

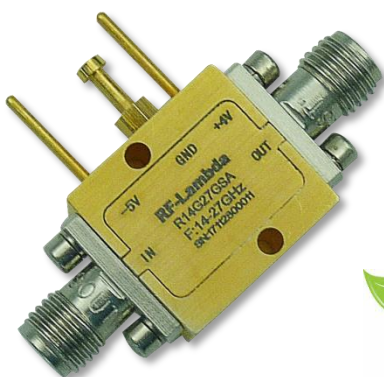


RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

R14G27GSA

Wide Band Low Noise Amplifier 14GHz~27GHz



Features

- Gain: 20dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +15dB Typical
- Supply Voltage: +4V & -5V

Typical Applications

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

Electrical Specifications, TA = +25°C, Vdd = +4V, Vgg=-5V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	14		21	21		27	GHz
Gain	18	20		16	18		dB
Gain Flatness		±1.0			±1.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±0.5			±0.5		dB
Noise Figure		2.2	3.0		2.0	2.5	dB
Input VSWR		1.6	2.0		1.6	2.0	: 1
Output VSWR		1.6	2.0		1.6	2.0	: 1
Output Power for 1 dB Compression (P1dB)	14	15		14	16		dBm
Saturated Output Power (Psat)		16			18		dBm
Output Third Order Intercept (IP3)		25			28		dBm
Supply Current (Idd)		90	150		90	150	mA
Isolation S12		-39			-36		dB
Weight	0.35						Ounces
Impedance	50						Ohms
Input / Output Connectors	2.92mm-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)						

Wide Band Low Noise Amplifier 14GHz~27GHz



Absolute Maximum Ratings

Operating Voltage	+4.5V
RF Input Power	-2dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
step3	Connect -5V biasing
Step 4	Connect +4V biasing
Power OFF Procedure	
Step 1	Turn off +4V biasing
step2	Turn off -5V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

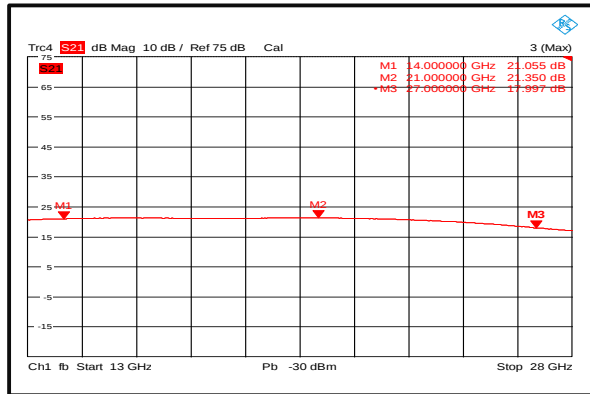
Environmental Specifications and Test Standards

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)

