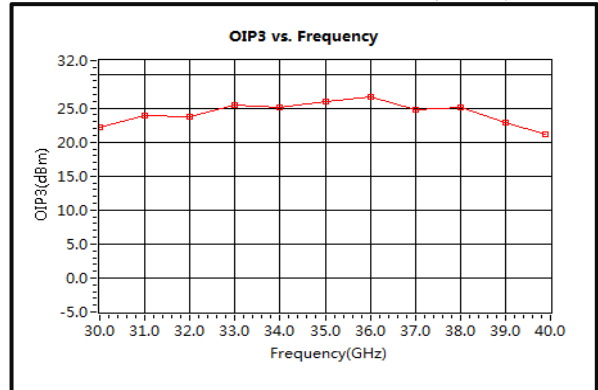
P1dB vs. Frequency



Saturation Power vs. Frequency



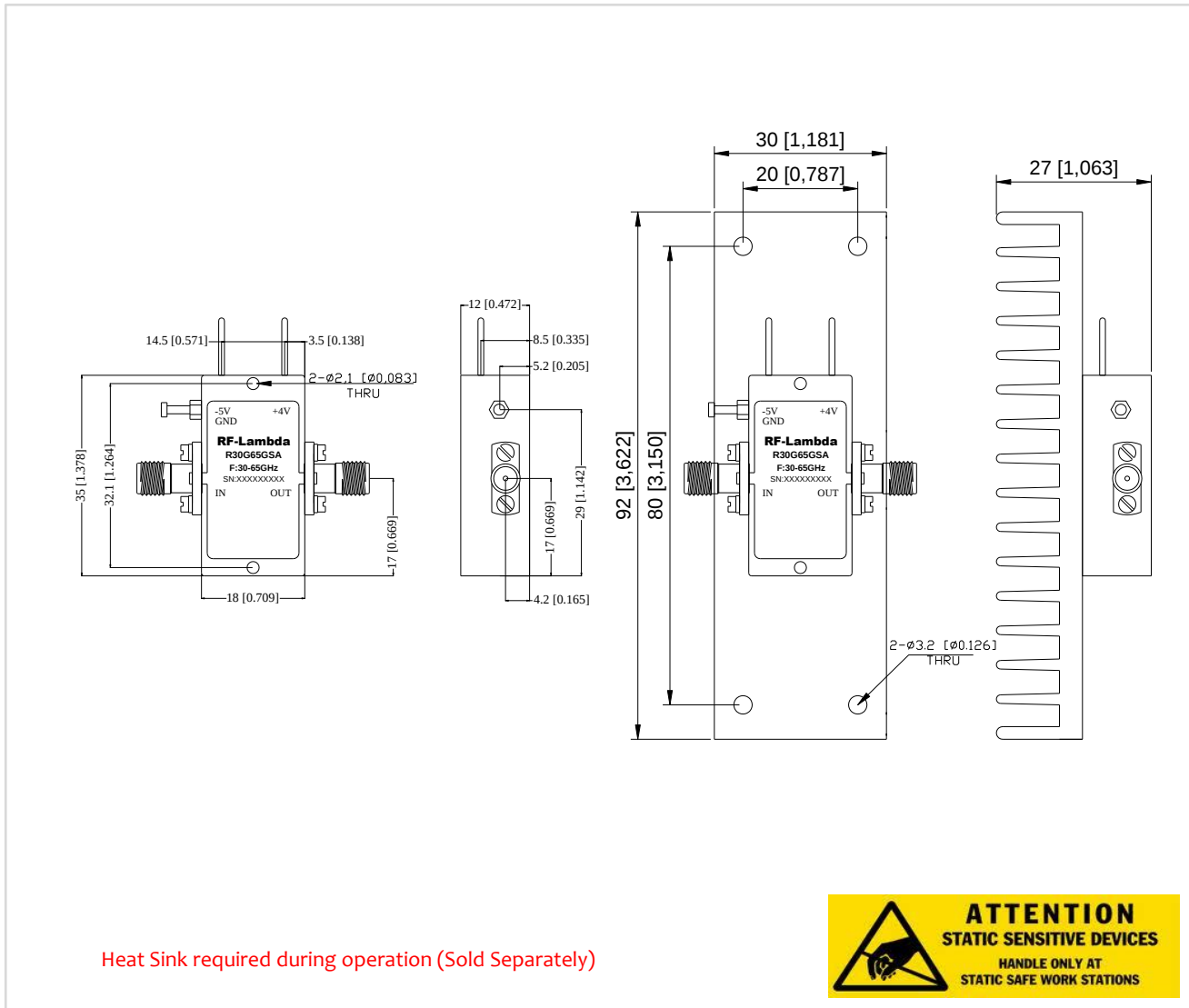
Output Third Order Intercept (OIP3)





Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	ECCN	Description
R30G65GSA	EAR99	30-65GHz Low Noise Amplifier

Important Notice

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