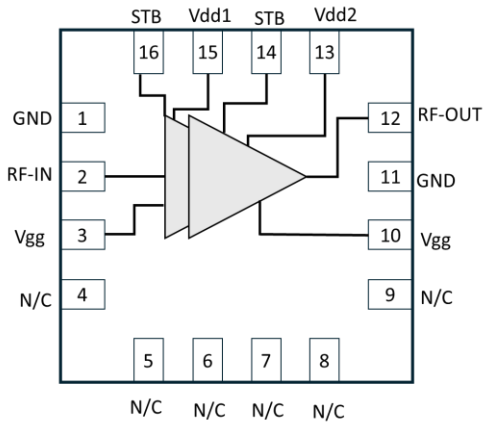
Power Amplifier

PRE-RELEASE DATASHEET RFPA06S

Features:

- RF Frequency : 2 - 6 GHz
- Small signal gain : 28 dB
- Output P1dB : 26.3 dBm
- Saturated Output Power : 29.3 dBm
- DC drain bias voltage : 4 V
- DC gate bias voltage : - 0.5 V
- Dc supply current : 355.4 mA
- 0.1um GaAs pHEMT Technology
- Die Size : 1.2 mm * 1.02 mm

Functional Block Diagram



Description:

RFPA06S is Two Stage Power Amplifier operates from 2 - 6 GHz and it is used to drive the high-power amplifier. The amplifier provides 28 dB of small signal gain, the input and output are matched to 50 ohms with off-chip matching network.

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

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

Pin Configuration

Pin No.	Pin Name	Description
2	RF-IN	RF Input
12	RF-OUT	RF Output
1,11	GND	Ground
3	VGG1	Voltage Gate Bias-1
10	VGG2	Voltage Gate Bias-2
15	VDD2	Voltage Drain Bias-2
13	VDD1	Voltage Drain Bias-1
14,16	STB	Stability
4,5,6,7,8,9	N/C	Not Connected

Applications:

- Bluetooth
- Radar Systems
- SATCOM
- IoT
- Wi-Fi

Deliverables:

- Sample Ready Packaged Die
- Test Results
- Product Datasheet

Electrical Specification:

Freq= 2 - 6 GHz, VDD= 4 V, VGG= - 0.5 V, ID= 355.4 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	26
	4 GHz		28
	6 GHz		26
Output P1 dB	2 GHz	dBm	-
	4 GHz		26.3
	6 GHz		-
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	-
	4 GHz		39
	6 GHz		-
Input Return Loss	2 GHz	dB	10
	4 GHz		8.7
	6 GHz		4
Output Return Loss	2 GHz	dB	2
	4 GHz		21.3
	6 GHz		5.4
Operating Bias Conditions			
Drain Current (Id)	-	mA	355.4
Drain Voltage (VDD)	-	V	4
Gate Voltage (VGG)	-	V	-0.5

