



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

R05G20GSA

Low Noise Amplifier 5GHz ~ 20 GHz



Features

- Gain: 13dB Typical
- Noise Figure: 2.0dB Typical
- Output P1dB: +15dBm Typical
- Supply Voltage: +5V @ 30mA
- 50 Ohm Matched Input / Output
- Size: 0.63" x 0.59" x 0.39"

Typical Applications

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

Electrical Specifications, TA = +25 °C, Vdd = +5V, Vgg = -5V, 50 Ohm System

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	5		12	12		20	GHz
Gain	11	13		10	12		dB
Gain Flatness		±0.8	±1.5		±1.0	±1.5	dB
Gain Variation Over Temperature (-45 to +85)		±0.5			±0.8		dB
Noise Figure		2.0	3.5		2.0	3.5	dB
Input VSWR		3			2.5		: 1
Output VSWR		1.6			1.6		: 1
Output 1dB Compression Point (P1dB)	13	15		13	15		dBm
Saturated Output Power (Psat)		16			16		dBm
Output Third Order Intercept (IP3)		26			27		dBm
Supply Current (Vdd=+5V)		30	50		30	50	mA
Isolation S12		-23			-23		dB
Weight	1.06						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA - Female						
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	copper						
Package Sealing	Epoxy Sealing (Standard)						
	Hermetically Sealed (Option with extra charge)						

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Absolute Maximum Ratings

Operating Voltage	+5.5V, -5.5V
RF Input Power (RFin) (Vcc= +5V)	+13dBm

Biasing Up Procedure

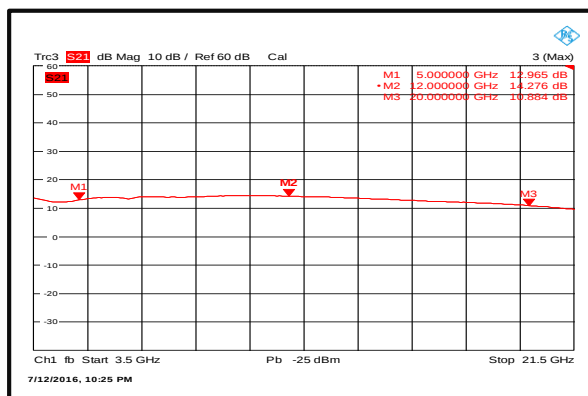
Step 1	Connect Ground Pin
Step 2	Connect input and output
step3	Connect -5V biasing
Step 4	Connect +5V biasing
Power OFF Procedure	
Step 1	Turn off +5V biasing
Step 2	Turn off -5V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

Environmental Specifications

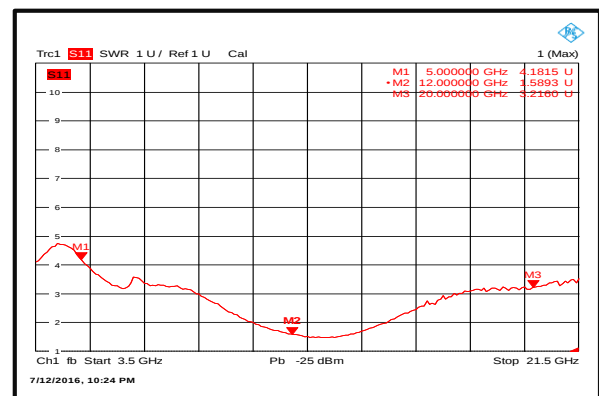
Operational Temperature (°C)	-45 to +85
Storage Temperature (°C)	-55 to +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Typical Performance Plots

