Power Amplifier

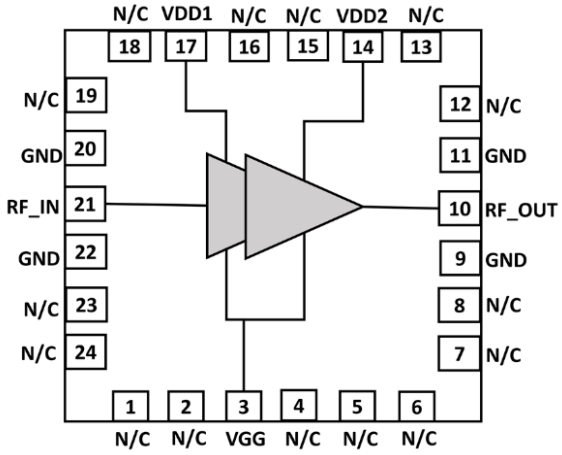
PRODUCT DATASHEET

RFPA06

Features:

- RF Frequency : 2 - 6 GHz
- Small signal gain : 13.33 dB
- Output P1dB : 25 dBm
- Saturated Output Power : 27.5 dBm
- DC drain bias voltage : 5 V
- DC gate bias voltage : - 0.3 V
- DC supply current : 320 mA
- 0.1um GaAs pHEMT Technology
- Die Size : 0.9 mm * 2.6 mm

Functional Block Diagram



Description:

RFPA06 is Two Stage Power Amplifier operates from 2 - 6 GHz and it is used to drive the high-power amplifier. The amplifier provides 13.33 dB of small signal gain. The input and output are matched to 50 ohms with on-chip DC blocking capacitors.

The device is specifically designed for use in 2-6 GHz frequency in Bluetooth, Zigbee, WiFi, IoT and SATCOM Application.

The Technology used to design PA is 0.1um GaAs pHEMT Process.

Pin Configuration

Pin No.	Pin Name	Description
1,2,4,5,6,7,8,12,13,15, 16,18,19,23,24	N/C	Not Connected
9,11,20,22	GND	Ground
17	VDD1	Drain Bias Voltage 1
14	VDD2	Drain Bias Voltage 2
3	VGG	Gate Bias Voltage
21	RF-IN	RF Input
10	RF-OUT	RF Output

Applications:

- Weather radar
- Microwave devices
- Communications
- Long-distance radio telecommunications
- Surface ship radar

Deliverables:

- Sample Ready Packaged Die
- Test Results
- Product Datasheet

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Electrical Specification:

Freq= 2 - 6 GHz, VDD1=VDD2= 5 V, VGG1= - 0.3 V, ID= 320 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	5.89
	4 GHz		13.33
	6 GHz		10.74
Output P1 dB	2 GHz	dBm	
	4 GHz		25
	6 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	
	4 GHz		38
	6 GHz		
Input Return Loss	2 GHz	dB	13.52
	4 GHz		17.64
	6 GHz		9.40
Output Return Loss	2 GHz	dB	11.86
	4 GHz		3.95
	6 GHz		1.58
Operating Bias Conditions			
Drain Current (Id)	-	mA	320
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.3