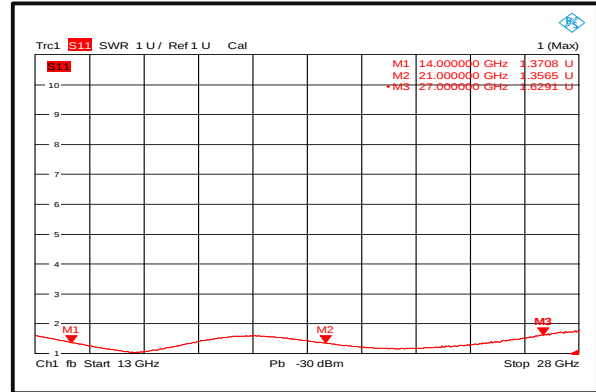


Typical Performance Plots

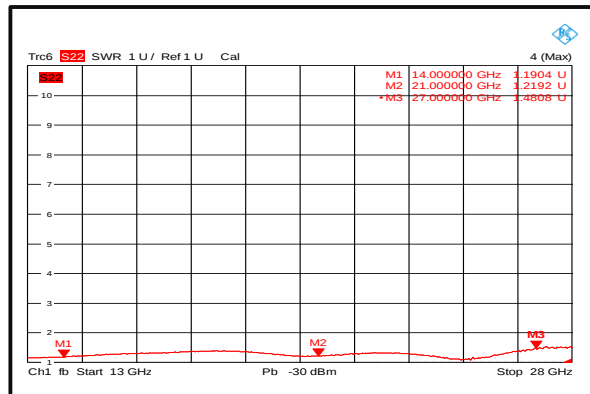
Gain @+25°C



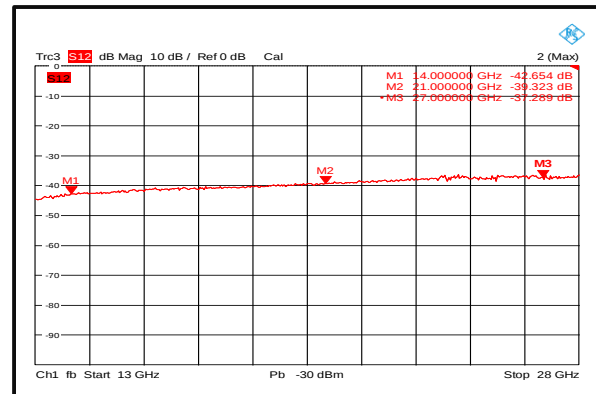
Input VSWR @+25°C



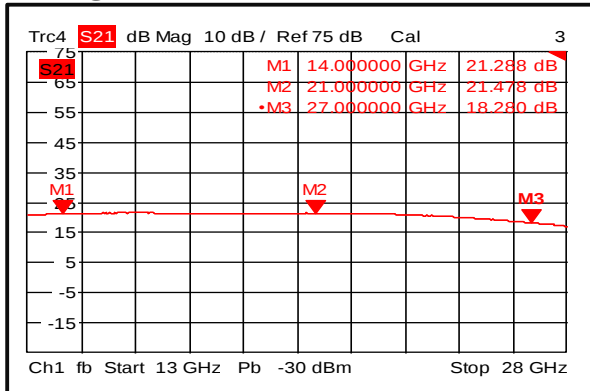
Output VSWR @+25°C



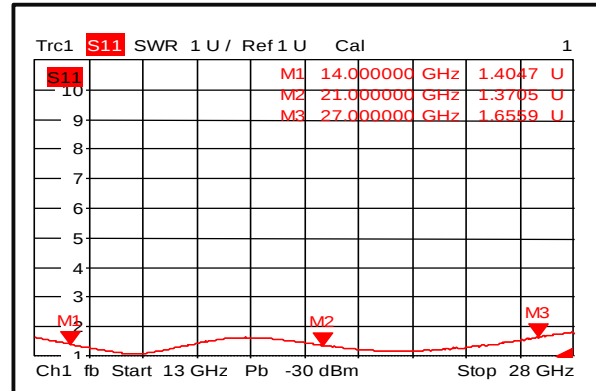
Isolation @+25°C



