



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

R03M03GSB

Ultra Wide Band Low Noise Amplifier 0.3GHz ~ 3GHz



Features

- Gain: 15dB Typical
- Noise Figure: 1.5dB Typical
- P1dB Output Power: +21dBm Typical
- Supply Voltage: +5V

Typical Applications

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

Electrical Specifications, TA = +25°C, Vcc = +5V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	units
Frequency Range	0.3		1	1		2	2		3	GHz
Gain	12	15		10	13		6	9		dB
Gain Flatness		±0.8			±1.5			±1.5		dB
Gain Variation Over Temperature (-45 to +85)		±0.3			±0.3			±0.4		dB
Noise Figure		2.0	2.5		1.6	2.5		1.5	2.8	dB
Input Return Loss		5			8			13		dB
Output Return Loss		7			9			9		dB
Output 1dB Compression Point (P1dB)	20	21		20	21		20	21		dBm
Saturated Output Power (Psat)		23			23			23		dBm
Output Third Order Intercept (OIP3)		28			28			28		dBm
Supply Current (Vcc=+5V)		90	110		90	110		90	110	mA
Isolation S12		-20			-18			-16		dB
Weight	0.35									ounces
Impedance	50									Ohms
Input / Output Connectors	SMA-Female									
Finish	Gold Plated									
Material	Aluminum									
Package Sealing	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Operating Voltage	+6V
RF Input Power	15dBm

Biasing Up Procedure

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



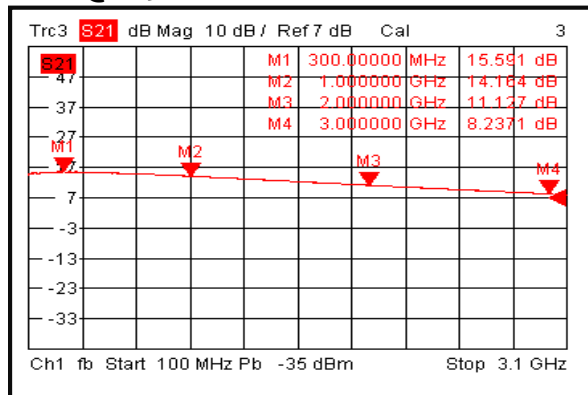
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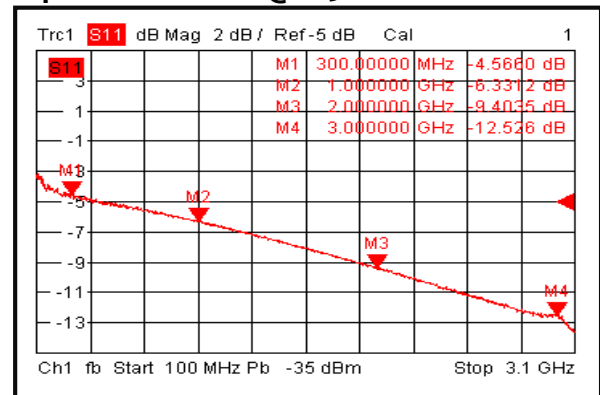
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Typical Performance Plots

