



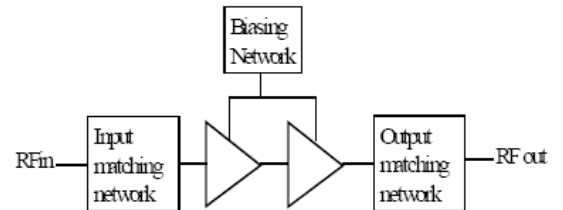
Low power, wideband Driver Amplifier

RDAT01

Description

The **RDAT01** is a 2.0 to 10.0 GHz, tunable, low power output, wideband driver amplifier structure, designed using 0.5um GaAs E-pHEMT process. It requires +3.3 Volt supply and 70.5mA current. It has extremely small die area and wide tuning range by using some off chip components.

Functional Diagram



Applications

- IEEE 802.11 b/g/a WLAN
- WiMax standard

Key Features

- High Gain
- Wide band operation
- Tunable
- Small Size

Electrical Specification

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

Parameter	Min	Typical	Max	Units
Frequency Range	2		10	GHz
Gain	11	14.7	12.7	dB
Gain flatness		2		dB
Noise Figure	6	6.2	8	dB
Input Return Loss	3	8	16	dB
Output Return Loss	6	10	8	dB
Pout (P1dB)	8.5	13.2	17.2	dBm
Supply Voltage		3.3		V
Supply Current		70.5		mA



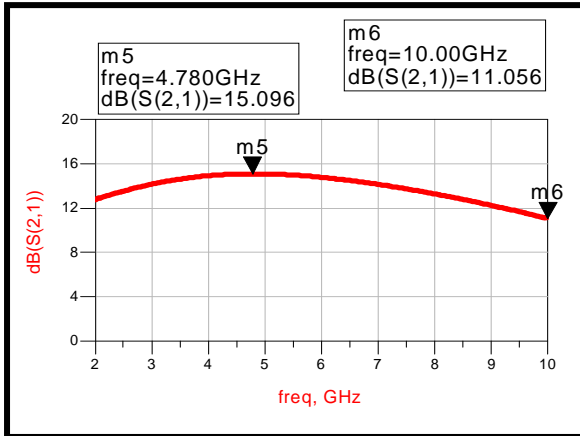
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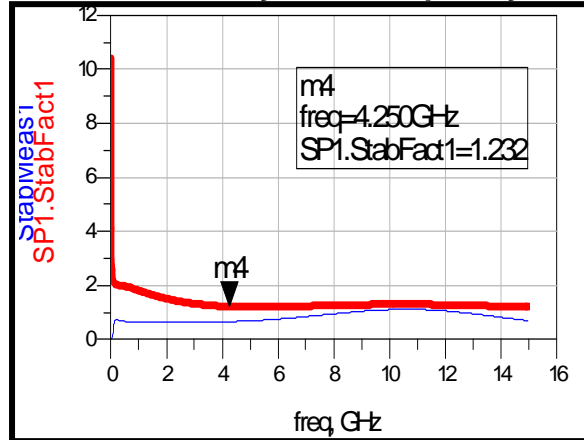
Simulated Results

