Low Noise Amplifier

RGLNA01

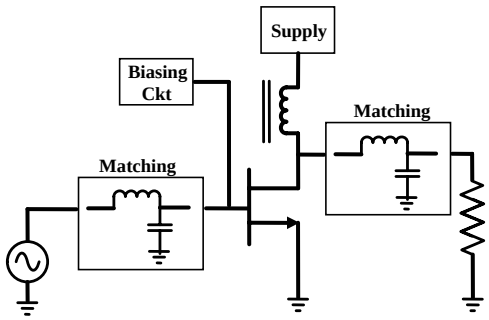
Description

The **RGLNA01** is 0.7 to 3.0 GHz high efficiency GaAs Enhancement mode pHEMT Low Noise Amplifier IP Block .The device is designed for use in the IEEE 802.11b/g, PCS, PHS and Cellular system.

The die area of RGLNA01 is 0.8 mm x 0.7 mm, with on chip input and output matching components. This makes it suitable for being packed in small QFN Packages. It requires a single +3.0 Volt supply and consumes only 15 mA current.

There is good match between the measured and simulated results as shown below.

Functional Diagram



Applications

- IEEE 802.11 b/g WLAN
- PCS and PHS System
- Cellular System
- WiFi Systems
- ISM Band Systems

Key Features

- Low Current, Low Cost
- Noise Figure is 1.55 dB @ 1 GHz
- Can be optimized for a narrow band operation with off chip matching

Electrical Specification

Conditions: Vcc = 3 V & T_A=25 ^{0}C

Parameter	Min	Typical	Max	Units
Frequency Range	0.7		3	GHz
Gain		15		dB
Input Return Loss		8		dB
Output Return Loss		9		dB
Noise Figure		1.5		dB
Power Output (P1dB)		14		dBm
Supply Voltage		3		V
Supply Current		15		mA

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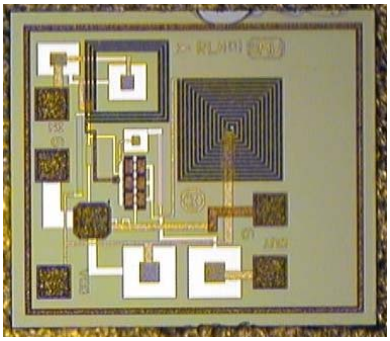
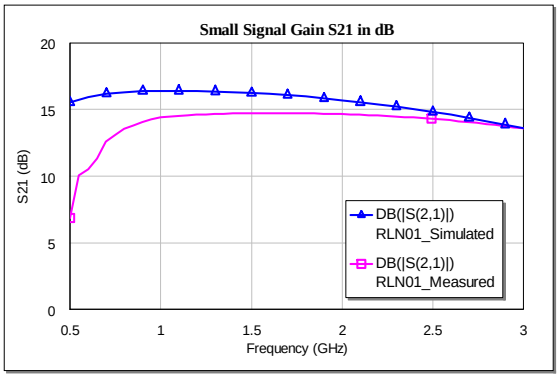
Die Photograph (0.8 mm x 0.7 mm)

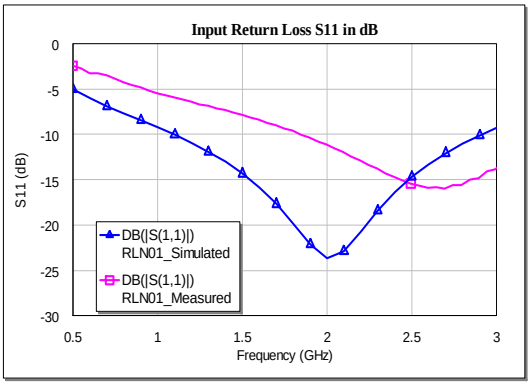


Simulated and Measured results

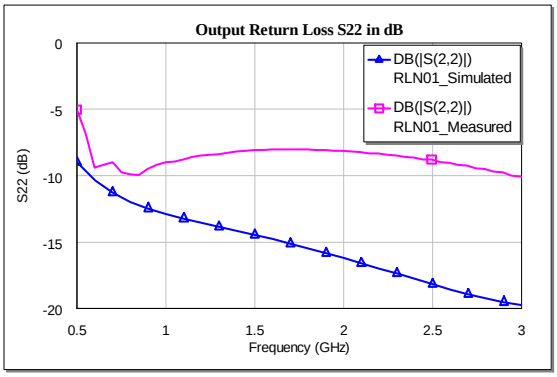
Gain Vs Freq



Input Return Loss Vs Freq



Output Return Loss Vs Freq



Noise Figure Vs Freq (Simulated)