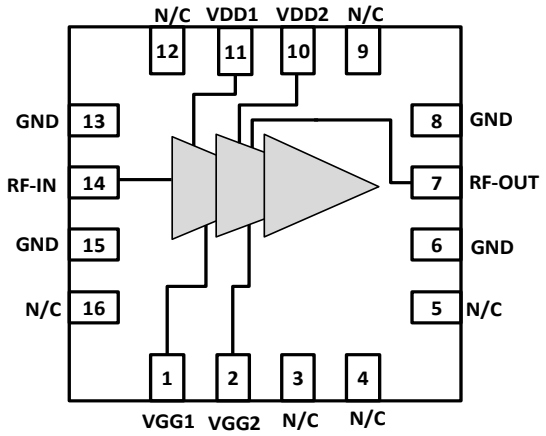
Driver Amplifier

PRODUCT DATASHEET RFDAAM18

Features:

- RF Frequency: 12 - 18 GHz
- Small signal gain : 13.01 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

Functional Block Diagram



Description:

RFDAAM18 is two Stage Driver Amplifier operates from 12 - 18 GHz and it is used to drive the high-power amplifier. The amplifier provides 13.01 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 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 0.1um GaAs pHEMT Process.

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

Applications:

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

Deliverables:

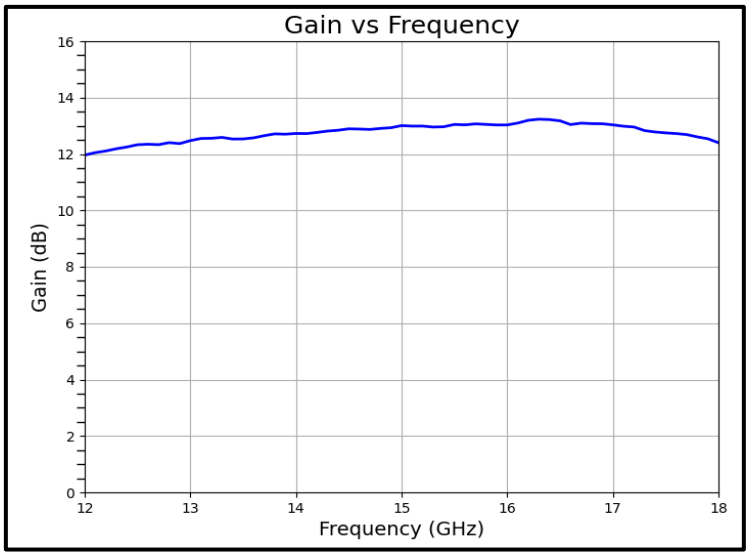
- Sample Ready Packaged Die
- Test Results
- Product Datasheet

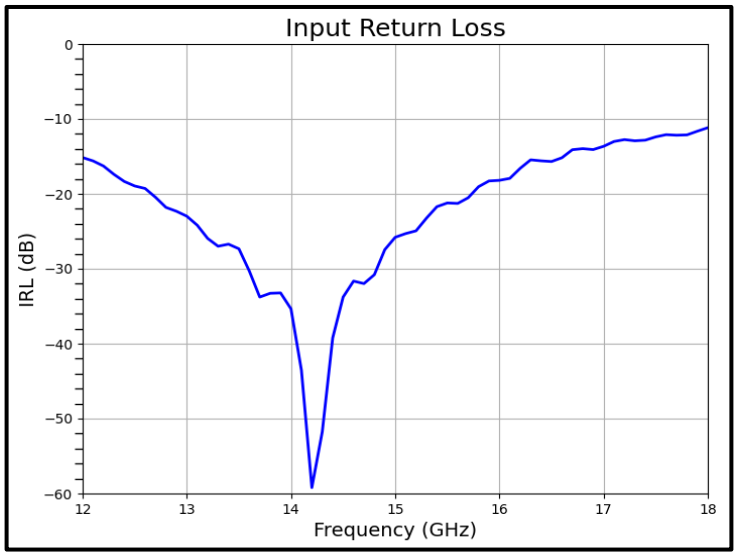
Electrical Specification:

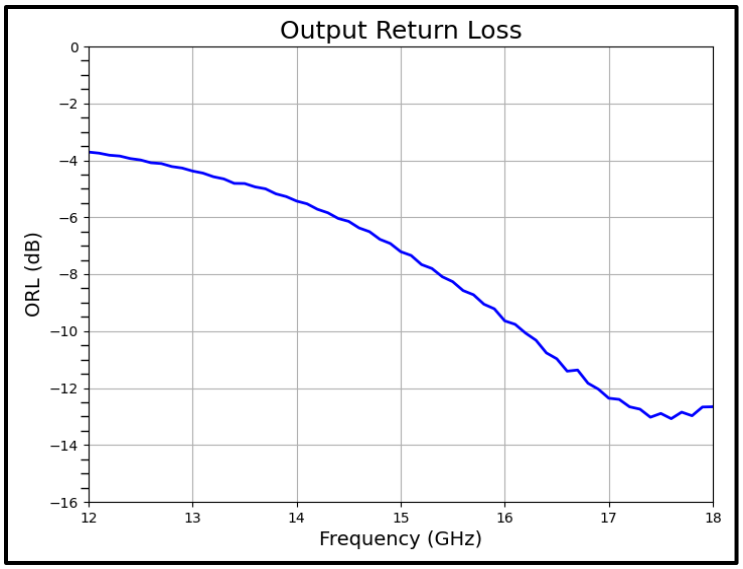
Freq= 12 - 18 GHz, VDD1=VDD2= 5V, VGG1=VGG2= - 0.25 V, ID= 170 mA, Zo=50 Ω

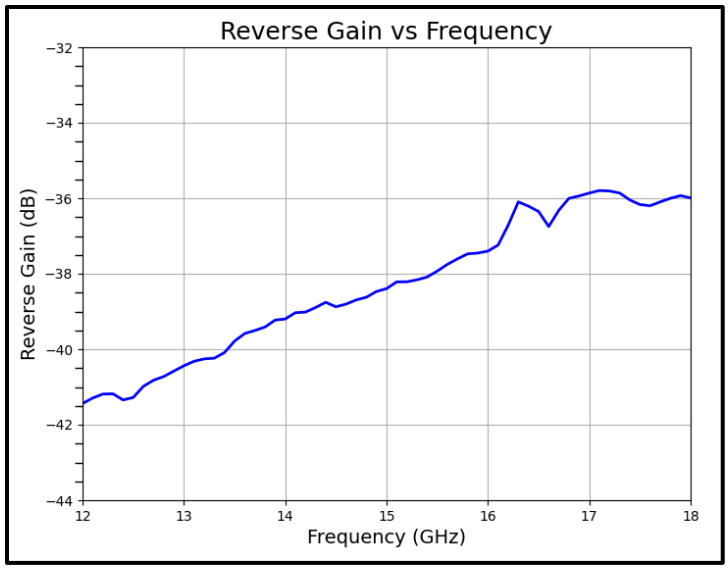
Parameters	Test Condition	Units	Typ
Gain	12 GHz	dB	11.96
	15 GHz		13.01
	18 GHz		12.40
Output P1 dB	12 GHz	dBm	-
	15 GHz		19.7
	18 GHz		-
OIP3 Pin= 1 dBm Δf = 50MHz	12 GHz	dBm	-
	15 GHz		31
	18 GHz		-
Noise Figure	12 GHz	dB	2.9
	15 GHz		2.3
	18 GHz		2.2
Input Return Loss	12 GHz	dB	15.16
	15 GHz		25.85
	18 GHz		11.17
Output Return Loss	12 GHz	dB	3.71
	15 GHz		7.2
	18 GHz		12.66
Operating Bias Conditions			
Drain Current (Id)	-	mA	170
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.25

On Wafer Measured Performance Curve:

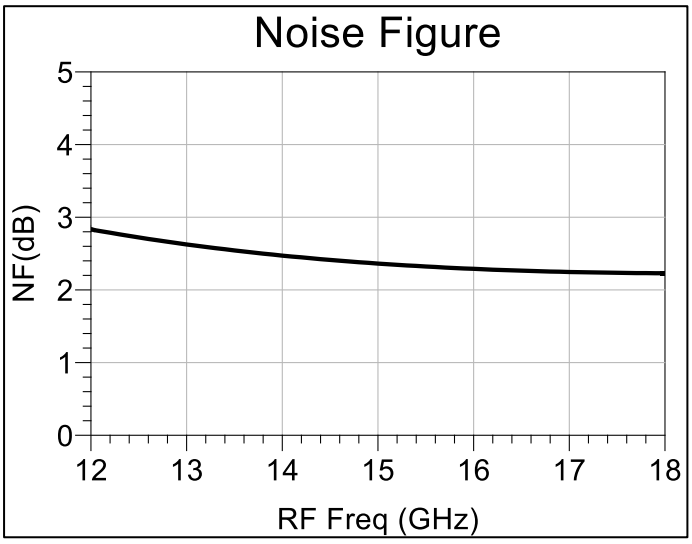


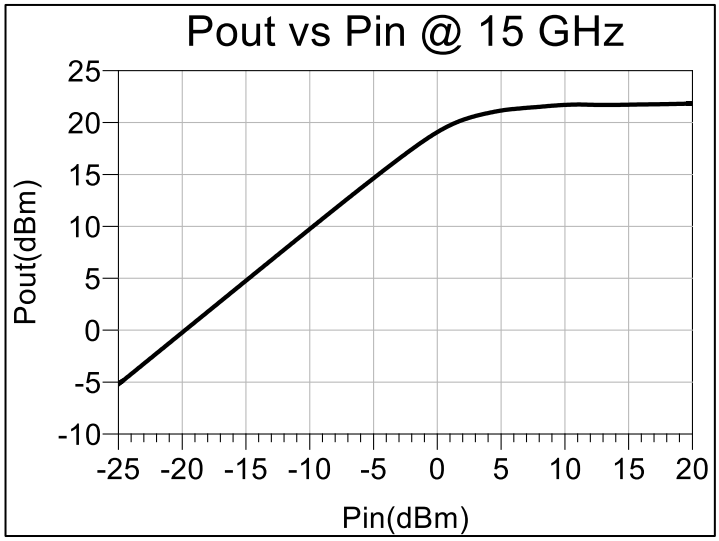


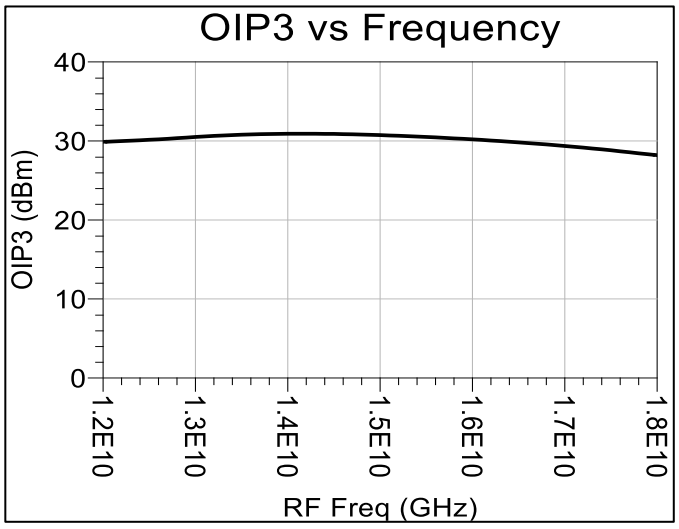




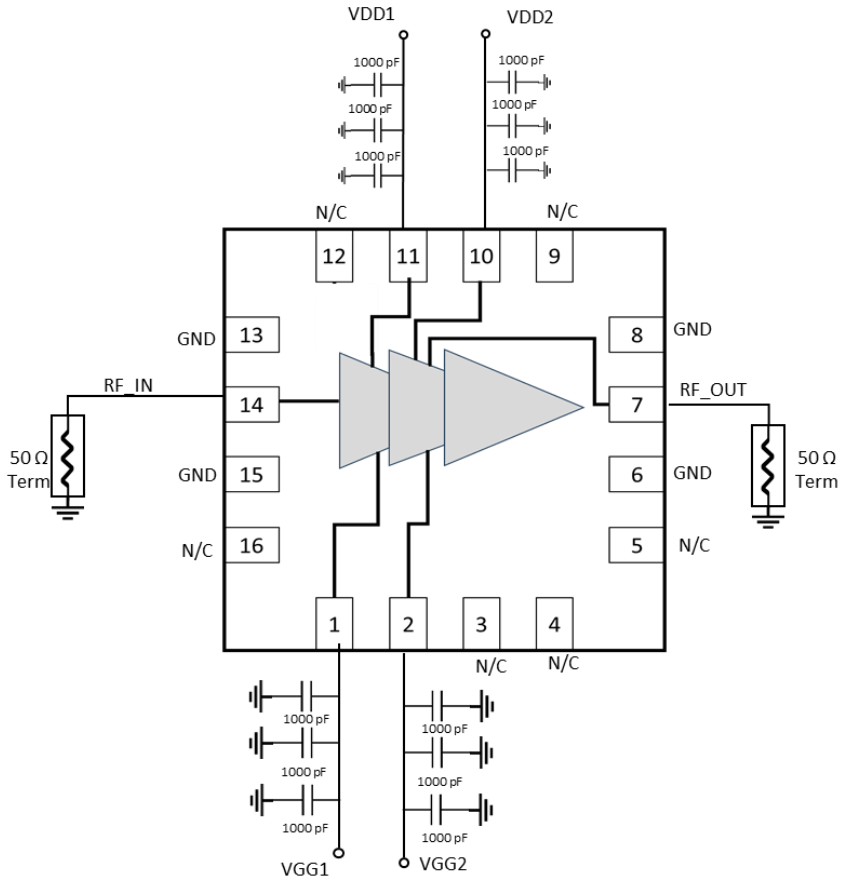
Typical Performance Curves:







Application Diagram:



Disclaimer:

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