Gain @-45°C

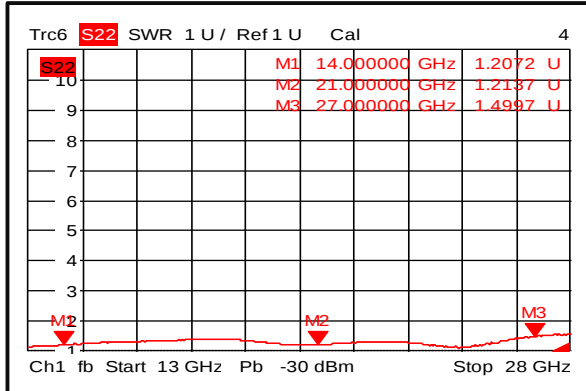


Input VSWR @-45°C

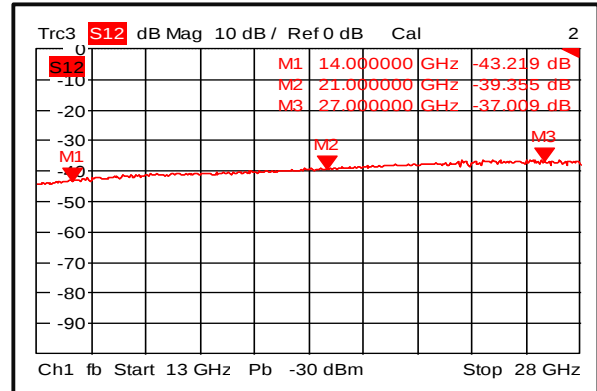




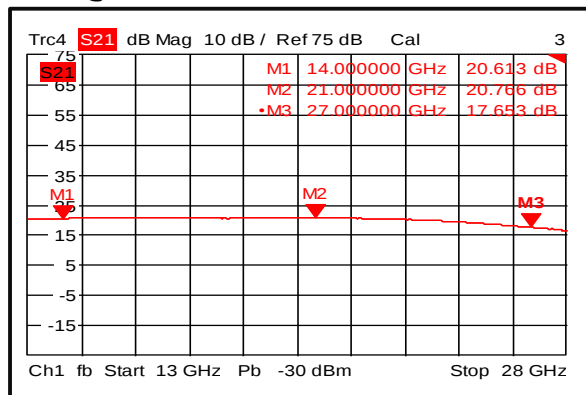
Output VSWR @-45°C



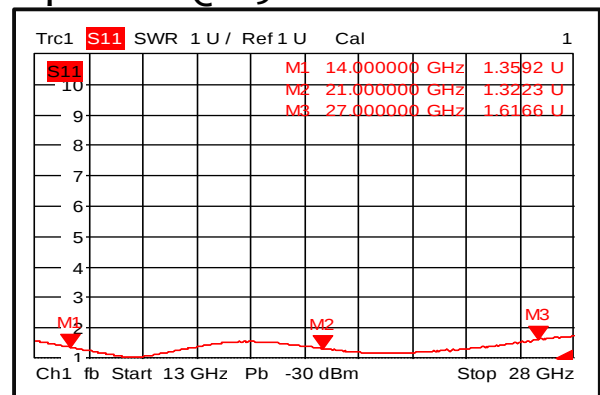
Isolation @-45°C



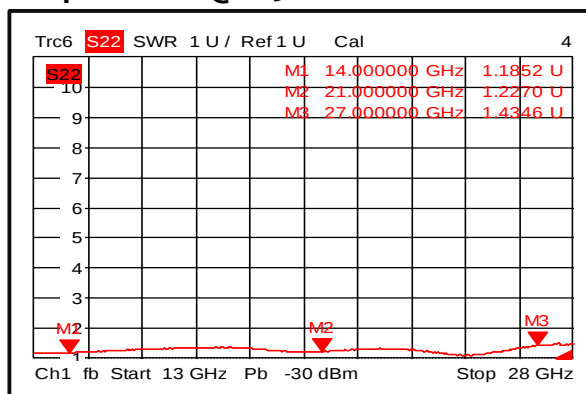
Gain @+85°C



