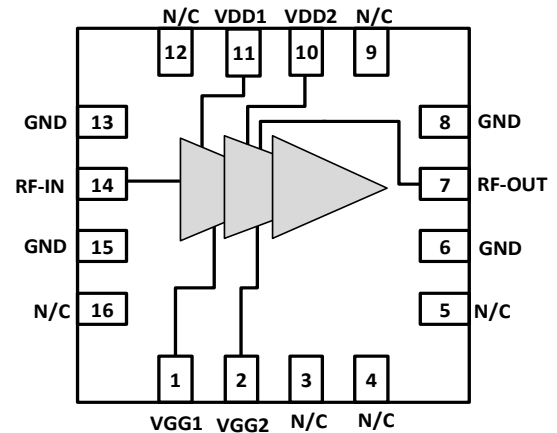


### Features:

- 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, Wi-Fi, 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:

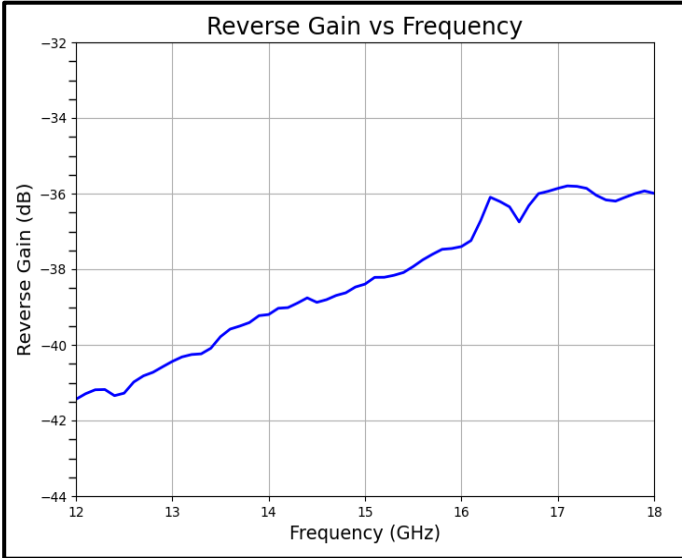
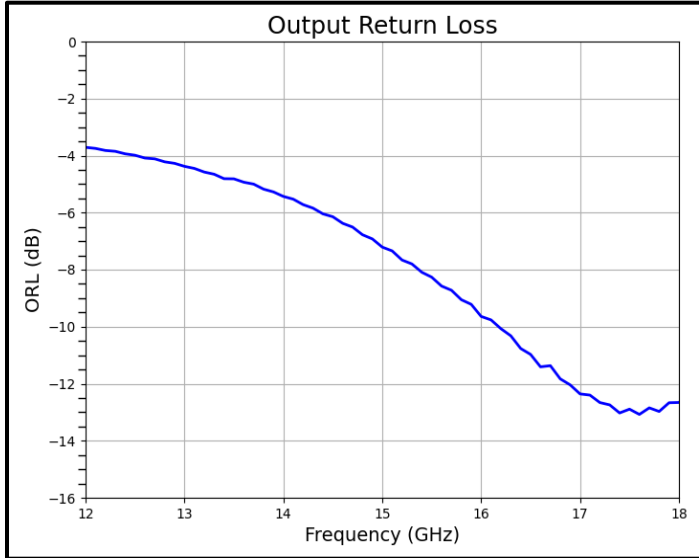
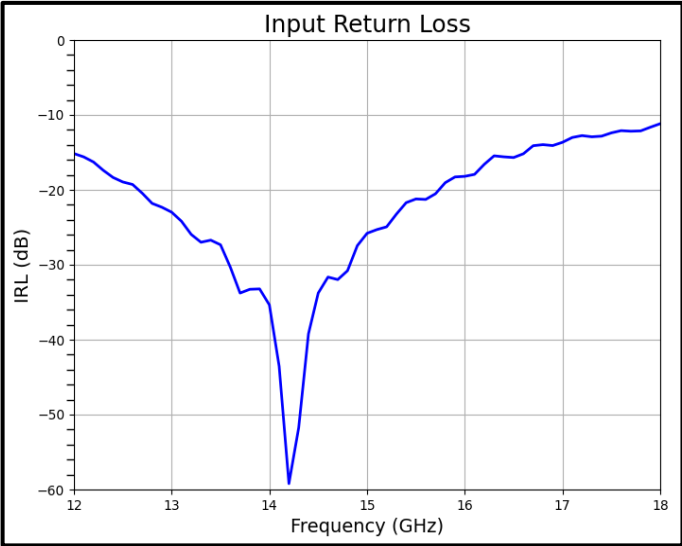
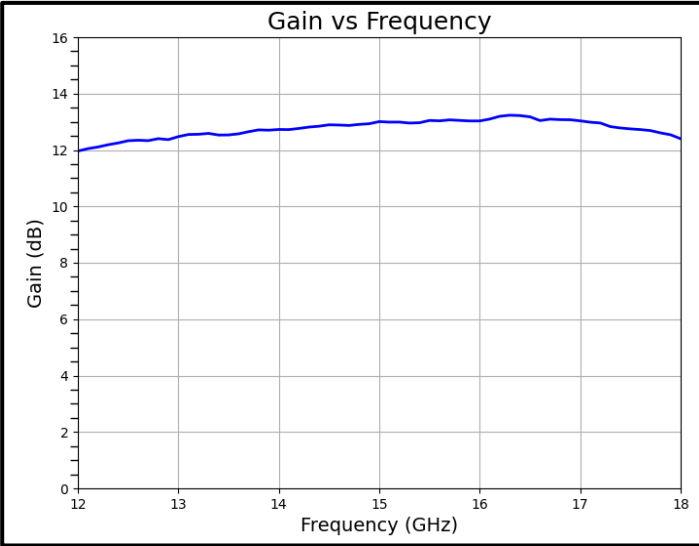
- Packaged ready Die
- Test Results
- Product Datasheet

