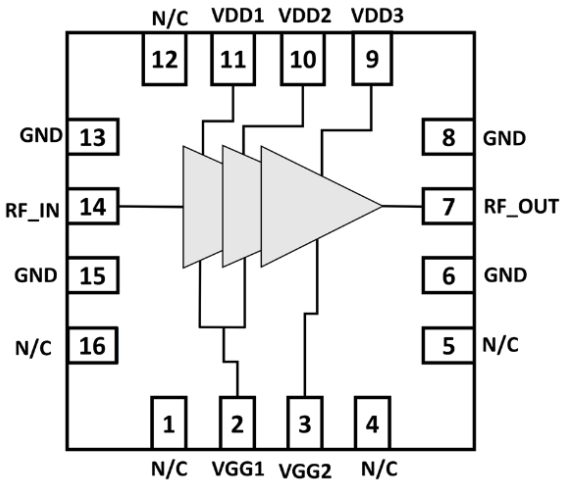
Power Amplifier

PRODUCT DATASHEET RFPA28

Features:

- RF Frequency: 24-28 GHz
- Small signal gain: 21.04 dB
- Output P1dB: 25.8 dBm
- Saturated Output Power: 27.4 dBm
- DC drain bias voltage: 4.5 V
- DC gate bias voltage: -0.3 V
- DC supply current: 620 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 1.2mm*1.78mm

Functional Block Diagram



Description:

RFPA28 is Power Amplifier operates 24-28 GHz. The amplifier provides 21.04 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 24-28 GHz frequency in 5G Wireless Communication, Radar Systems, Fixed Wireless Access (FWA), Imaging and Sensing, and SATCOM Applications.

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

Pin Configuration

Pin No.	Pin Name	Description
6,8,13,15	GND	Ground
2	VGG1	Gate Bias Voltage 1
3	VGG2	Gate Bias Voltage 2
11	VDD1	Drain Bias Voltage 1
10	VDD2	Drain Bias Voltage 2
9	VDD3	Drain Bias Voltage 3
14	RF-IN	RF Input
7	RF-OUT	RF Output
1,4,5,12,16	N/C	Not Connected

Applications:

- 5G Wireless Communication.
- SATCOM
- Radar Systems
- Fixed Wireless Access (FWA)
- Imaging and Sensing

Deliverables:

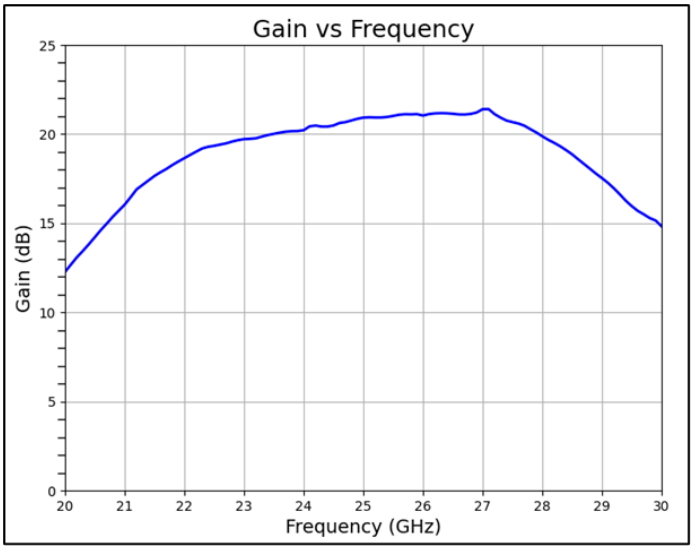
- Sample Ready Packaged Die
- Test Results
- Product Datasheet

