

Driver Amplifier

PRODUCT DATASHEET

RFDAAM18

Features:

- RF Frequency: 12 - 18 GHz
- Small signal gain: 13 dB
- Output P1dB: 19.7 dBm
- Saturated Output Power: 21.8 dBm
- DC drain bias voltage: 5 V
- DC supply current: 170 mA
- DC Gate Bias Voltage: - 0.25 V
- 0.1um GaAs pHEMT Technology
- Die Size: 1.15 mm * 1.78 mm

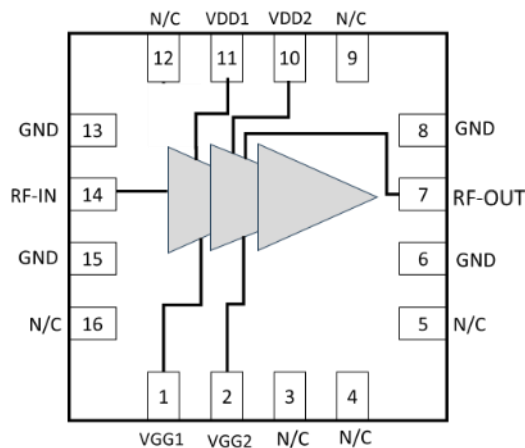
Applications:

- Satellite communication
- Radar systems
- Electronic warfare (EW) systems

Deliverables:

- Sample Ready Die
- Product Datasheet

Functional Block Diagram:



Pin Configuration:

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

Description:

RFDAAM18 is a two-stage driver amplifier operating from 12-18 GHz and is used to drive the high-power amplifier. The amplifier provides 13 dB of small signal gain. The input and output are matched to 50 ohms via on-chip DC-blocking capacitors.

The device is specifically designed for use in 12-18 GHz frequency in 5G Wireless Communication, Radar Systems, WiFi, Fixed Wireless Access (FWA), Imaging and Sensing, and SATCOM Applications.

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

Electrical Specification:

Freq= 12 - 18 GHz, VDD1=VDD2= 5V, VGG1=VGG2= - 0.25 V, ID= 170 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	12 GHz	dB	12
	15 GHz		13
	18 GHz		12.4
Output P1 dB	12 GHz	dBm	-
	15 GHz		19.7
	18 GHz		-
OIP3 Pin = -9 dBm Δf = 100 MHz	12 GHz	dBm	-
	15 GHz		31
	18 GHz		-
Noise Figure	12 GHz	dB	3
	15 GHz		2.3
	18 GHz		2.2
Input Return Loss	12 GHz	dB	15.2
	15 GHz		25.8
	18 GHz		11.2
Output Return Loss	12 GHz	dB	3.7
	15 GHz		7.2
	18 GHz		12.6
Operating Bias Conditions			
Drain Current (Id)	-	mA	170
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.25