### 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<br>Pin= 1 dBm<br>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 |
| <b>Operating Bias Conditions</b> |                |       |       |
| Drain Current (Id)               | -              | mA    | 170   |
| Drain Voltage (VDD)              | -              | V     | 5     |
| Gate Voltage (VGG)               | -              | V     | -0.25 |

### On Wafer Testing Performance Curves:

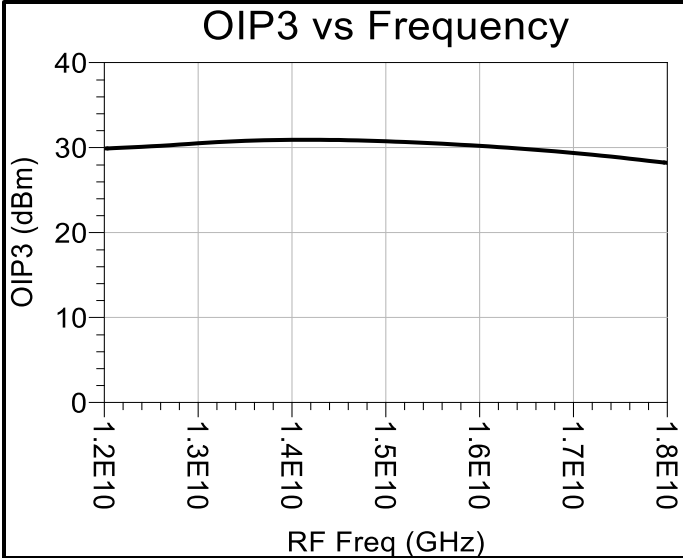
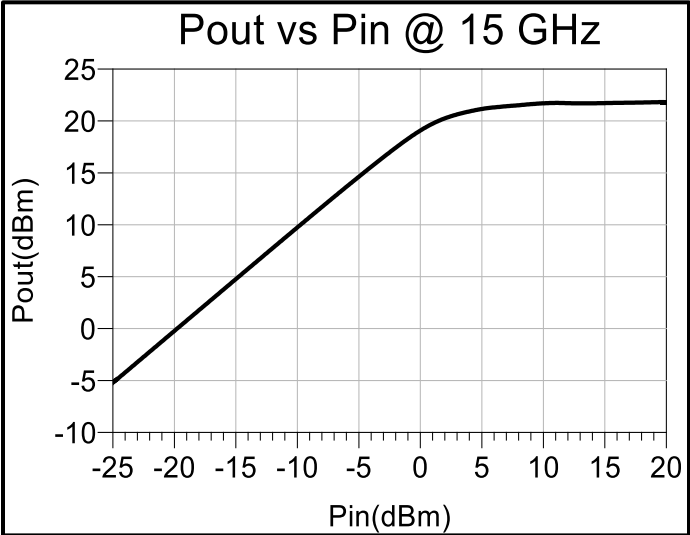
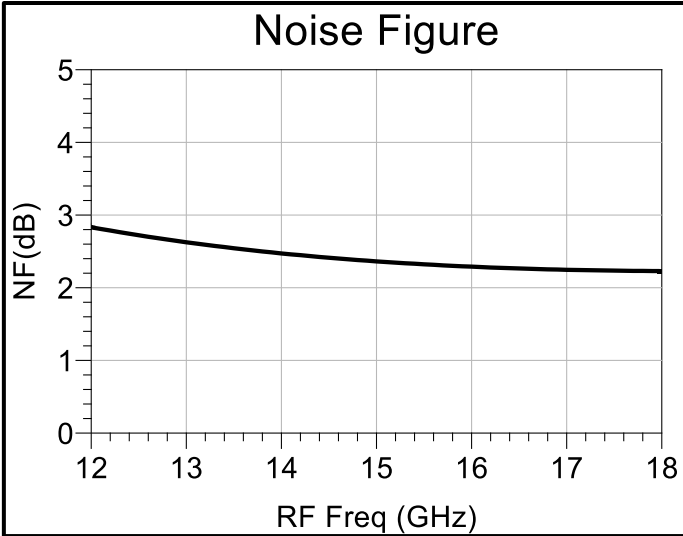


