



Low Noise Amplifier

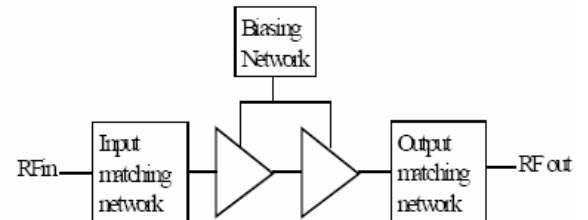
RGLNA11

Description

The **RGLNA11** is a broadband high efficiency GaAs Enhancement mode pHEMT Low Noise Amplifier. The device is designed for use in the 802.11a/b/g and WLAN MIMO system.

The LNA covers a wide range of frequency from 2 to 6 GHz. The noise figure is 1.7 dB at 2.3 GHz, 1.5 dB at 3.5 GHz and 1.5 dB at 5.5 GHz. Currently the die size is **0.875 mm x 1mm**. A single 3.3V and 37 mA current bias the LNA. No input and output matching components are required.

Functional Diagram



Applications

- IEEE 802.11 a/b/g WLAN
- Cellular System
- WiFi Systems
- ISM Band Systems

Key Features

- Broadband Amplifier
- Min. Noise Figure 1.1 dB
- High Performance
- Only one 40 pF off chip Bypass Capacitor is required

Electrical Specification

Conditions: $V_{cc} = 3.3\text{ V}$ & $T_A = 25\text{ }^\circ\text{C}$

Parameter	Min	Typical	Max	Units
Frequency	2		6	GHz
Gain				
@ 2.3 GHz		27		dB
@ 3.5 GHz		24		dB
@ 5.5 GHz		20		dB
Noise Figure				
@ 2.3 GHz		1.7		dB
@ 3.5 GHz		1.5		dB
@ 5.5 GHz		1.5		dB
Power Output (P1dB)				
@ 2.0 GHz		10		dBm
@ 4.0 GHz		11		dBm

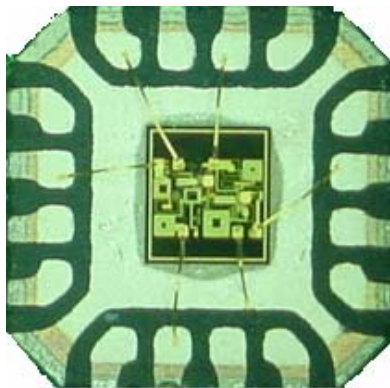


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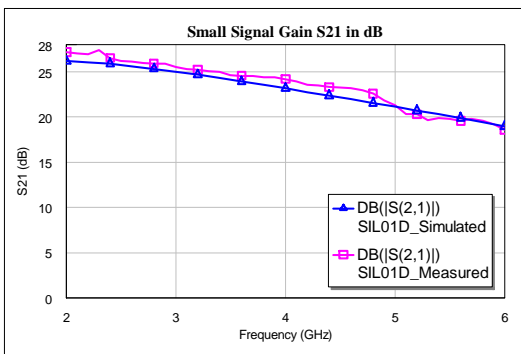
OIP3				
@2.0 GHz		20		dBm
@4.0 GHz		21		dBm
Input Return Loss		5		dB
Output Return Loss		10		dB
Supply Current		37		mA
DC Voltage		3.3		V

Die Photograph in open cavity 4x4 QFN Package

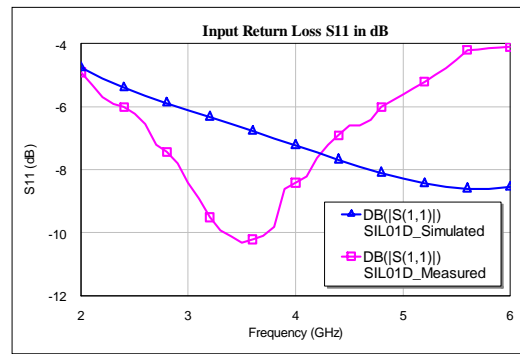


Simulated and Measured results

Gain Vs Freq



Input Return Loss Vs Freq



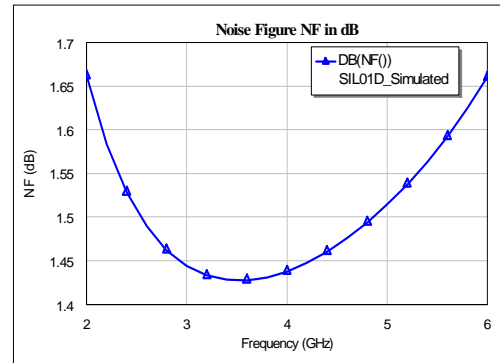
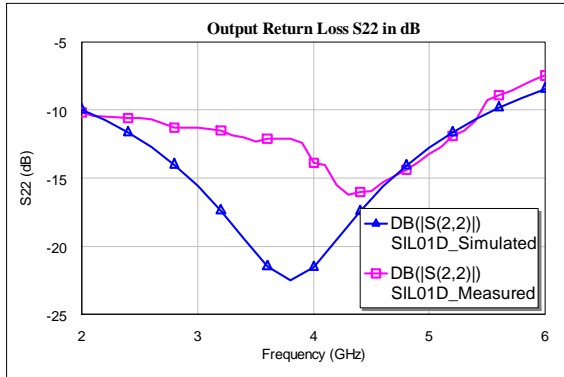
Output Return Loss Vs Freq

Noise Figure Vs Freq (Simulated)



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Layout (0.875 mm x 1.0 mm)