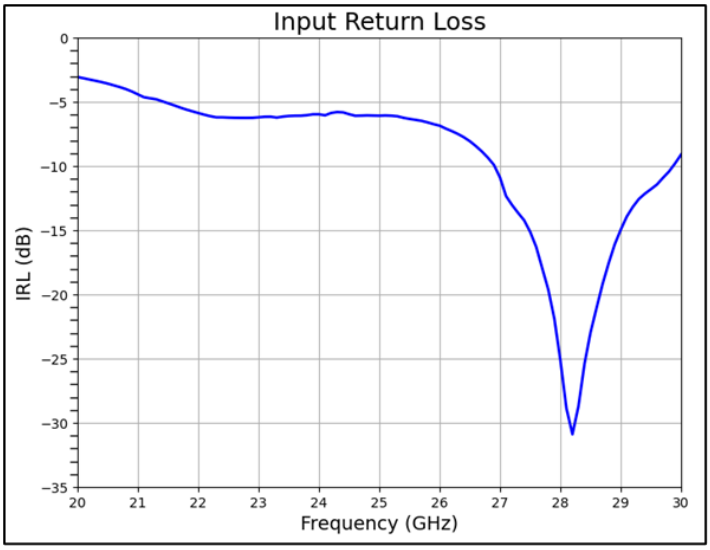
Electrical Specification:

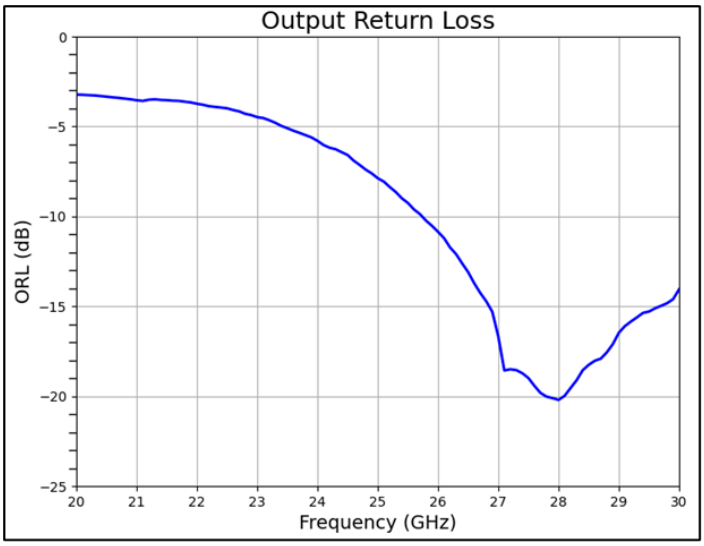
Freq= 20 -30 GHz, VDD1=VDD2= 4.5 V, VGG1= - 0.3 V, ID= 241.3 mA, Zo=50 Ω

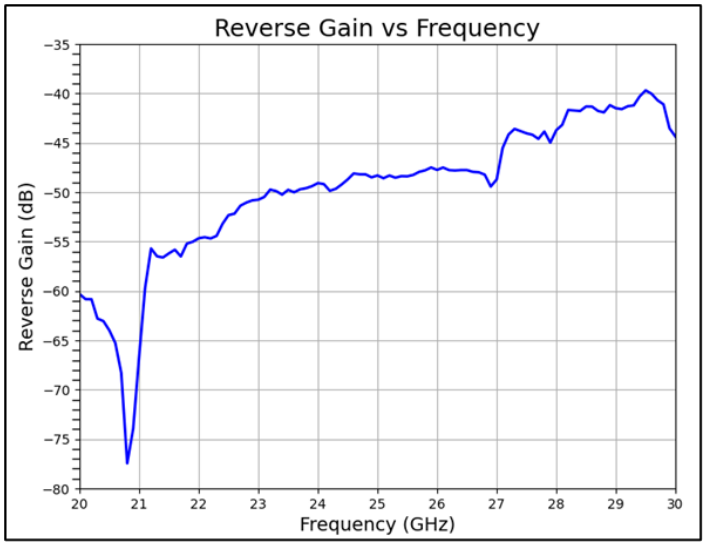
Parameters	Test Condition	Units	Typ
Gain	20 GHz	dB	12.27
	26 GHz		21.04
	30 GHz		14.8
Output P1 dB	20 GHz	dBm	
	26 GHz		25.8
	30 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	20 GHz	dBm	
	26 GHz		30
	30 GHz		
Input Return Loss	20 GHz	dB	3
	26 GHz		6.8
	30 GHz		9
Output Return Loss	20 GHz	dB	3.23
	26 GHz		10.84
	30 GHz		8.9
Drain Current (Id)	-	mA	241.3
Drain Voltage (VDD)	-	V	4.5
Gate Voltage (VGG)	-	V	-0.3