# DRIVER AMPLIFIER

## PRODUCT DATASHEET

## RFDAAM18

### Typical Performance Curves:

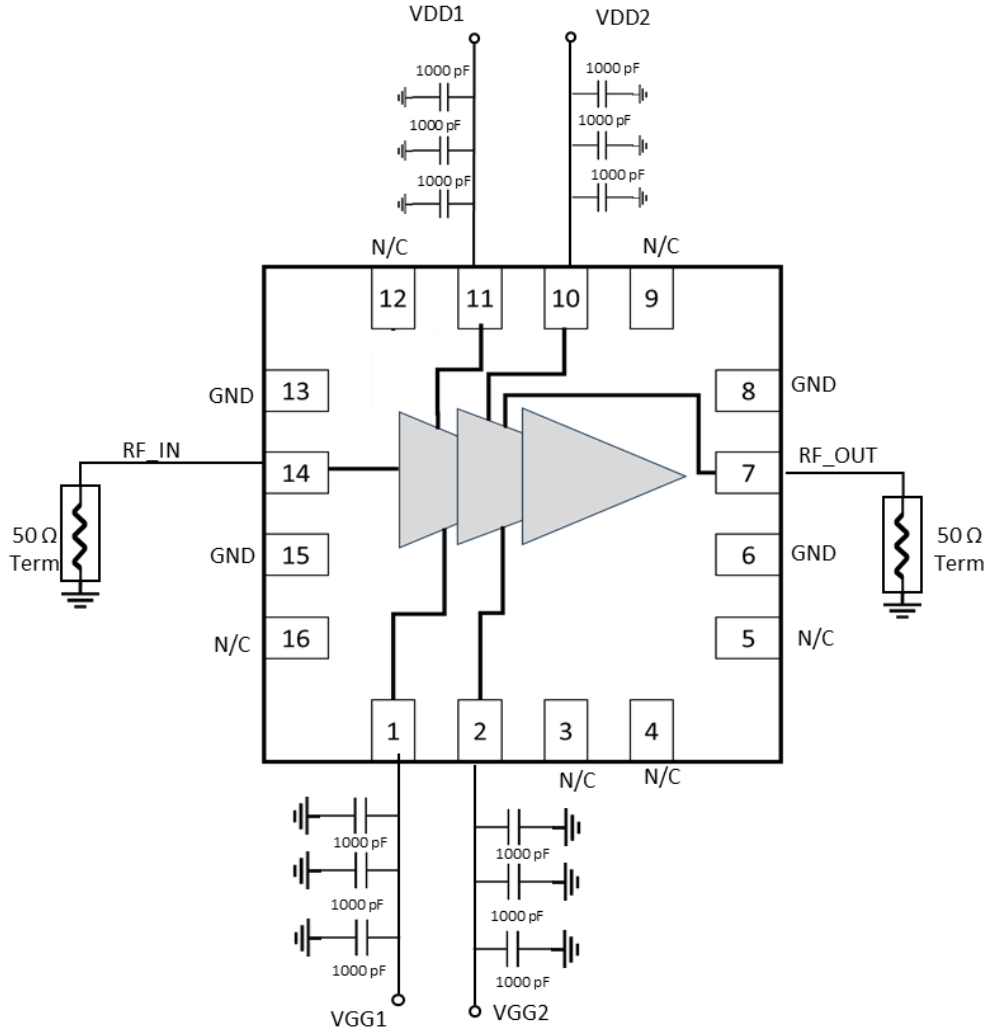


# DRIVER AMPLIFIER

## PRODUCT DATASHEET

RFDAAM18

### Application Diagram:



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