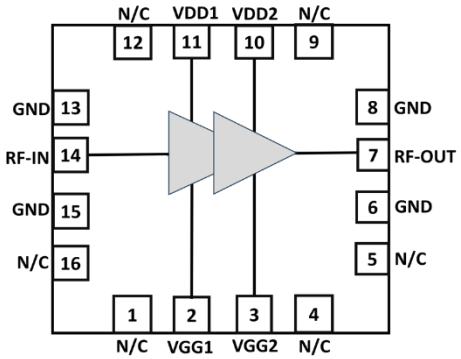
Driver Amplifier

PRODUCT DATASHEET RFDA06

Features:

- RF Frequency: 2-6 GHz
- Small signal gain: 21.27 dB
- Output P1dB: 23.5 dBm
- Saturated Output Power: 23.8 dBm
- DC drain bias voltage: 5 V
- DC supply current: 60 mA
- DC Gate Bias Voltage: -0.3 V
- 0.1um GaAs pHEMT Technology
- Die Size: 0.9 mm * 1.45 mm

Functional Block Diagram



Description:

RFDA06 is Two Stage Driver Amplifier operates from 2- 6 GHz and it is used to drive the high-power amplifier. The amplifier provides 21.27 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 DA is 0.1um GaAs pHEMT Process shown in the datasheet with all parasitic & coupling effects desired frequency.

Pin Configuration

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

Applications:

- Amateur radio.
- Particle accelerators.
- Nuclear fusion experiments.
- Aeronautical radionavigation service
- Cellular telephony
- Use in satellite communication.

Deliverables:

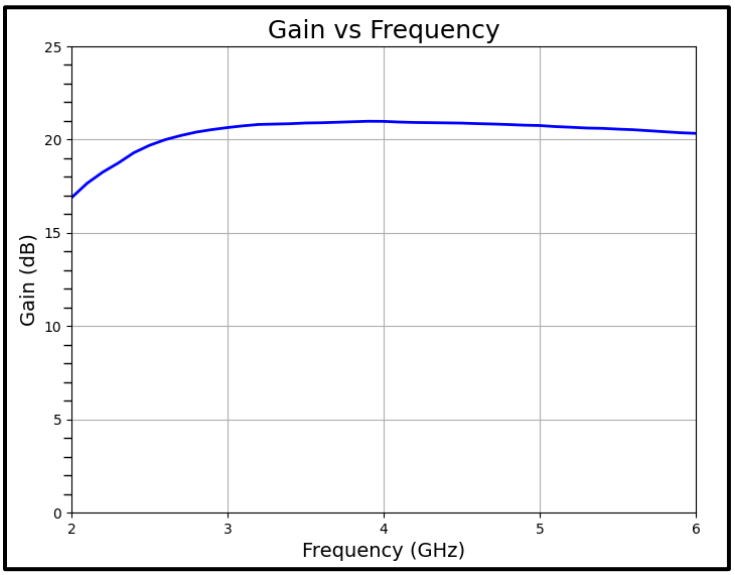
- Sample Ready Packaged Die
- Test Results
- Product Datasheet

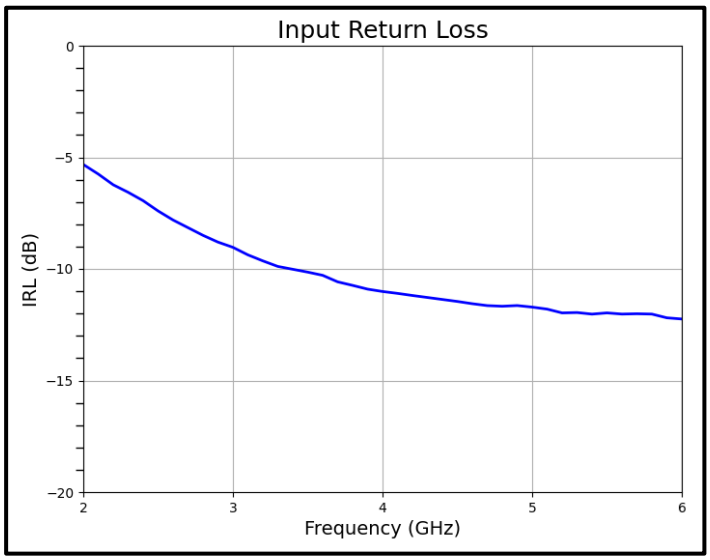
Electrical Specification:

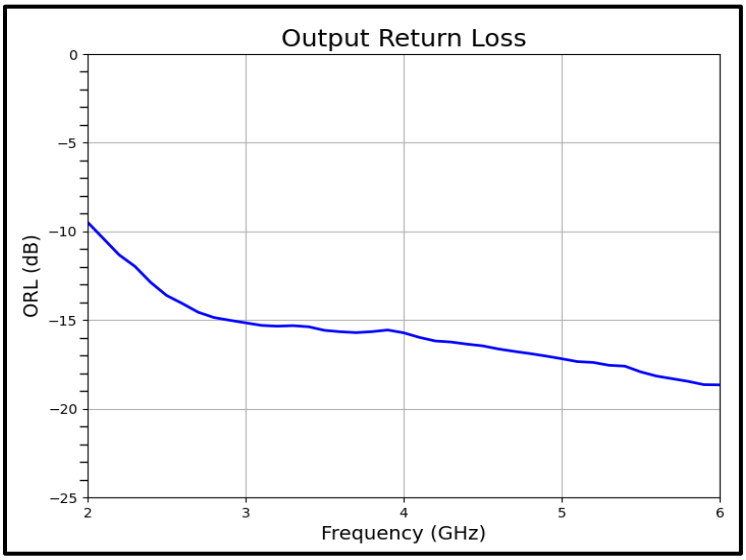
Freq= 2 - 6 GHz, VDD1=VDD2= 5V, VGG1= -0.3 V, ID= 60 mA, Zo=50 Ω

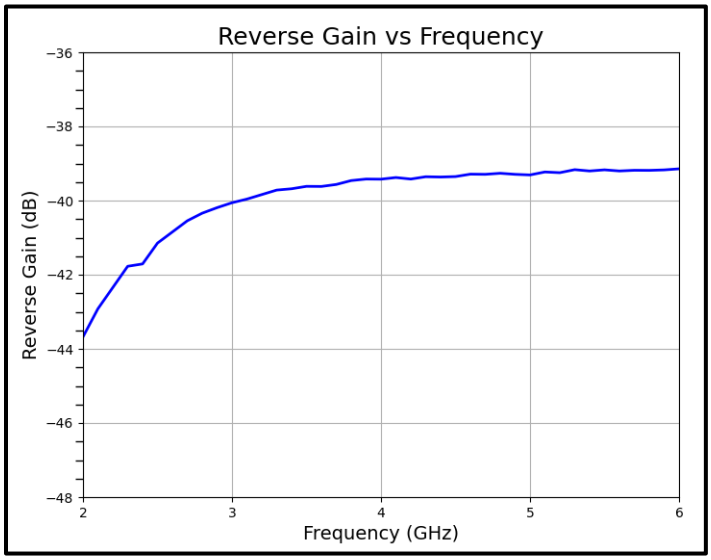
Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	16.64
	4 GHz		21.27
	6 GHz		10.64
Output P1 dB	2 GHz	dBm	
	4 GHz		23.5
	6 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	
	4 GHz		30.9
	6 GHz		
Noise Figure	2 GHz	dB	
	4 GHz		1.5
	6 GHz		
Input Return Loss	2 GHz	dB	4.95
	4 GHz		11.9
	6 GHz		2.58
Output Return Loss	2 GHz	dB	10.42
	4 GHz		37.42
	6 GHz		7.42
Operating Bias Conditions			
Drain Current (Id)	-	mA	60
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.3

On- Wafer Measured Data Performance Curve:

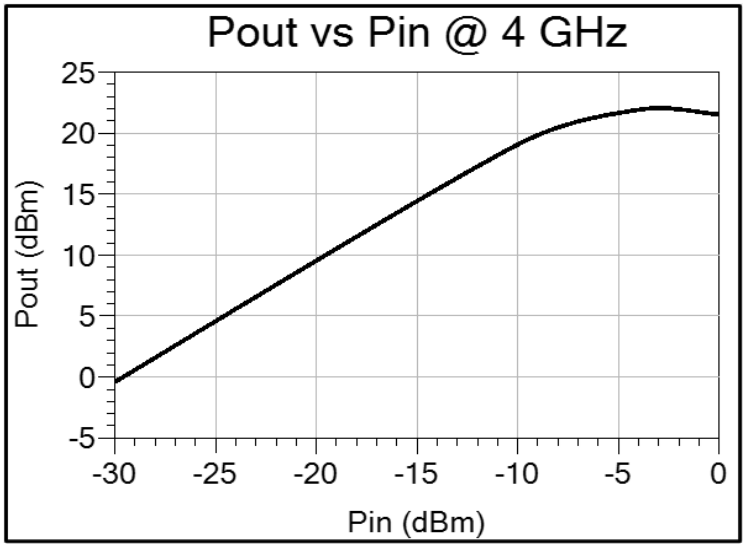


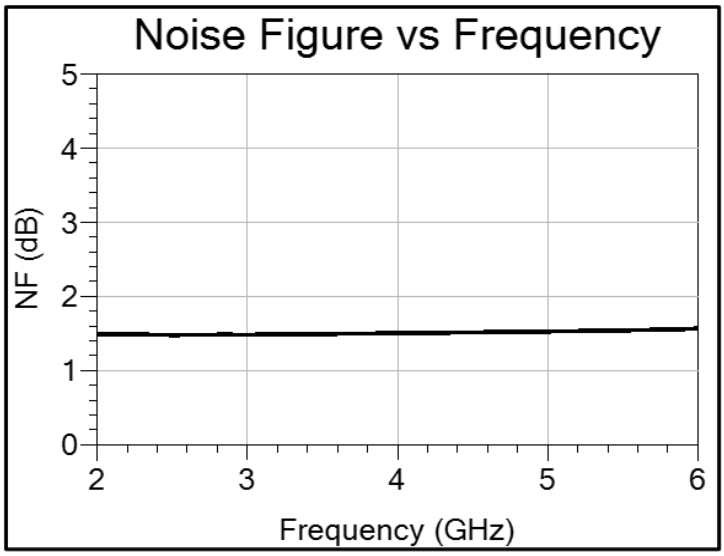


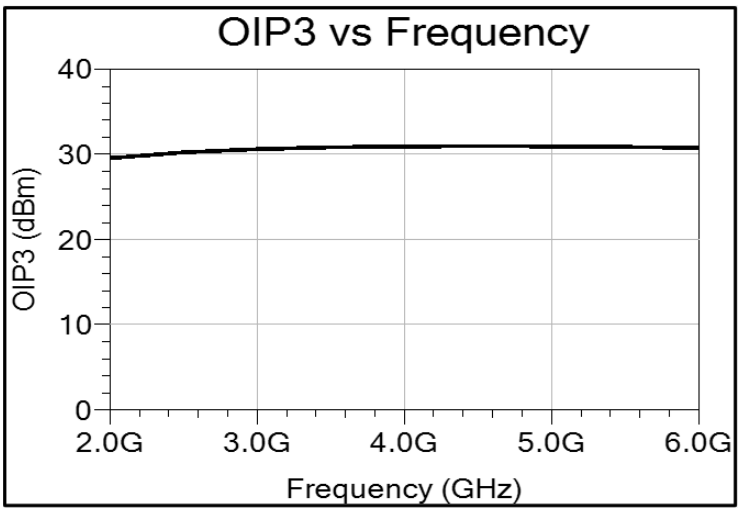




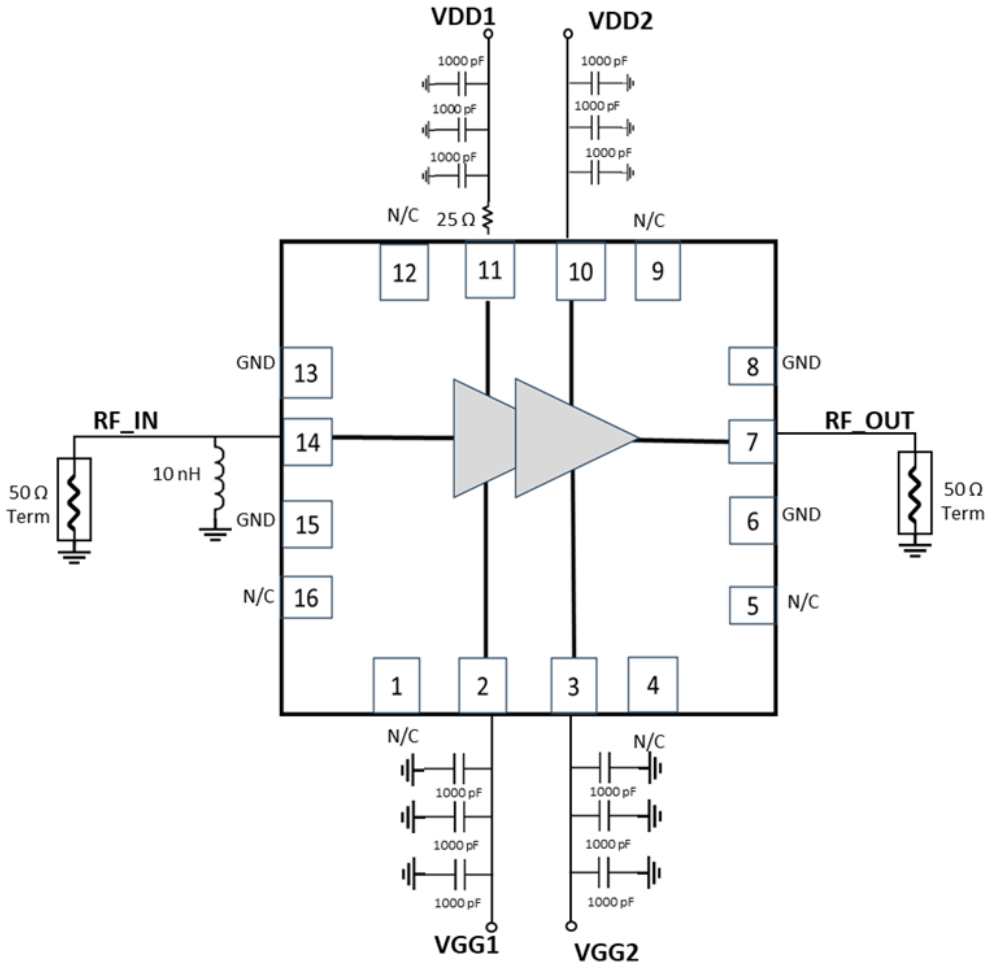
Typical Performance Curves:







Application Diagram:



Disclaimer:

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