On Wafer Measured Performance Curve:

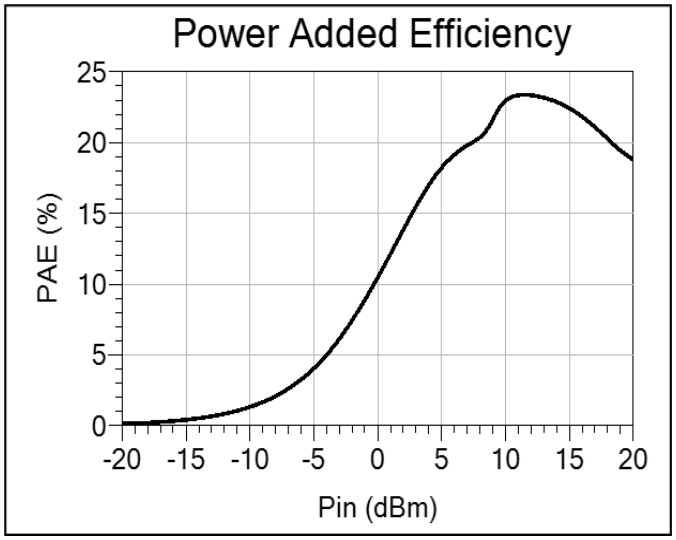


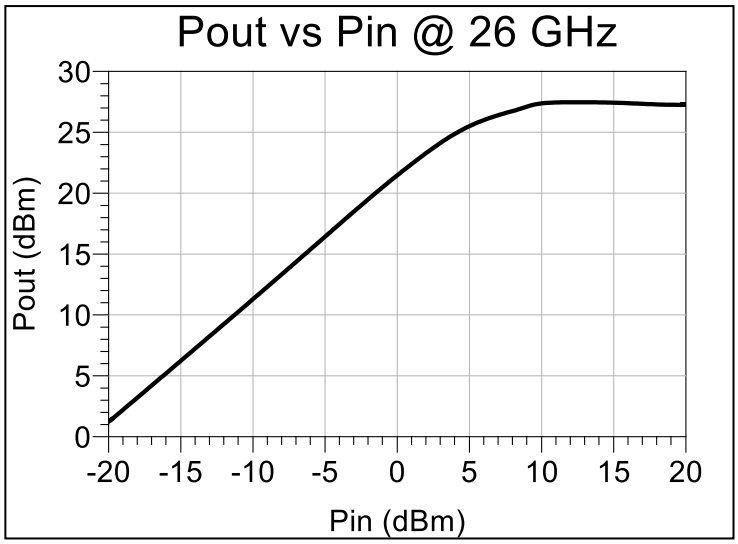


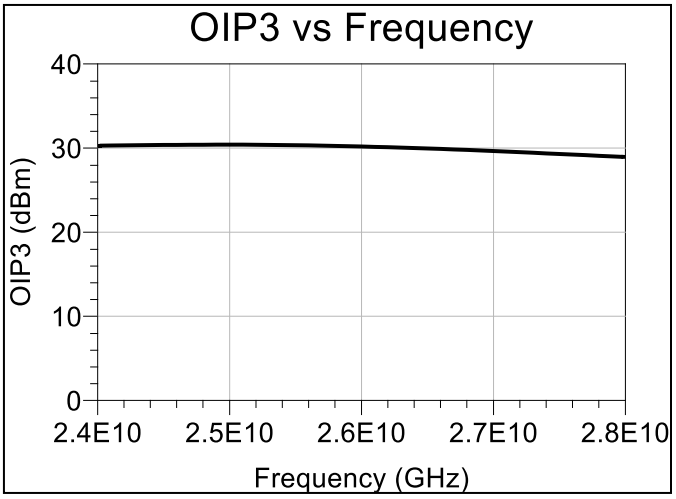


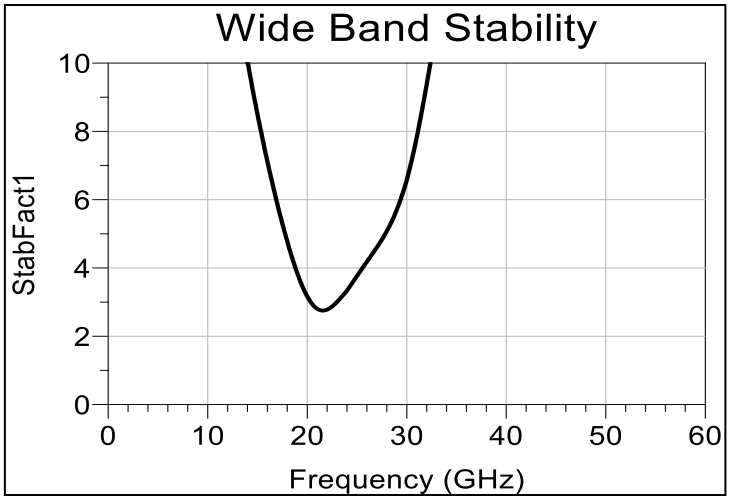


