



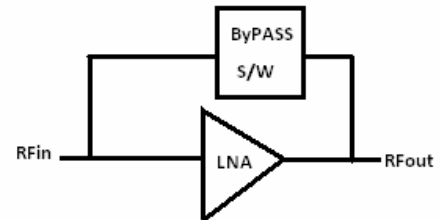
GPS LNA with bypass switch

RLGPS01

Description

The **RLGPS01** (GPS_LNA with Bypass Switch) is 1.5 – 1.625 GHz narrow band Low Noise Amplifier IP Block. The LNA is designed using 0.5 um GaAs Enhancement mode psuedomorphic high electron mobility transistor (pHEMT). The device is designed for GPS system Application.

The LNA die area is 0.8 mm x 0.9 mm. It requires a single +3.0 Volt supply to operate and consumes 12.7 mA current.



Applications

- GPS Receivers

Key Features

- High Performance
- Low Current
- Noise Figure: 1.3dB @ 1.56 GHz

Conditions: $V_{cc} = 3\text{ V}$ & $T_A = 25\text{ }^\circ\text{C}$

Parameter	Min	Typical	Max	Units
Frequency Range	1500	1560	1625	MHz
Gain		14.2		dB
Loss in bypass mode		2.8		dB
P1dB (out) @ 1575 MHz		10.8		dBm
Noise Figure @ 1575 MHz		1.3		dB
Input Return Loss		14.7		dB
Output Return Loss		25.5		dB
Supply Current		12.7		mA
Supply Voltage		3		V

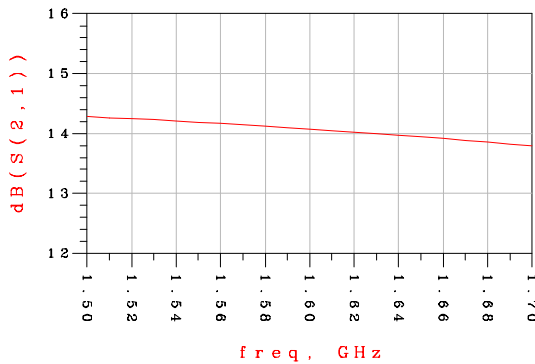


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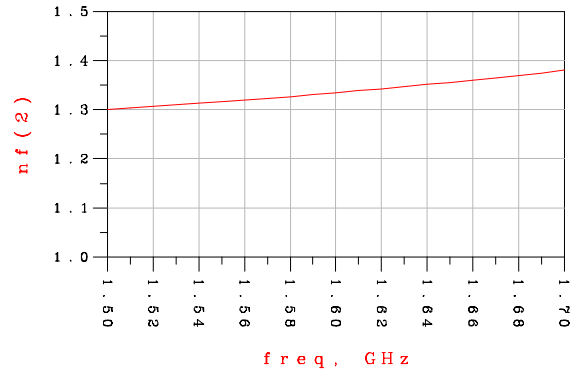
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Simulated Results

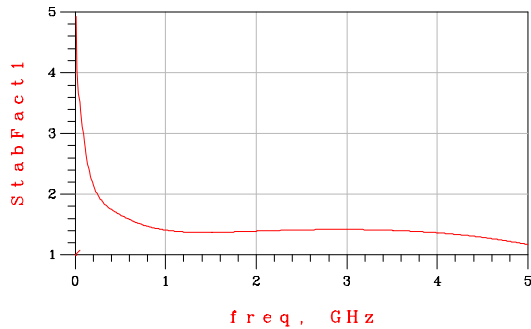
Gain Vs Freq



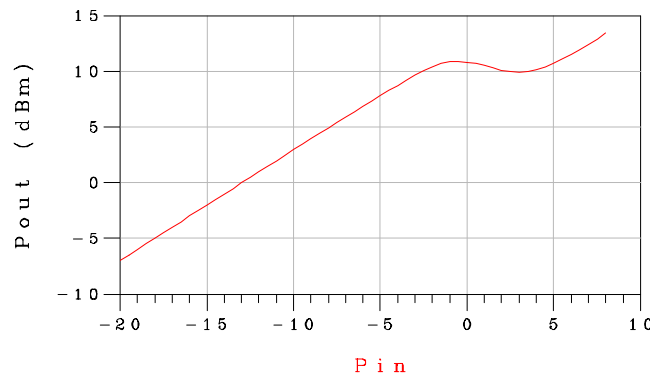
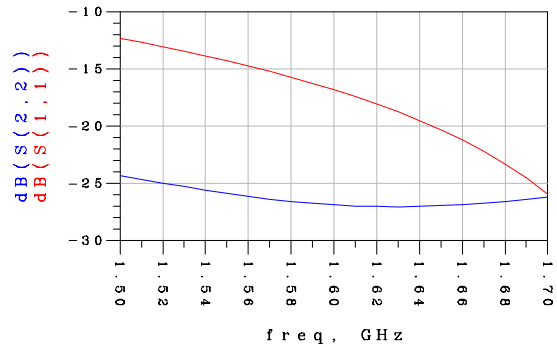
Noise Figure Vs Freq



Stability Factor Vs Freq



Return Losses



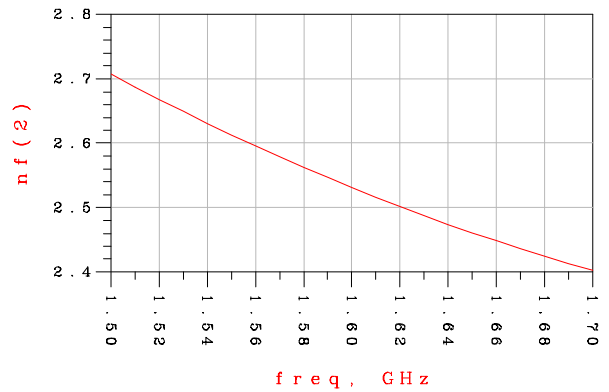
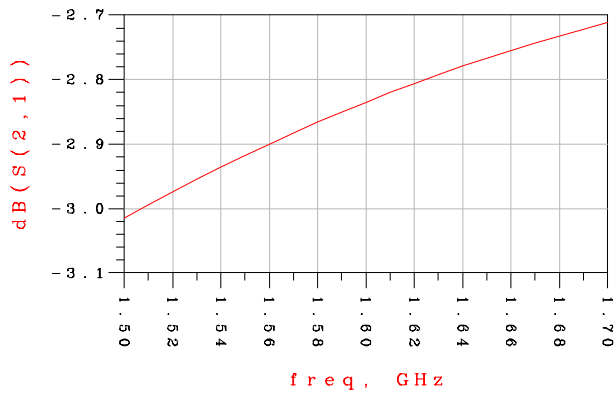


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Bypass Mode:

Vcontrol= 0.7V, Vcc= 0V, Icontrol= 3uA



Layout