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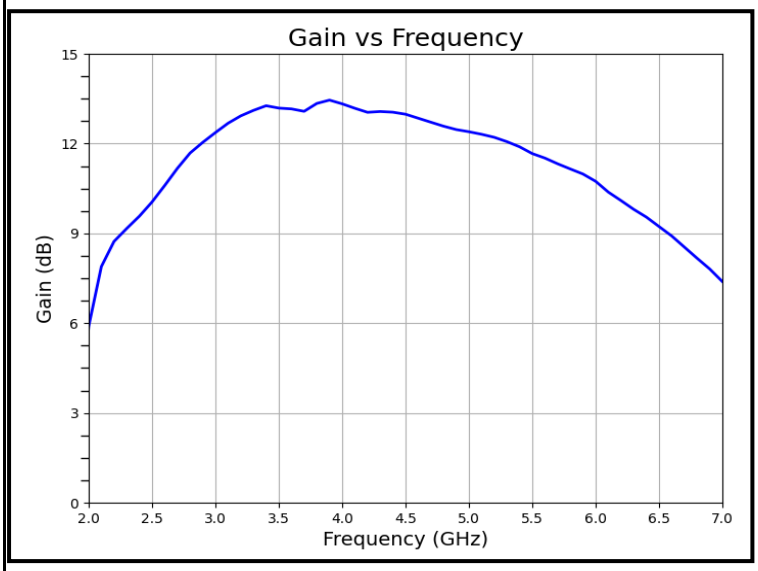
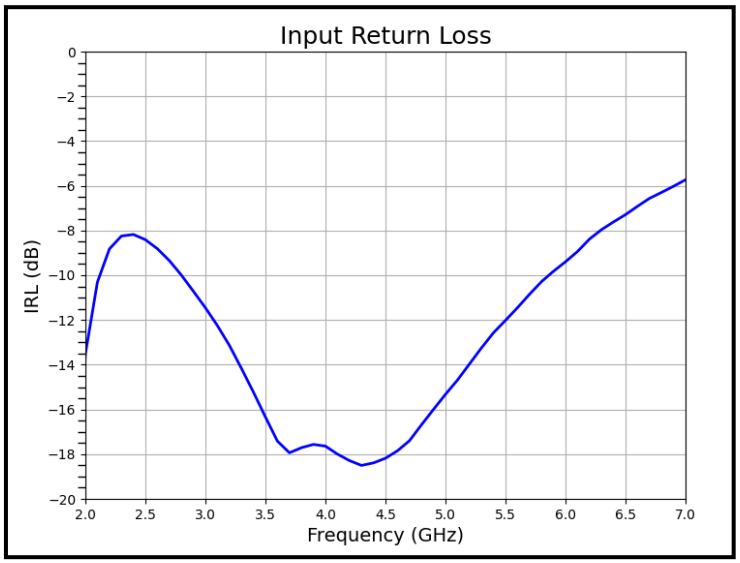
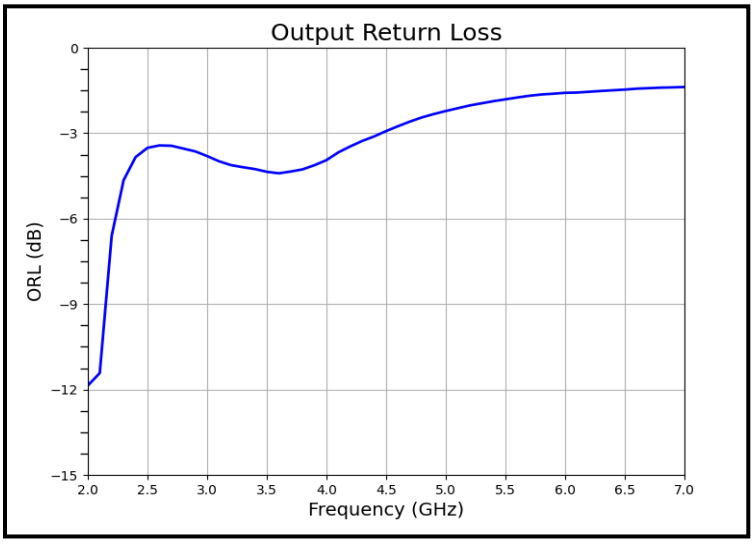
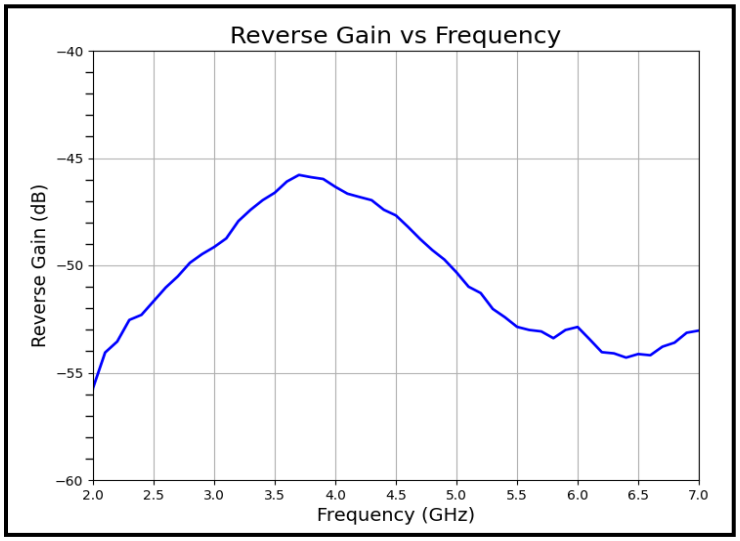
On-Wafer Performance Curves:









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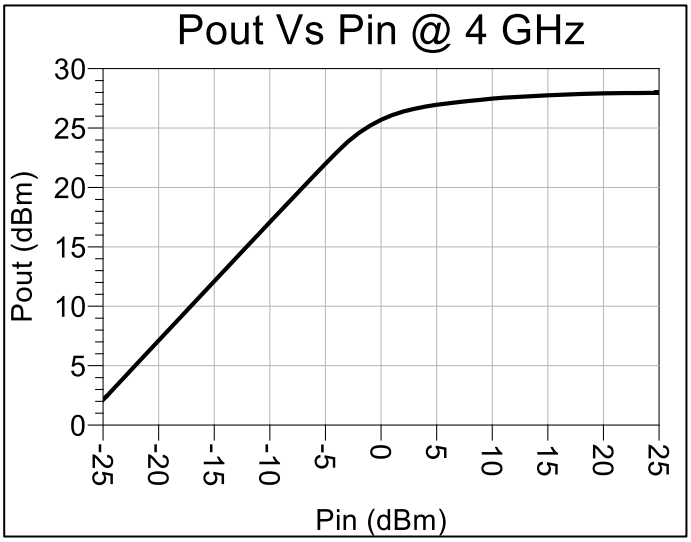
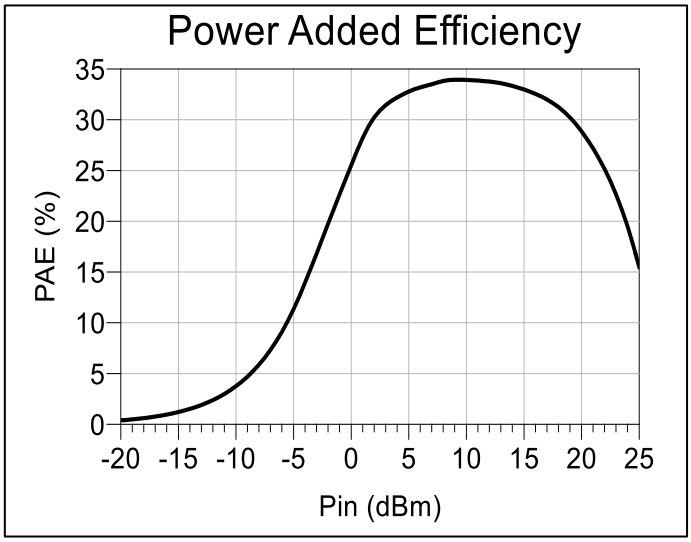
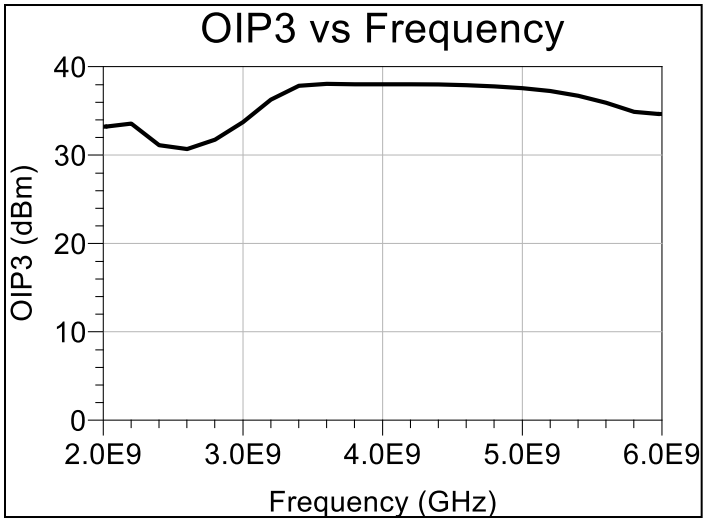
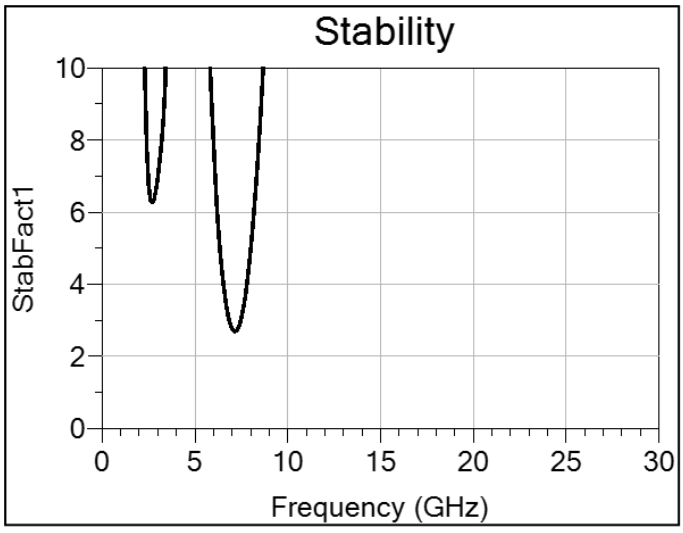
Typical Performance Curves:









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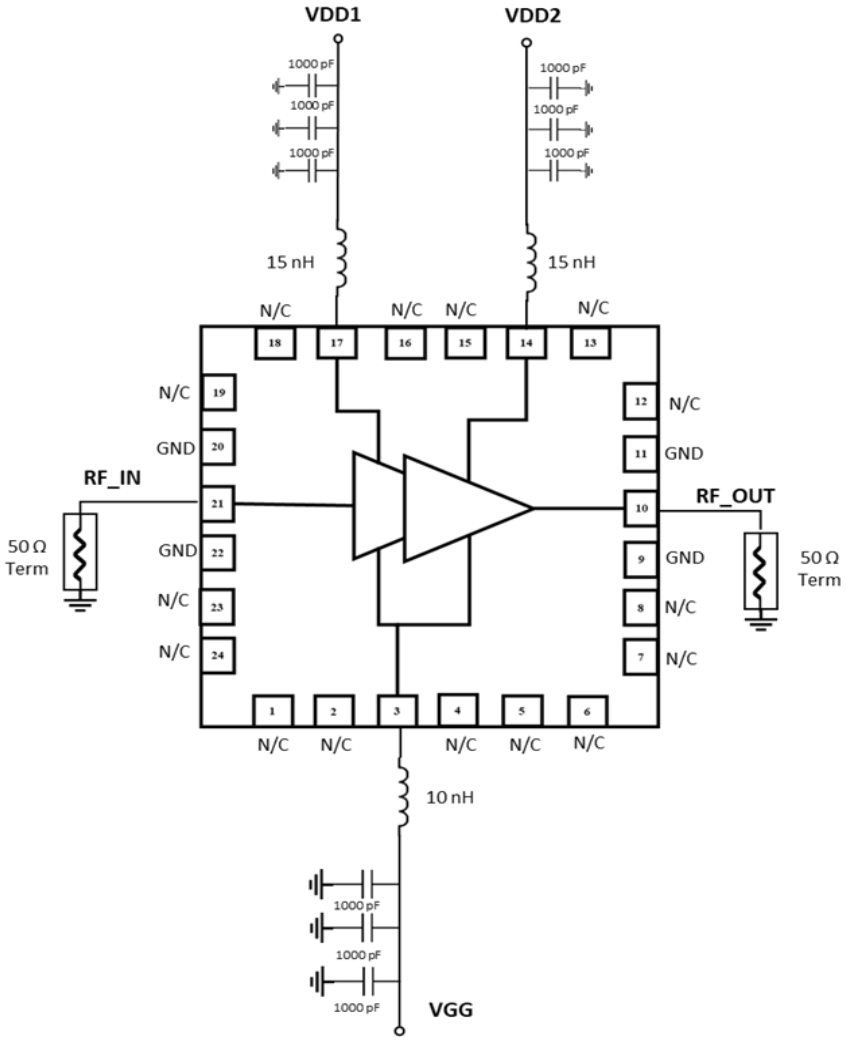
Application Diagram:



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