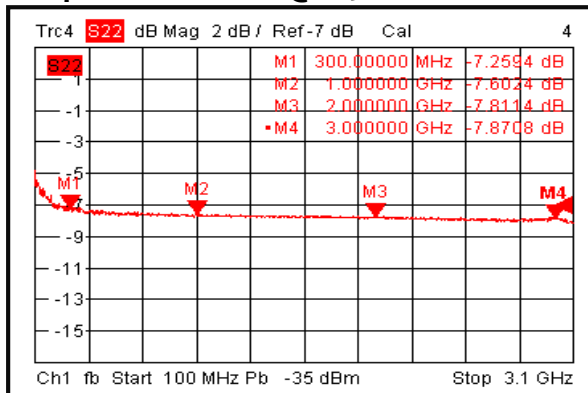
Gain @+25°C



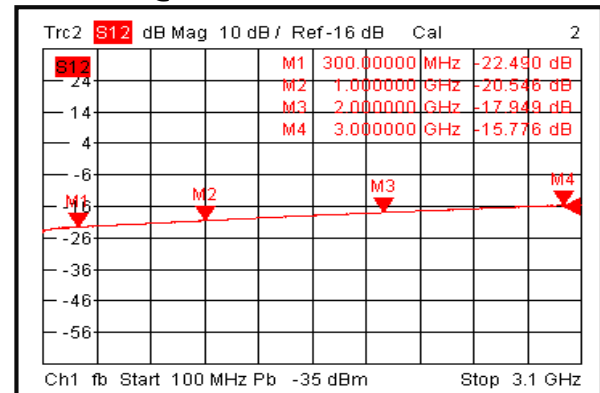
Input Return Loss @+25°C



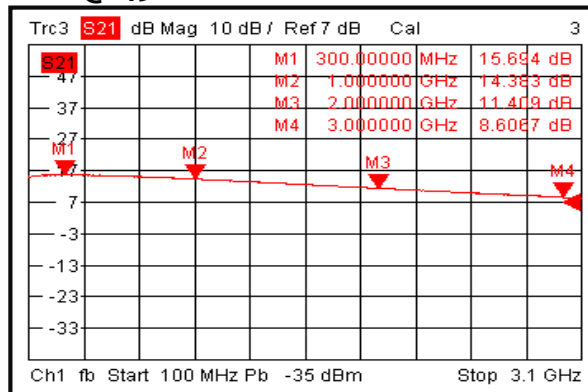
Output Return Loss @+25°C



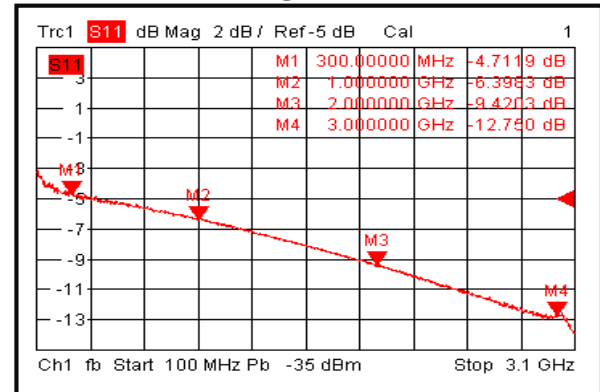
Isolation @+25°C



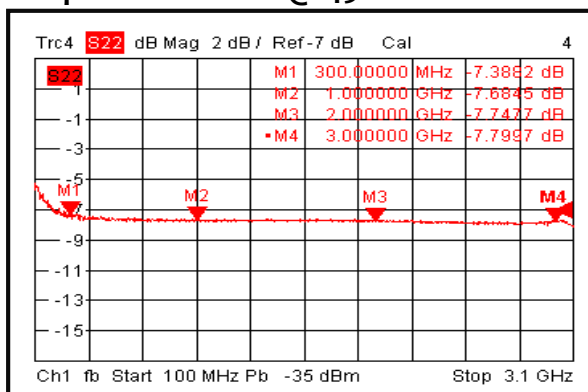
Gain @-45°C



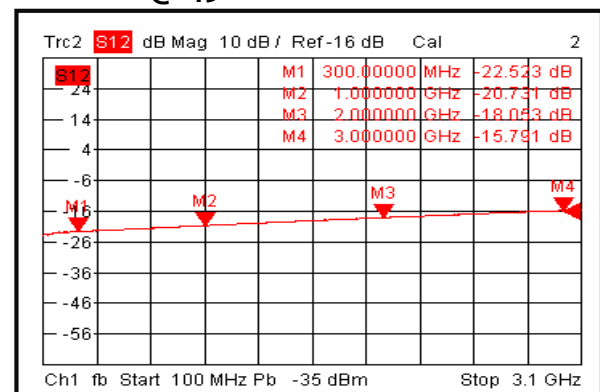
Input Return Loss @-45°C



Output Return Loss @-45°C



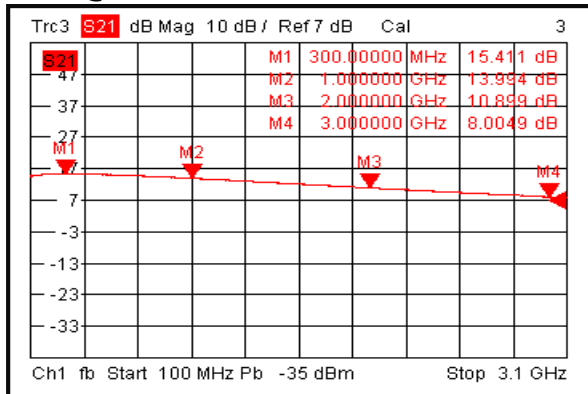
Isolation @-45°C



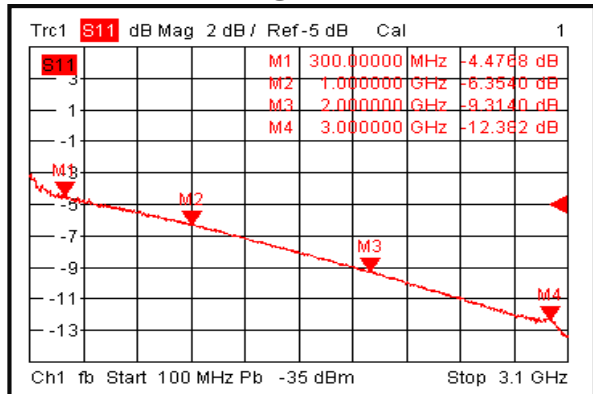
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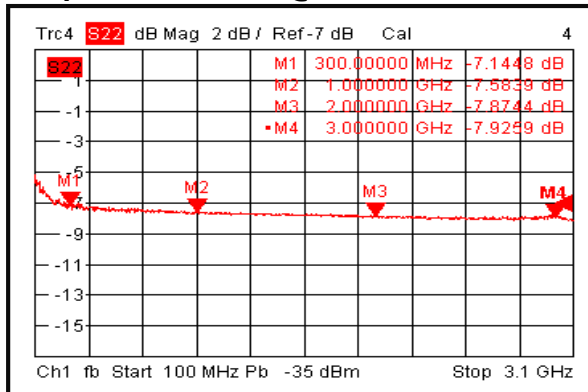
Gain @+85°C