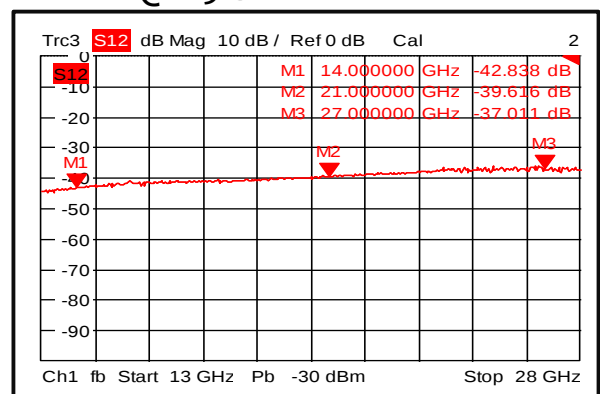
Input VSWR @+85°C



Output VSWR @+85°C

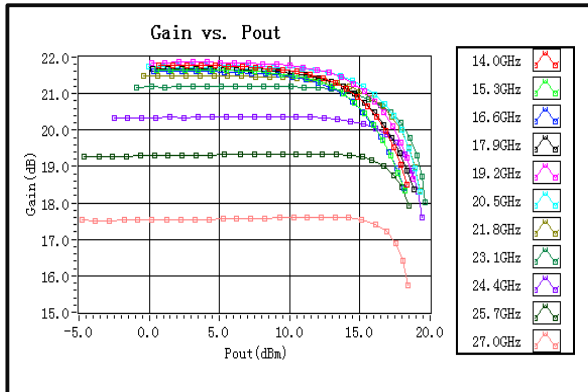


Isolation @+85°C

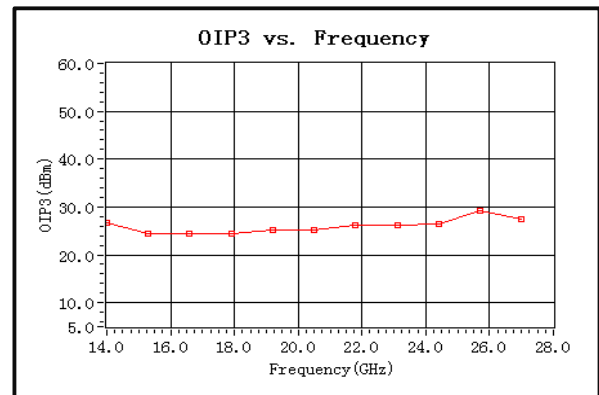




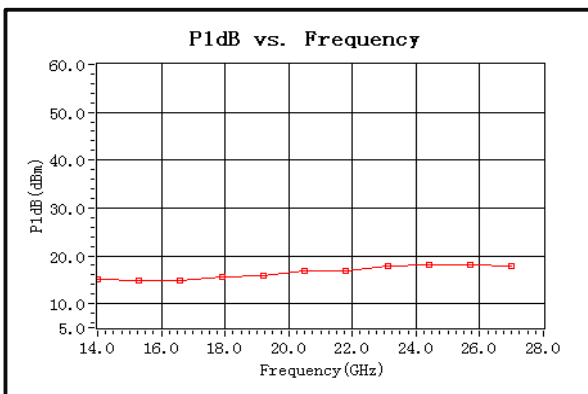
Gain vs. Output Power



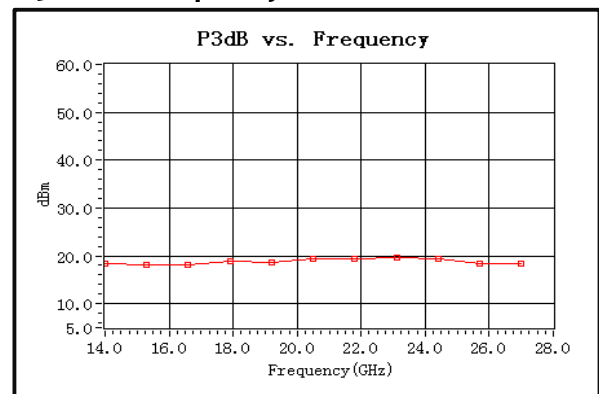
Output Third Order Intercept (IP3)



