Power Amplifier

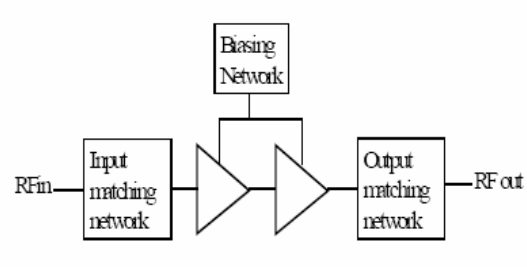
RGPA04

Description

The **RGPA04** is a 4.9 to 5.9 GHz high efficiency GaAs Enhancement mode psuedomorphic high electron mobility transistor MMIC power amplifier. The device is designed for 802.11a WLAN system.

The part is matched at the input and output so no additional RF matching components are required. The PA exhibits unparalleled linearity and efficiency of 37 % for 802.11a WLAN systems. The part is biased by a single +3.3 V supply.

Functional Diagram



Applications

- IEEE 802.11 a WLAN
- WiFi Systems
- ISM Band Systems

Key Features

- High Performance
- Linear Gain around 28 dB
- PAE 37%
- Power Output at P1 dB compression is 26 dB

Electrical Specification

Conditions: Vcc = 3.3 V & T_A=25 ^{0}C

Parameter	Min	Typical	Max	Units
Frequency Range	4.9		5.9	GHz
Gain	23	25		dB
Input Return Loss		10		dB
Output Return Loss		10		dB
Power Output P1dB		26		dBm
EVM @ 20dBm Pout		3.2		%
Efficiency		37%		%
Supply Current		300		mA
Power up control voltage	2.4		3.6	V
Power down control voltage	0		0.8	V
Power Detector output voltage (0dBm – 22dBm)	0		3.9	V
DC Voltage		3.3		V

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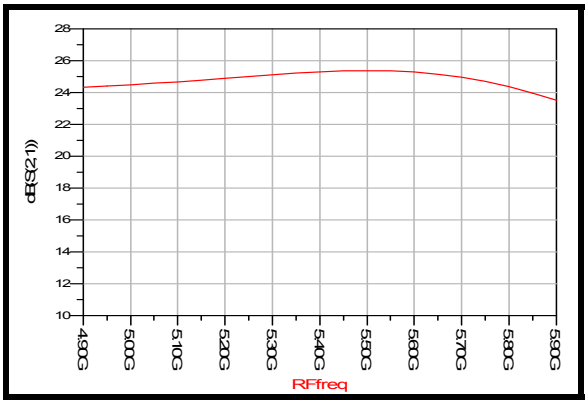
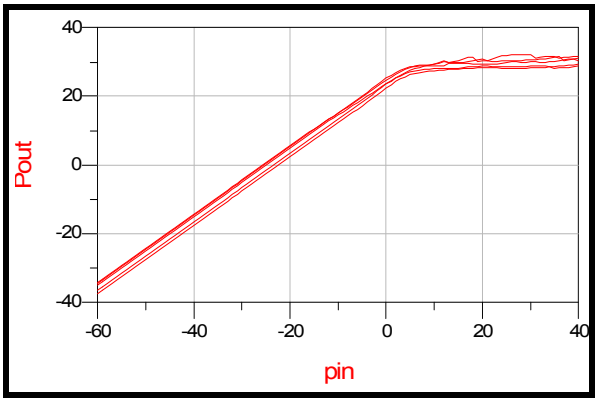
Simulated results

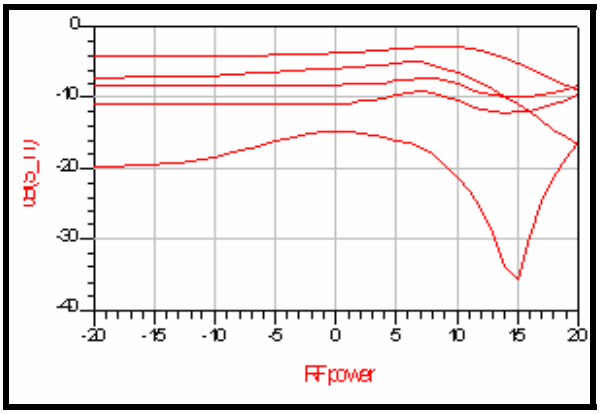
Small signal gain Vs Freq



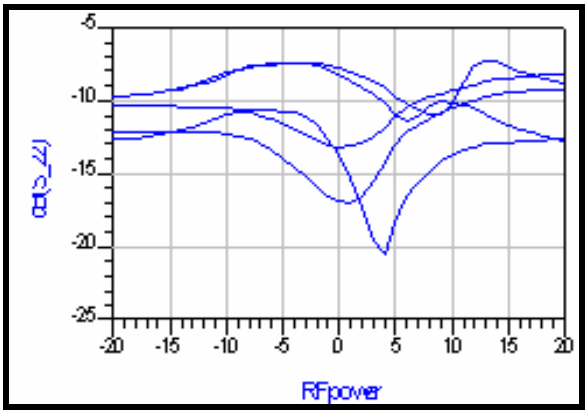
Pout Vs Pin



Input Return Loss Vs Power



Output Return Loss Vs Power



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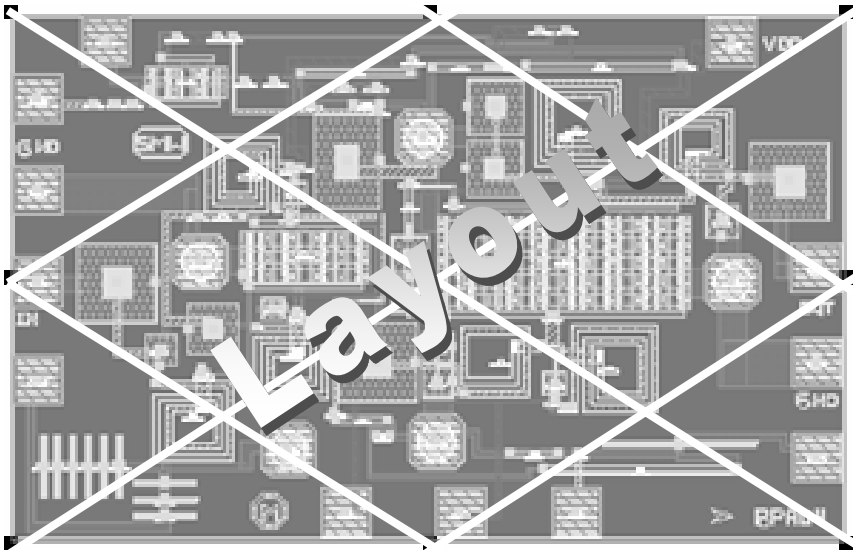
Layout



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