Power Amplifier

RGPA03

Description

The RGPA03 is a 3.4 to 3.6 GHz high efficiency GaAs Enhancement mode psuedomorphic high electron mobility transistor MMIC Power Amplifier. It has been designed for use in the 3.5 GHz WiMax systems.

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

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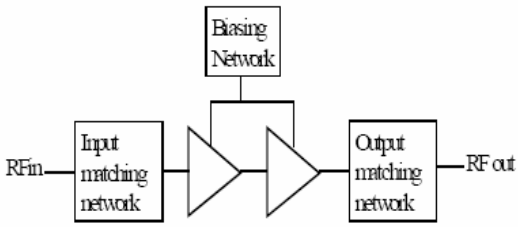

Applications

- WiMax Transceivers
- Broadband Wireless Application

Key Features

- High Gain, High Performance
- Linear Gain around 25 dB
- Output Power in the range of 20 dBm
- Small Die Area

Electrical Specification

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

	Min	Typical	Max	Units
Frequency	3.4		3.6	GHz
Gain		26	28	dB
EVM@20 dBm Pout		3		%
P1dB out		27		dBm
Input Return Loss		12		dB
Output Return Loss		12		dB
Supply Voltage		3.3		Volt
Supply Current		280		mA
Power up control voltage	2.4		3.6	V
Power down control voltage	0		0.8	V
Power detector output voltage (0dBm – 22 dBm)	0.5		3.9	V

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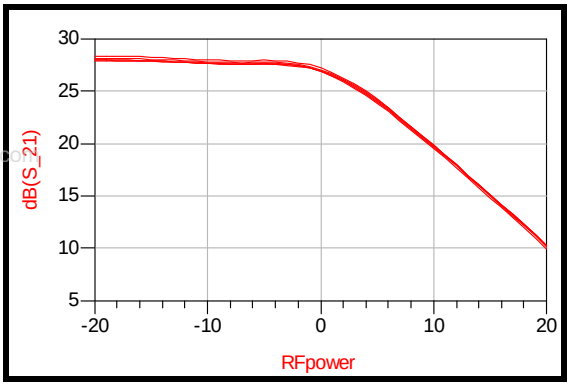
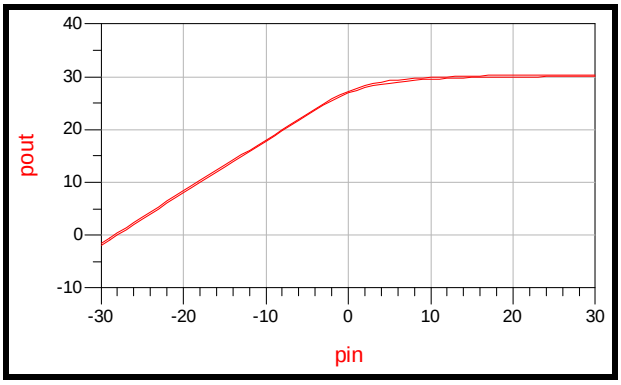
Simulated results