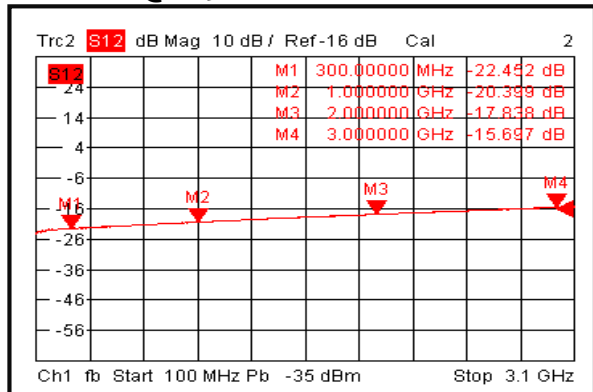
Input Return Loss @+85°C



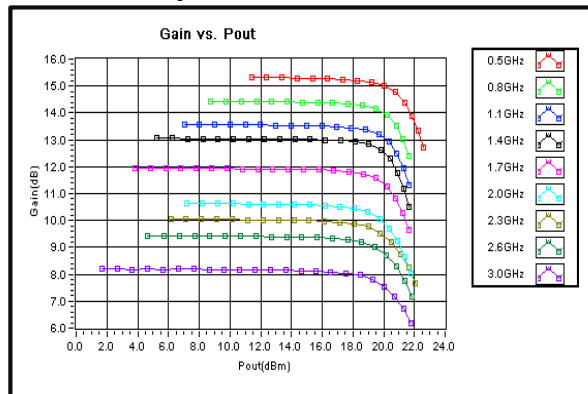
Output Return Loss @+85°C



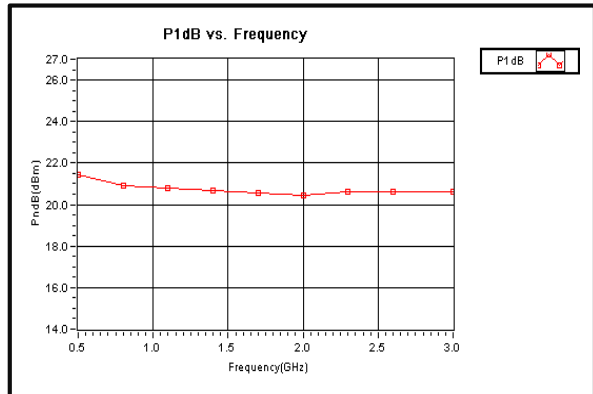
Isolation @+85°C



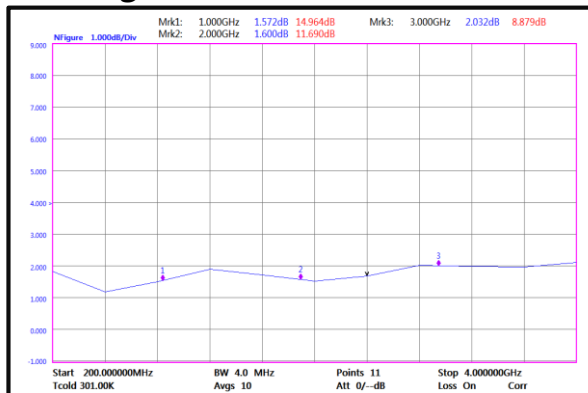
Gain vs. Output Power



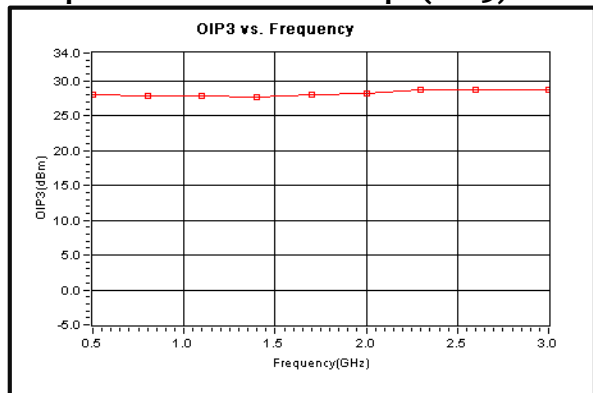
P1dB vs. Frequency



Noise Figure

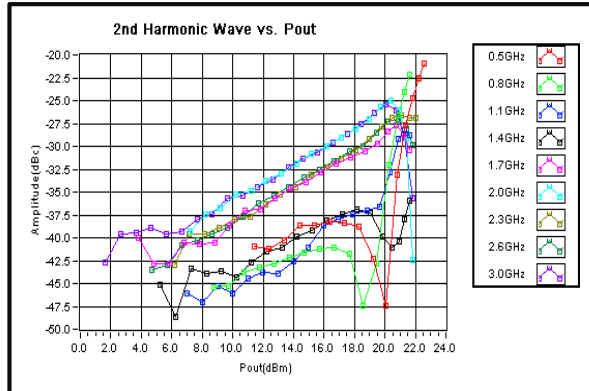


Output Third Order Intercept (OIP3)