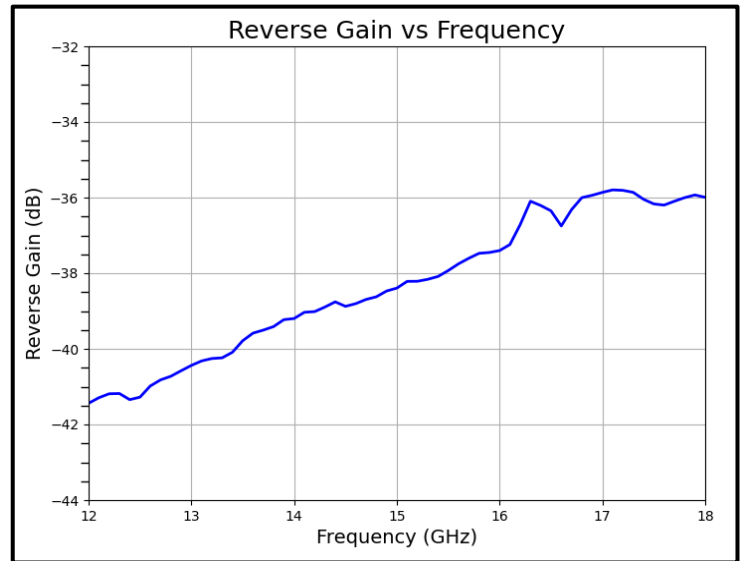
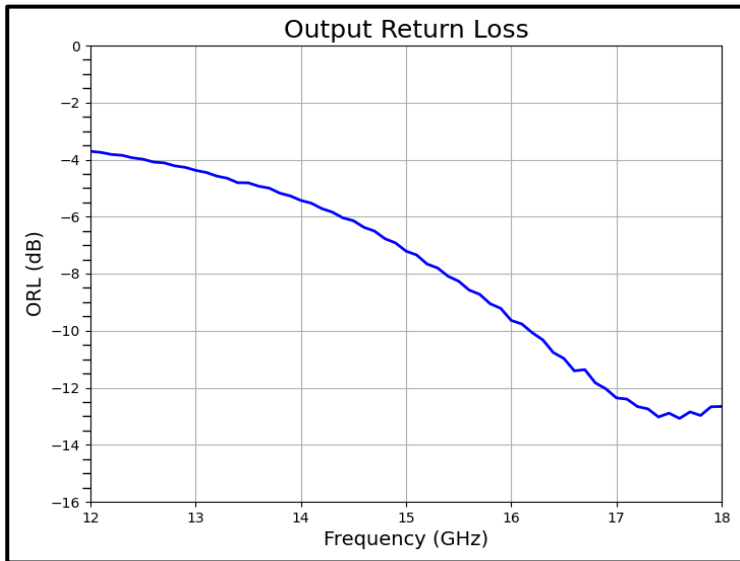
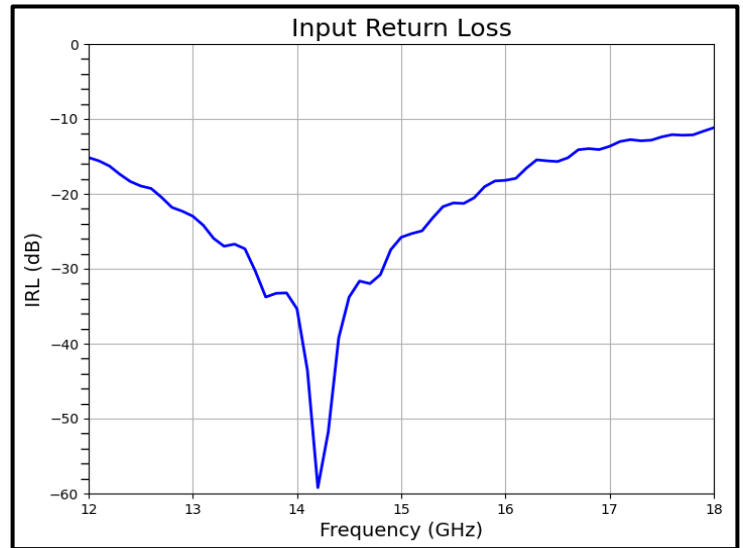
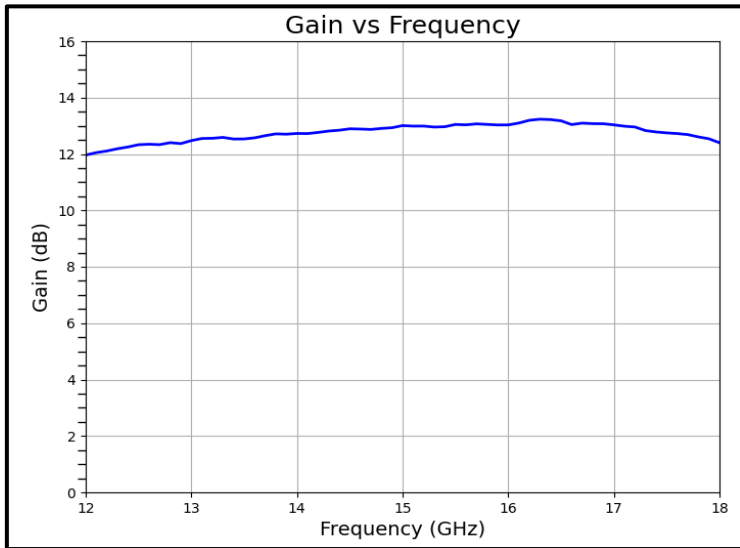
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On Wafer Measured Performance Curve:



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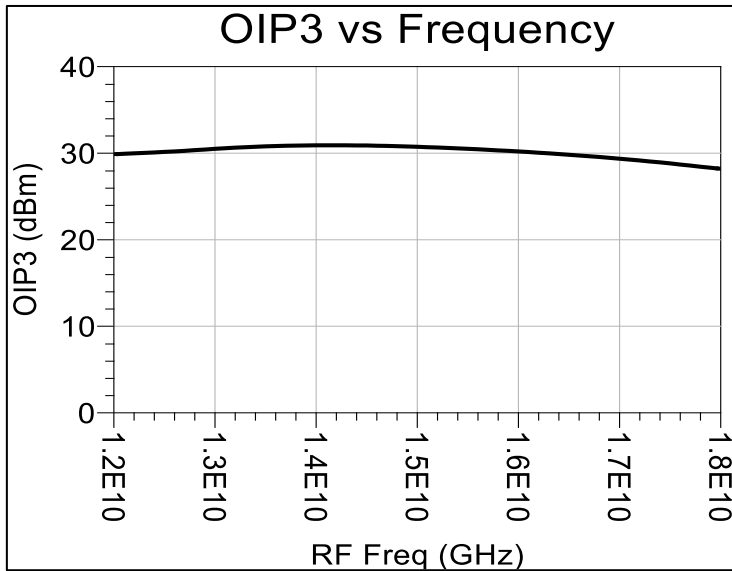
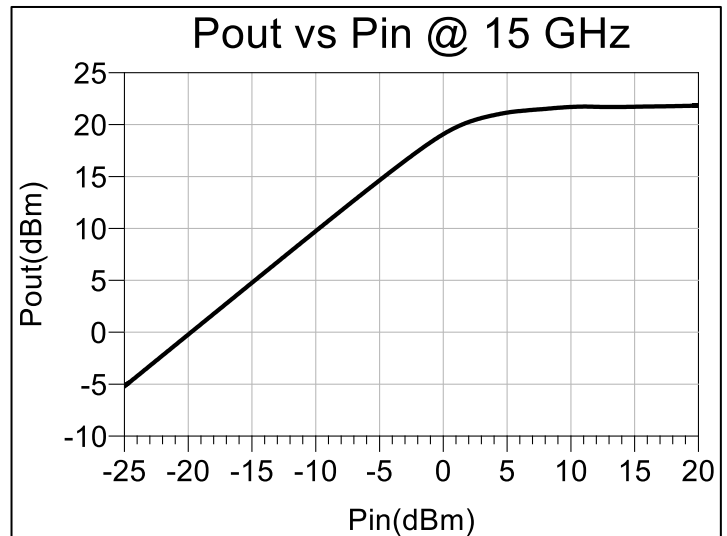
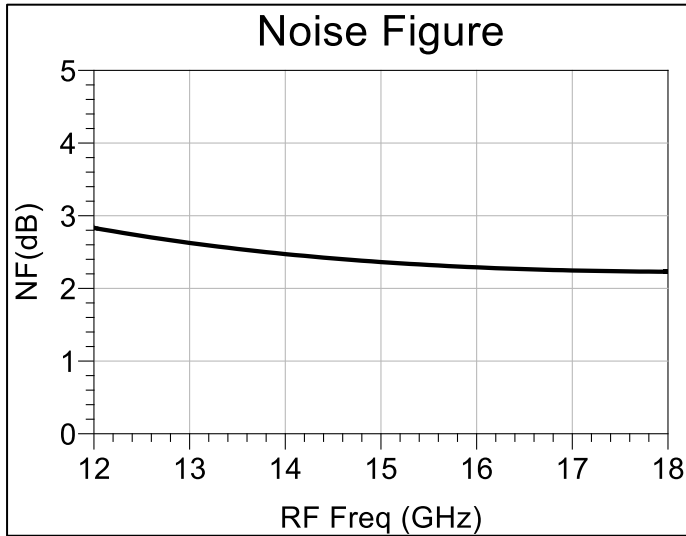
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Typical Performance Curves:

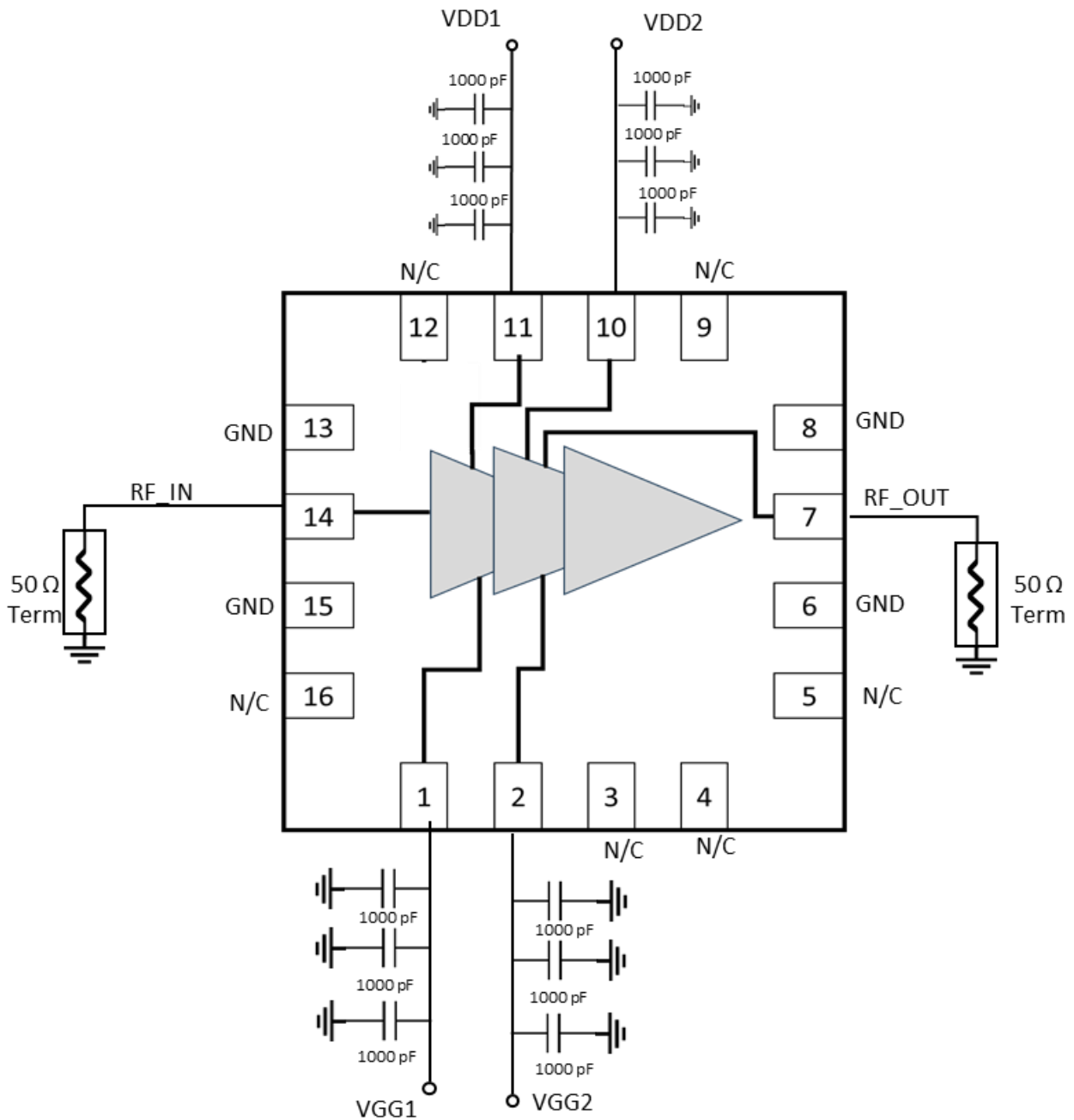


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Application Diagram:



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