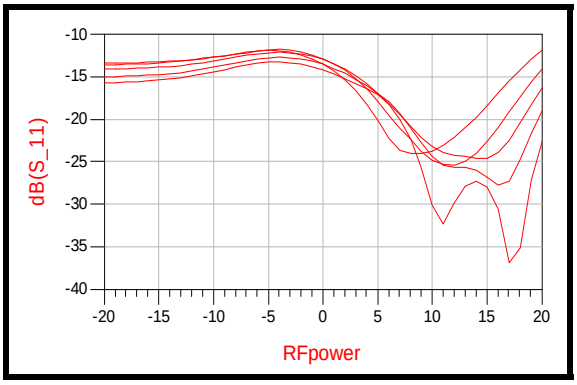
Gain Vs RF Power & Freq



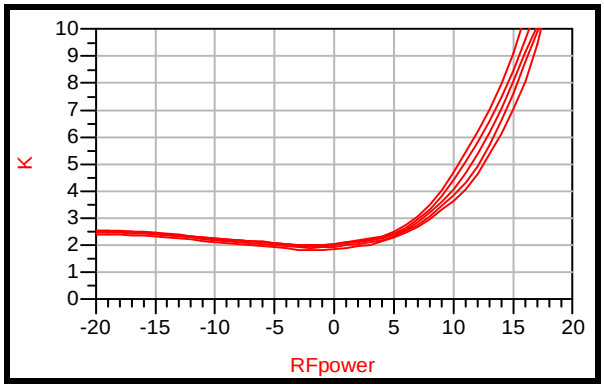
Pout Vs Pin



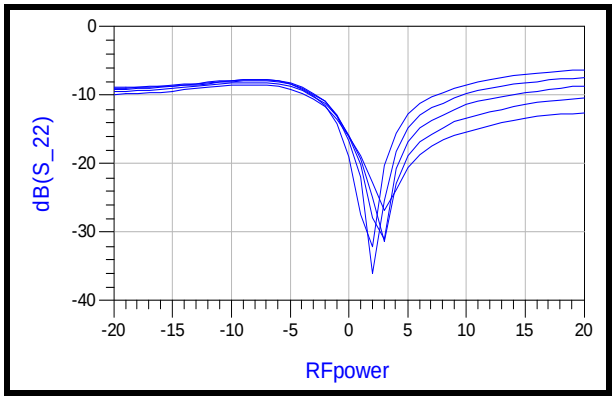
Stability Vs RF Power



Input Return Loss Vs RF Power



Output Return Loss Vs RF Power



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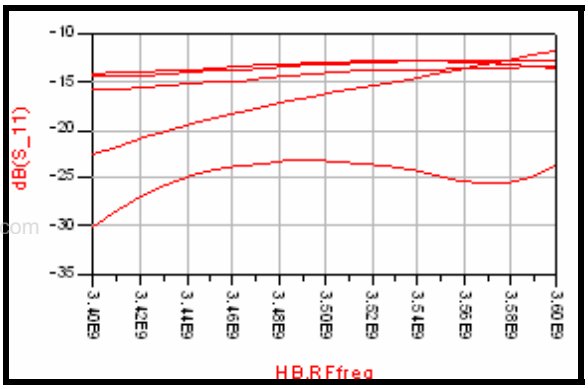
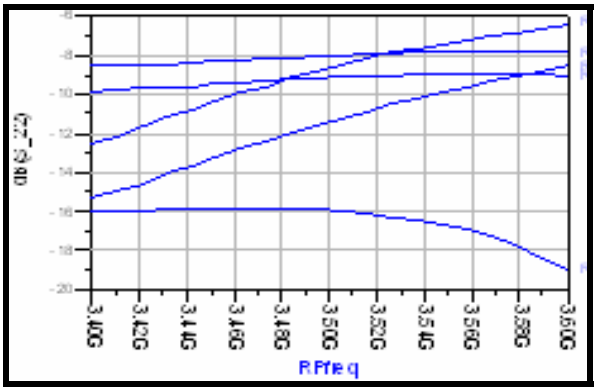
Input Return Loss Vs Freq



Output Return Loss Vs Freq



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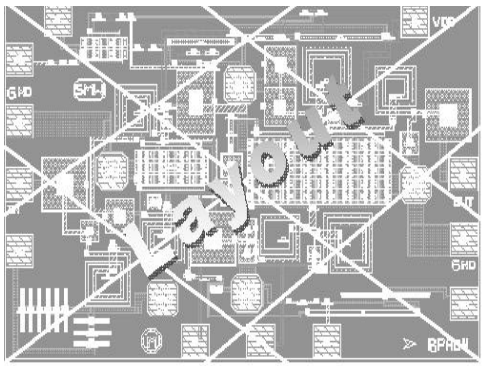
Layout



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