



### Low Noise Amplifier

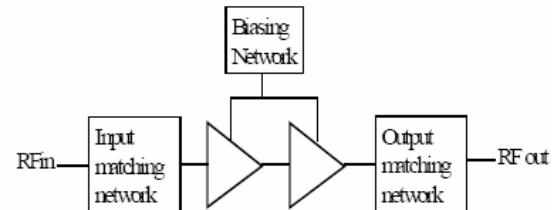
RGLNA06

#### Description

The **RGLNA06** is a broadband high efficiency GaAs Enhancement mode pHEMT Low Noise Amplifier. The MMIC Low Noise Amplifier doesn't require any off-chip component. The Broadband LNA is designed for the 802.11a/b/g/n system.

The LNA covers a wide range of frequency from 2.0 to 6.0 GHz. The noise figure is 1.5 dB at 2.4 GHz, 1.7 dB at 3.5 GHz and 2.2 dB at 5.5 GHz. Currently the die size is 1mm x 1mm. A single 3.3 V and 14 mA current bias the LNA.

#### Functional Diagram



#### Applications

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

#### Key Features

- Broadband Amplifier
- Low noise as low as 1.5 dB
- Low Current, Low Cost

#### Electrical Specifications

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

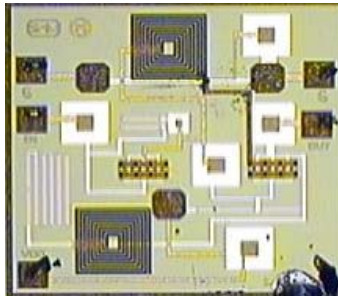
Parameter	Min	Typical	Max	Units
Frequency	2.0		6.0	GHz
Gain				
@2.4 GHz		30		dB
@3.5 GHz		26		dB
@5.5 GHz		20		dB
Noise Figure				
@2.4 GHz		1.5		dB
@3.5 GHz		1.7		dB
@5.5 GHz		2.2		dB
Input Return Loss		6.5		dB
Output Return Loss		10		dB
Supply Current		14		mA
DC Voltage		3.3		V



Low Noise Amplifier

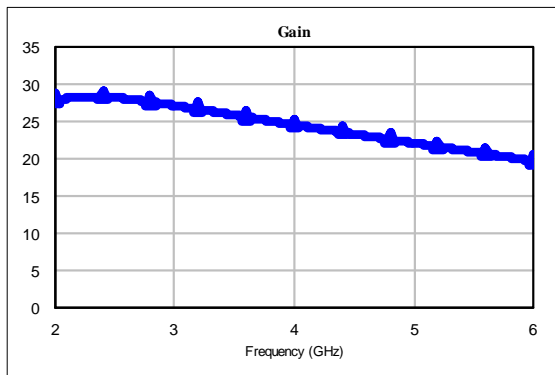
RGLNA06

Die Photograph (1 mm x 1 mm)

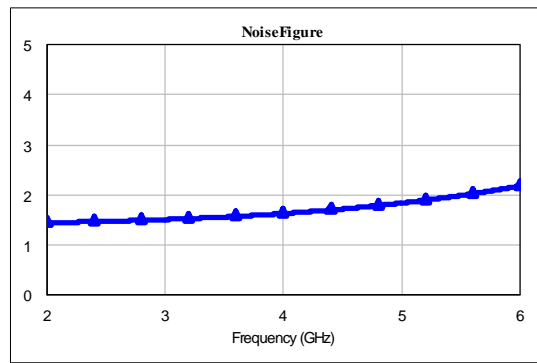


Simulated results

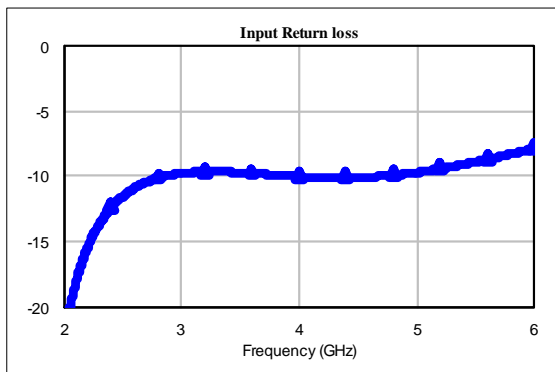
Gain Vs Freq



Noise Figure Vs Freq



Input Return Loss Vs Freq



Output Return Loss Vs Freq