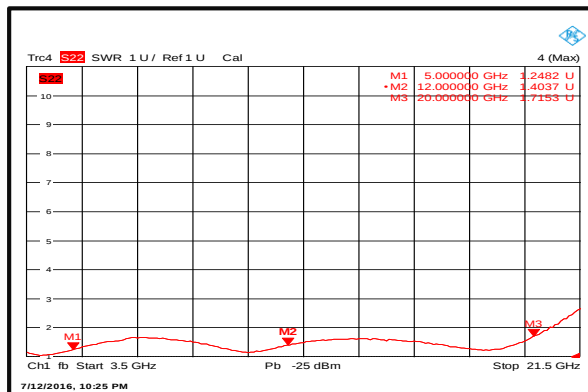
Gain



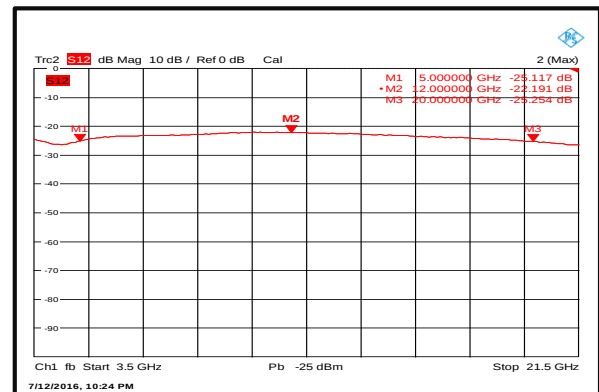
Input VSWR



Output VSWR



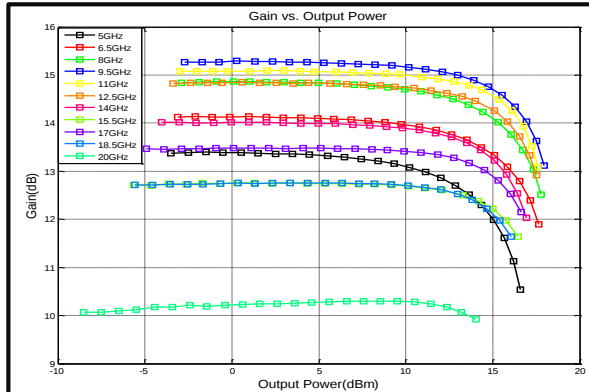
Isolation



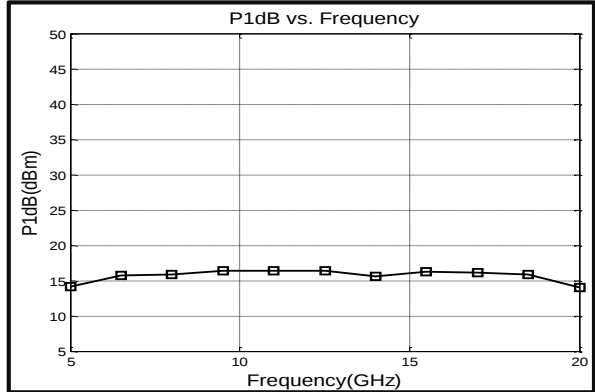
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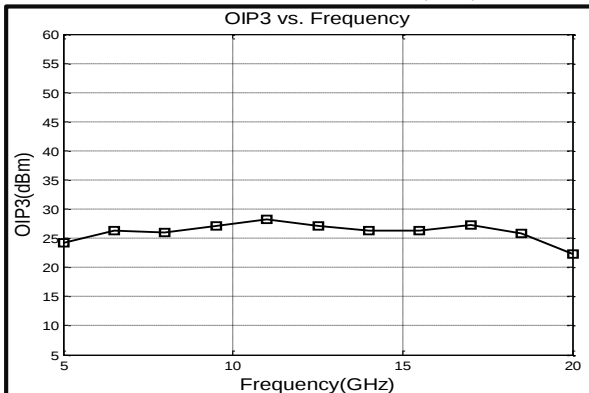
Gain vs. Output Power



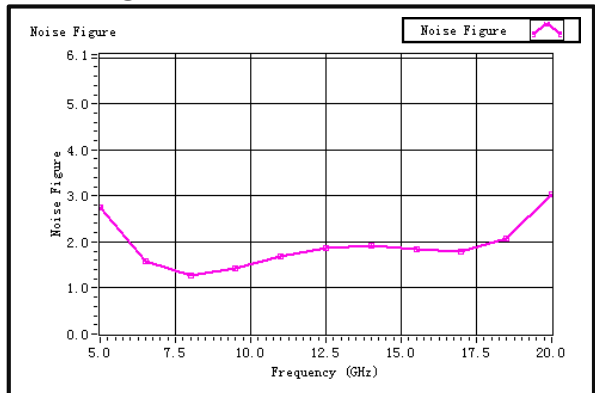
P1dB vs. Frequency



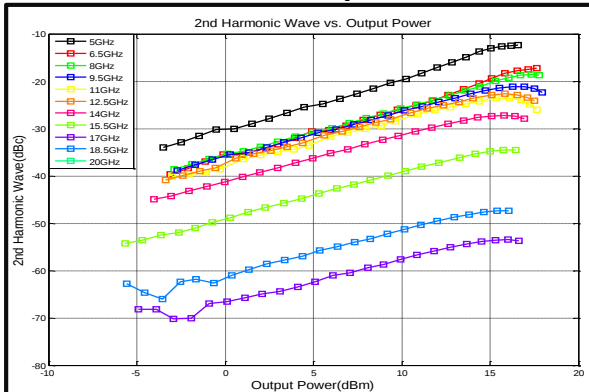
Output Third Order Intercept (IP3)