Small Signal Analysis Results

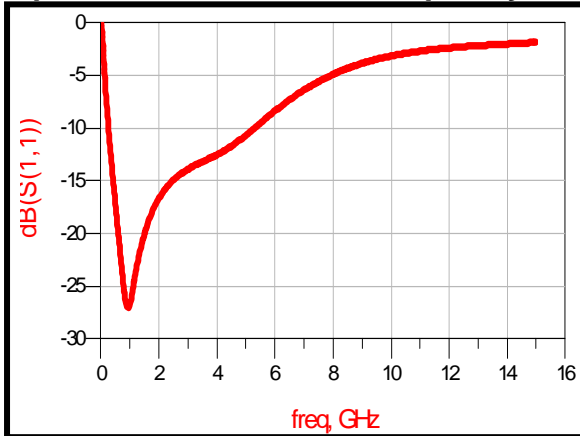
Gain over Frequency



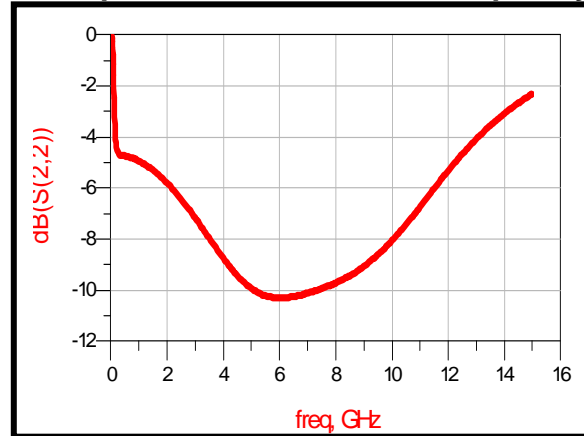
Stability over Frequency



Input Return Loss over Frequency



Output Return Loss over Frequency

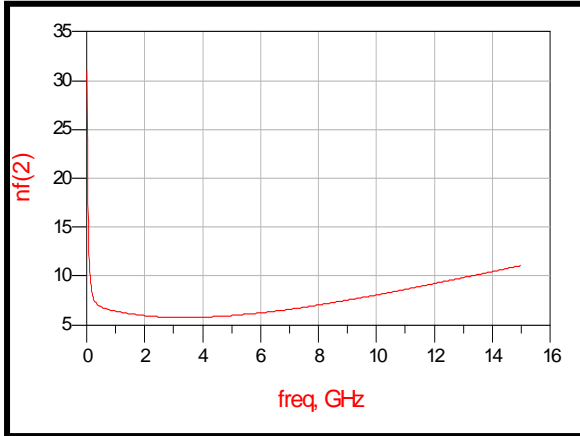




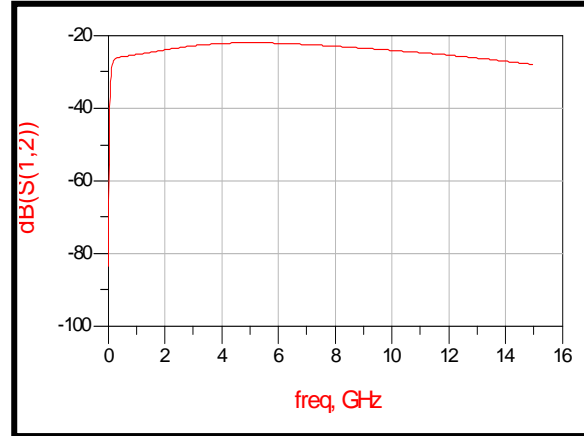
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Noise Figure over Frequency

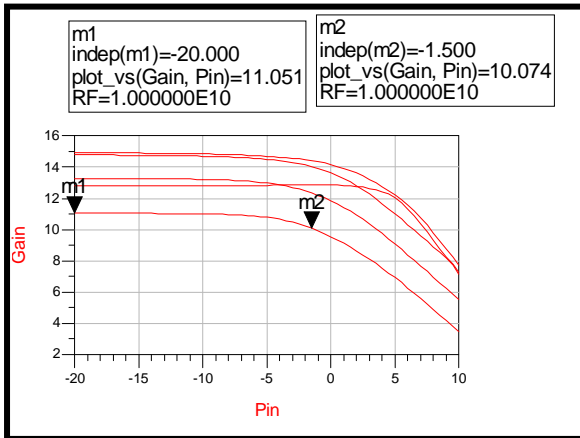


Isolation Loss over Frequency

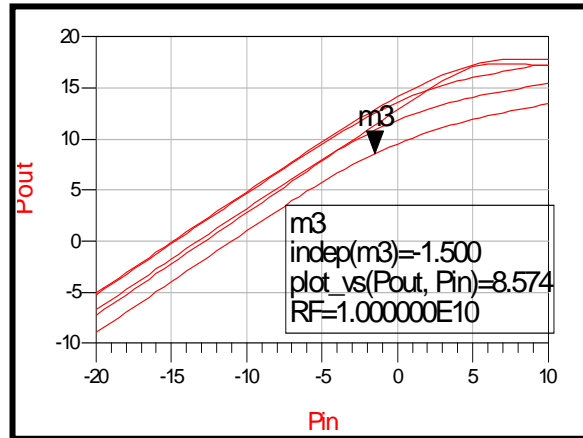


HB Simulation Results

Gain over Input Power



P1dB Pout





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Layout:

The die area of RDAT01 is 0.6 mm X 0.45 mm.