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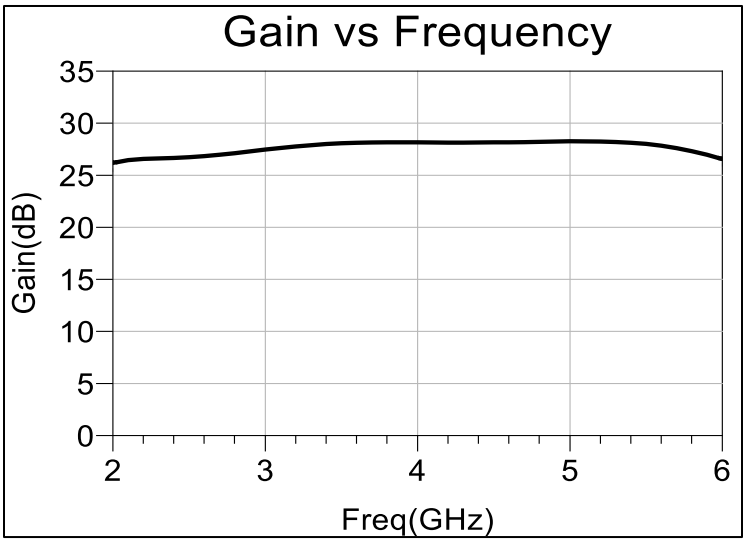
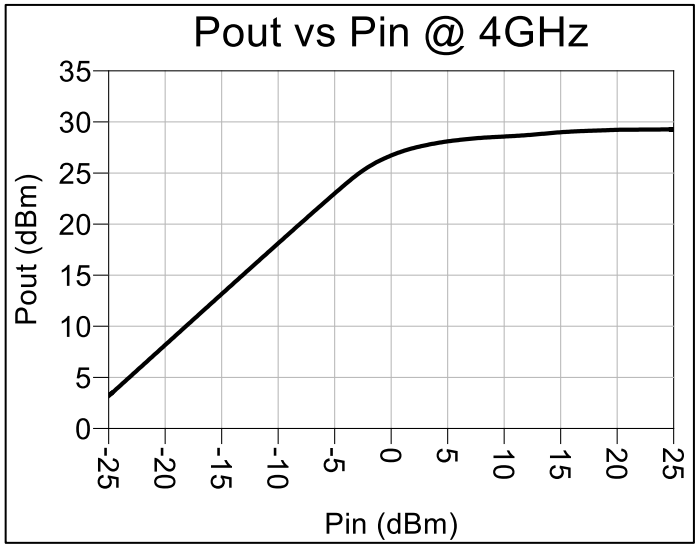
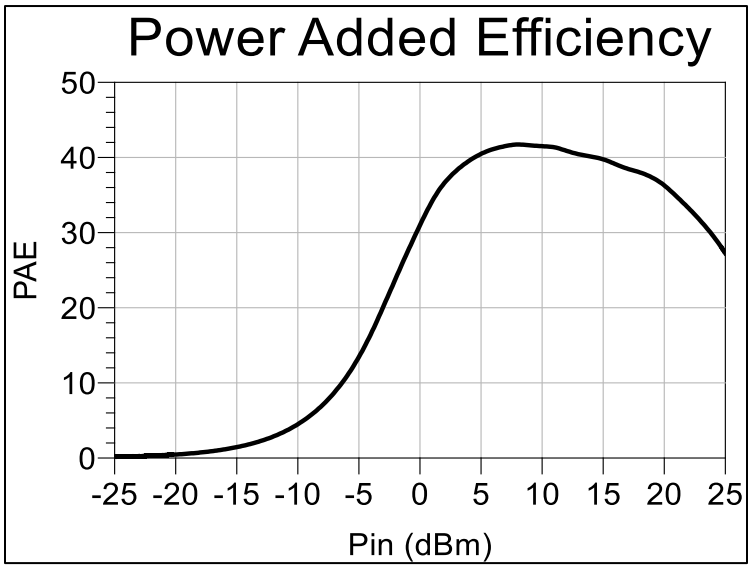
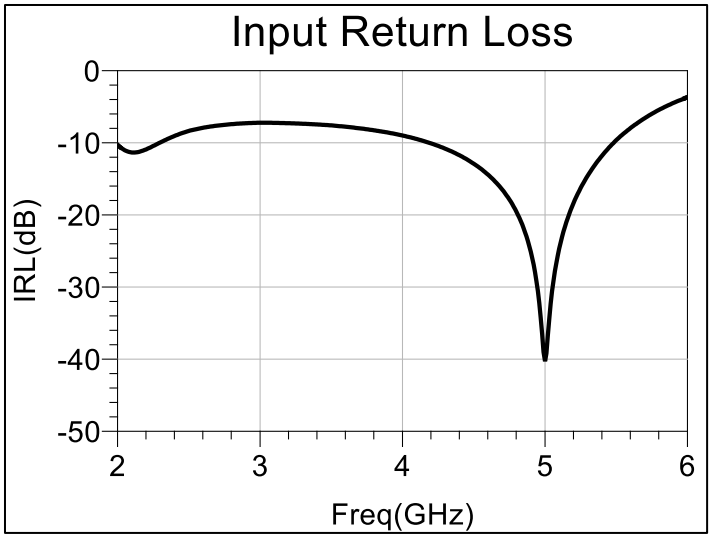
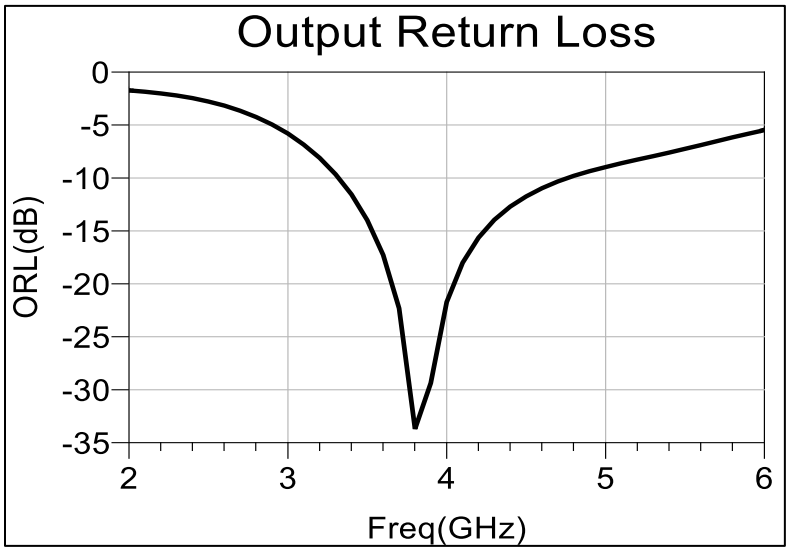
Typical Performance Curves:

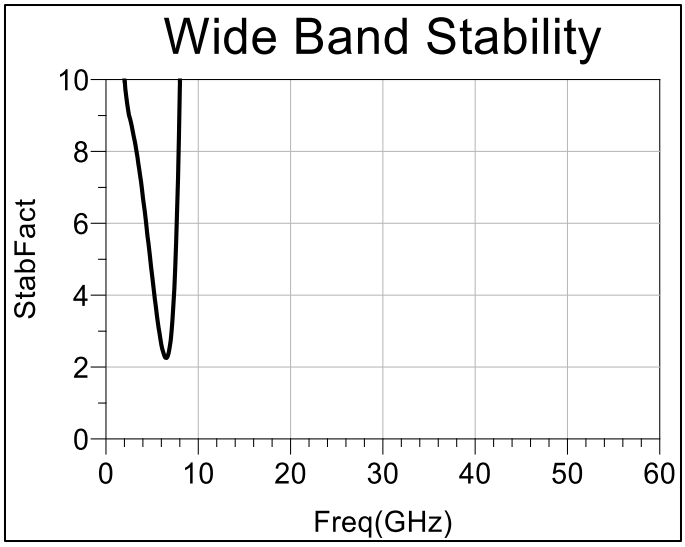


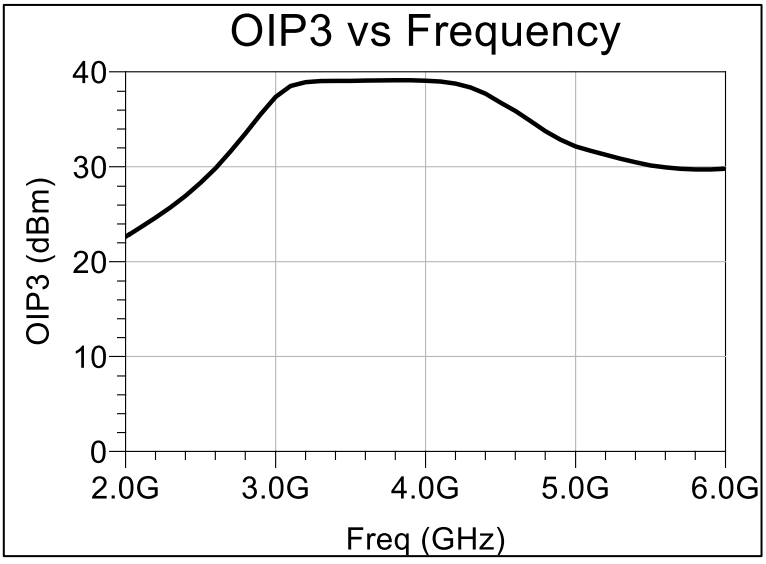












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