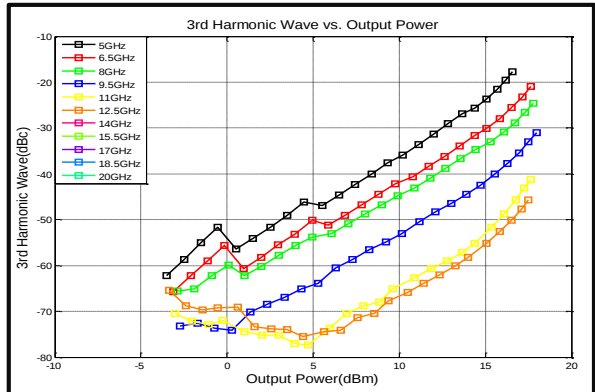
Noise Figure



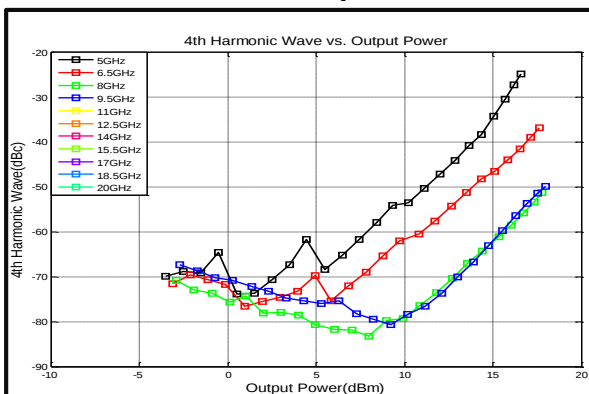
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

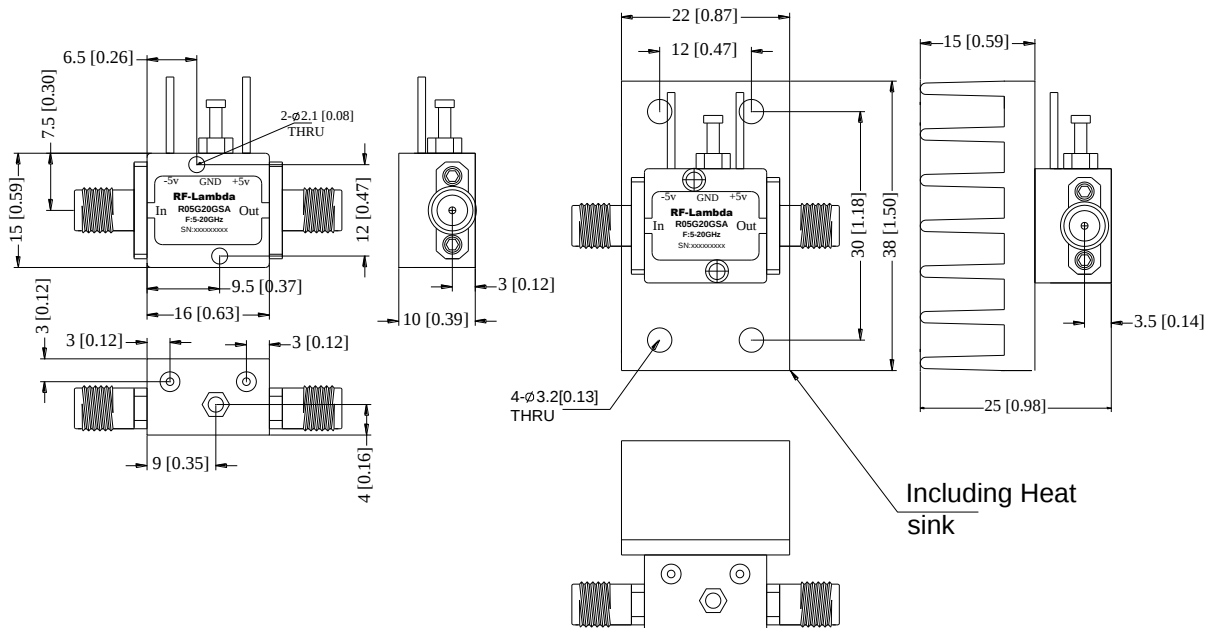




Outline Drawing:

All Dimensions in mm [inches]

Heat Sink Required During Operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
R05G20GSA	EAR99	5-20GHz Low Noise Amplifier

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