Typical Performance Curves:

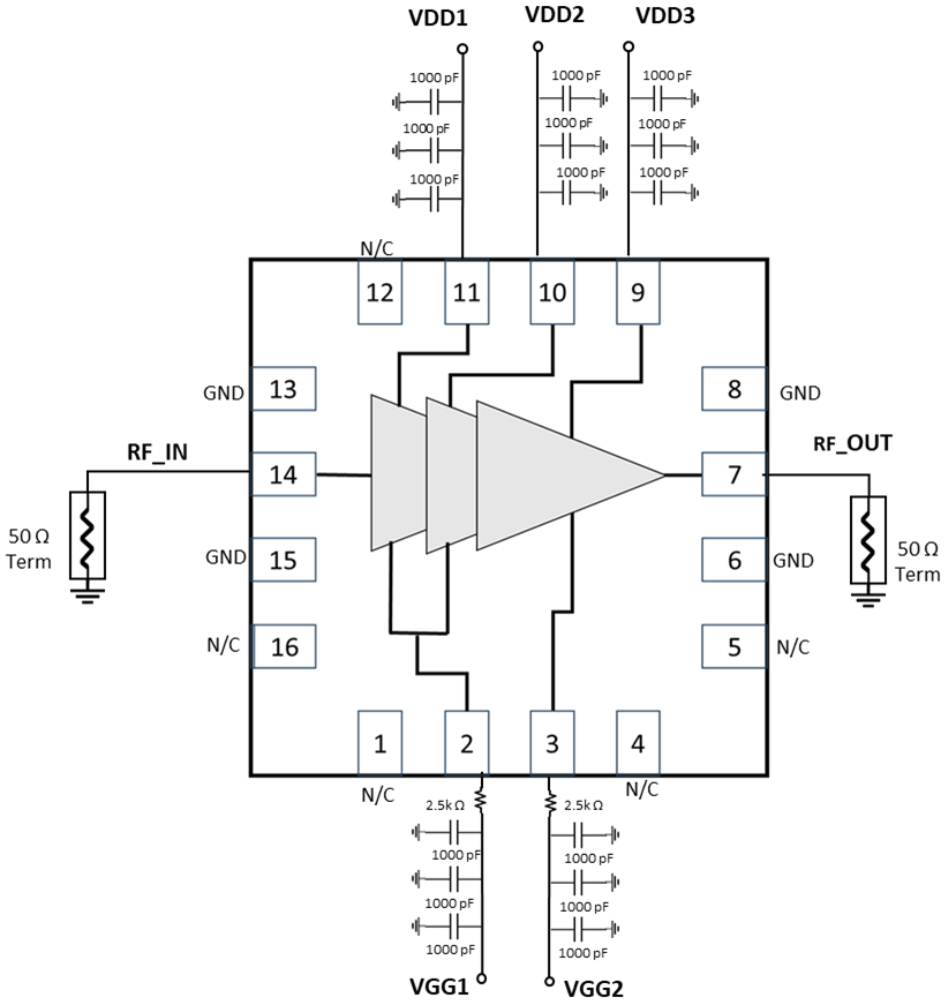








Application Diagram:



Disclaimer:

Contact information

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