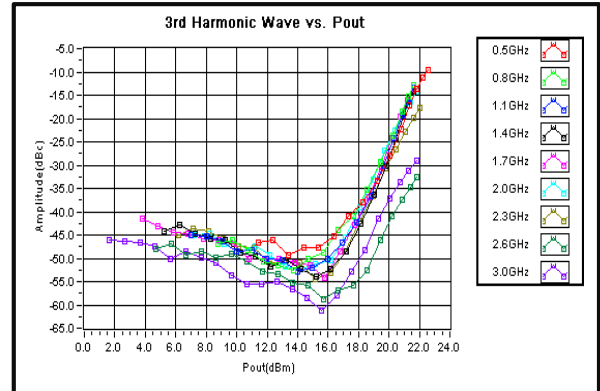




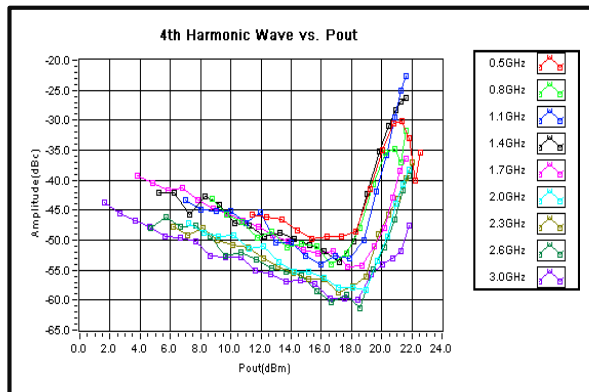
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



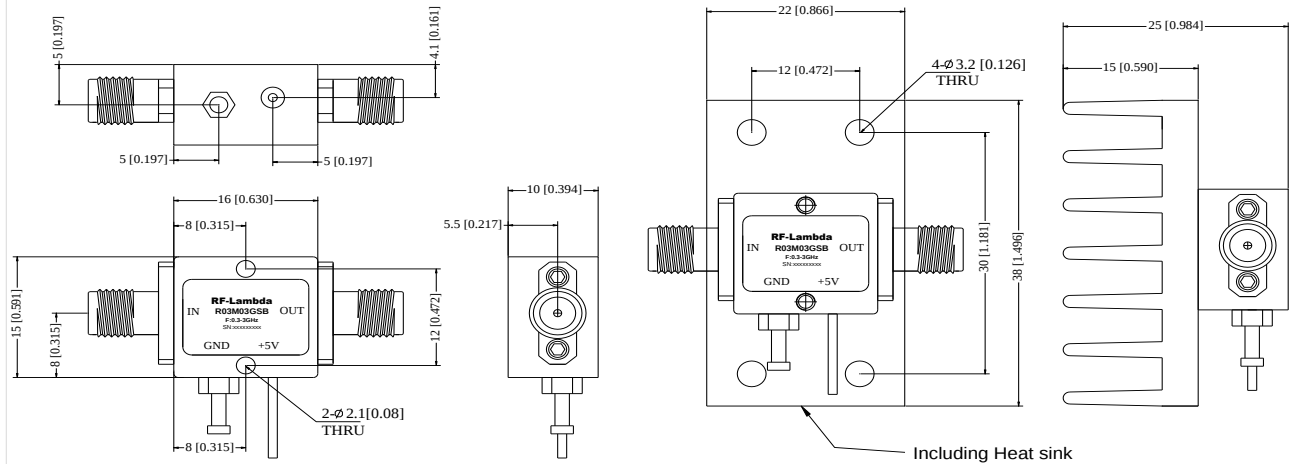
4th Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



Ordering Information

Part No.	ECCN	Description
R03M03GSB	EAR99	0.3-3GHz Low Noise Amplifier

Important Notice

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