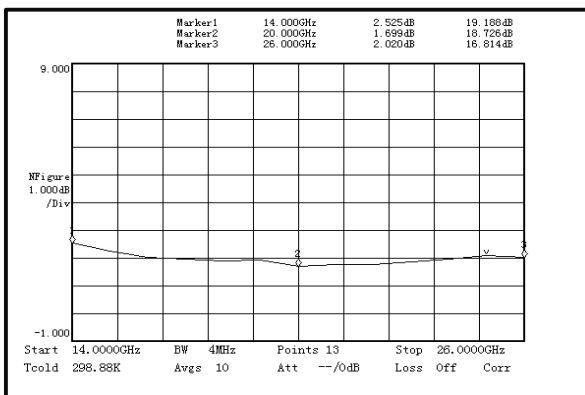
P1dB vs. Frequency



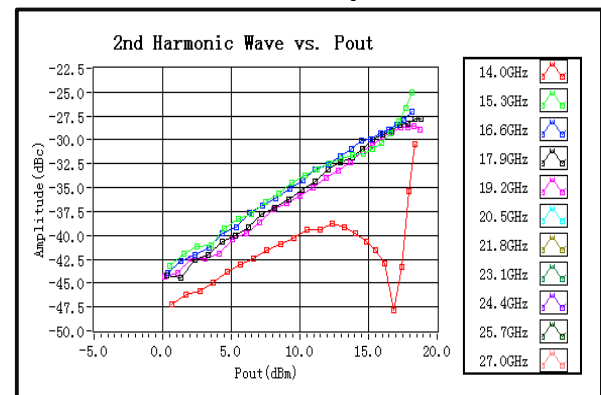
P3dB vs. Frequency



Noise Figure



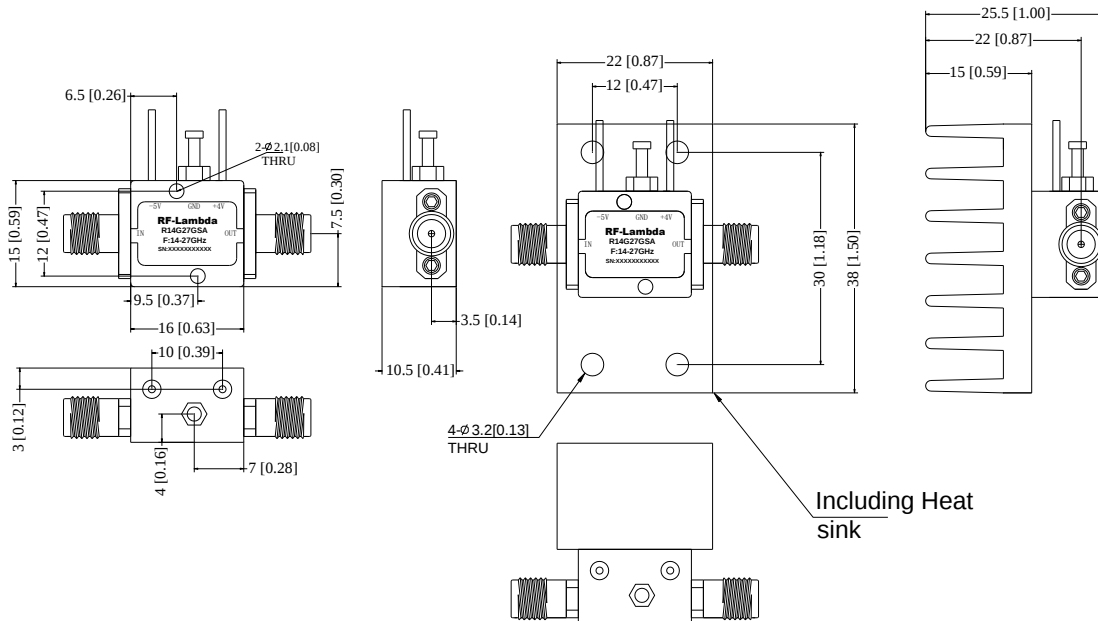
2nd Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
R14G27GSA	EAR99	14-27GHz Wide Band Low Noise Amplifier

Important Notice

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