



Low Noise Amplifier

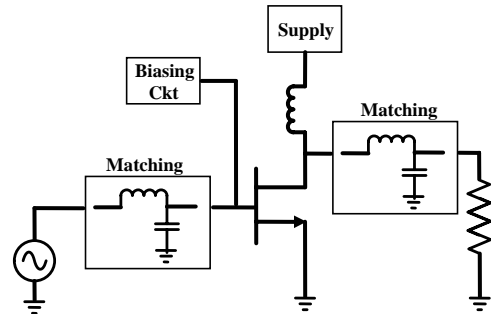
RJL01

Description

The **RJL01** is 1.5 to 1.7 GHz, Low Noise Amplifier IP Block. The LNA is designed on the 0.18um SiGe BiCMOS Process. The device is designed for GPS system. The LNA has provision for mode control to turn off.

It requires a single +3.0 Volt supply and consumes only 12 mA current. The simulated noise figure is 0.5 at 1.575 GHz.

Functional Diagram



Applications

- GPS System Application

Key Features

- 1.5 GHz to 1.7 GHz frequency range covered
- 0.5 dB Noise Figure at 1.575 GHz
- On chip Mode control to turn ON/OFF the LNA

Electrical Specification

Conditions: $V_{cc} = 3.0\text{ V}$ & $T_A = 25\text{ }^\circ\text{C}$

Parameter	Min	Typ	Max	Unit
Operating Freq	1500	1575	1625	MHz
Gain		14.5		dB
Noise Figure		0.5		dB
Stability		Unconditionally stable		
Input return loss		20		dB
Output return loss		12		dB
Reverse isolation		20		dB
Supply Current		11.25		mA
Supply Voltage		3		V

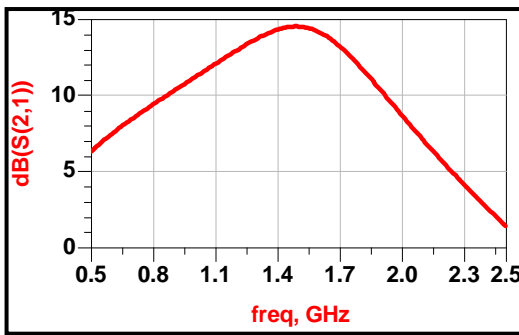


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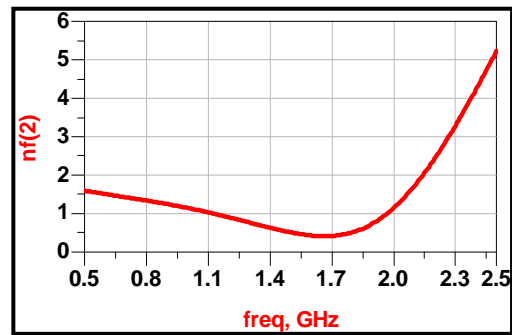
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Simulated Results

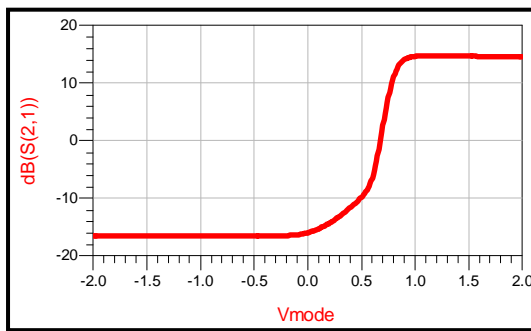
Gain Vs Freq



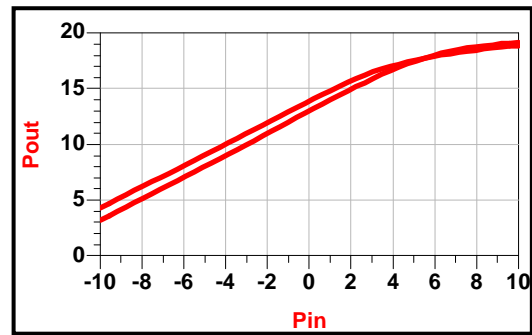
Noise Figure Vs Freq



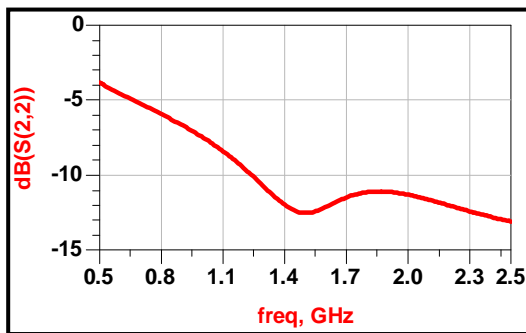
Gain vs Mode control Voltage



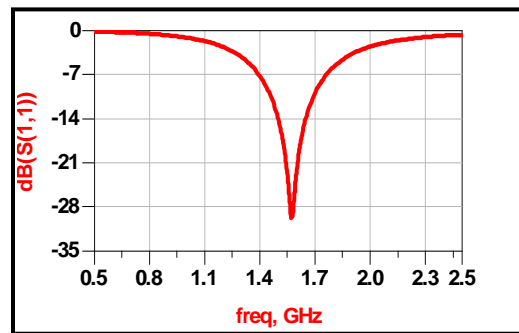
Pout vs Pin



Output Return Loss Vs Freq



Input Return Loss Vs Freq





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Layout

