Driver Amplifier

PRODUCT DATASHEET RFDA20

Features:

- RF Frequency: 2-20 GHz
- Small Signal Gain : 17.8 dB
- Output P1dB: 17.4 dBm
- DC drain bias voltage: 4 V
- Dc supply current: 140 mA
- Dc Gate Bias Voltage: -0.3 V
- 0.1um GaAs pHEMT Technology
- Die Size: 1.15 mm*2.6 mm

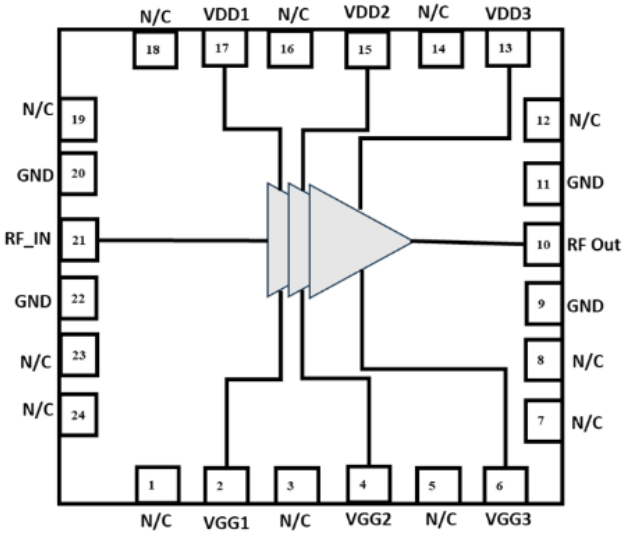
Applications:

- Electronic Warfare
- SATCOM
- RADAR
- 5G/ Microwave Communication

Deliverables:

- Sample Ready Die
- Product Datasheet

Functional Block Diagram:



Pin Configuration:

Pin No.	Pin Name	Description
9,11,20,22	GND	Ground
2	VGG1	Gate Bias Voltage 1
4	VGG2	Gate Bias Voltage 2
6	VGG3	Gate Bias Voltage 3
17	VDD1	Drain Bias Voltage 1
15	VDD2	Drain Bias Voltage 2
13	VDD3	Drain Bias Voltage 3
21	RF_IN	RF Input
10	RF _OUT	RF Output
1,3,5,7,8,12,14,16,18,19,23,24	N/C	Not Connected

Description:

RFDA20 is Three Stage Driver Amplifier operates from 2-20 GHz, and it is used to drive the high-power amplifier. The Driver amplifier provides 17.8 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 2-20 GHz. frequency in Bluetooth, Zigbee, WiFi, IoT and SATCOM Application.

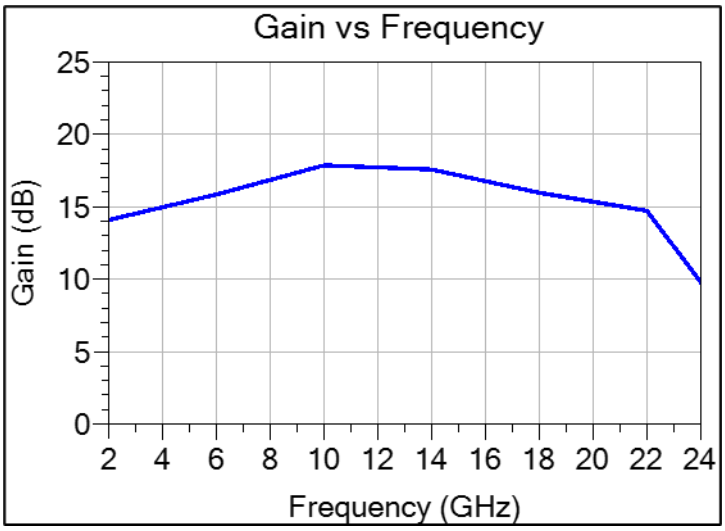
The Technology used to design DA is a 0.1um GaAs pHEMT Process.

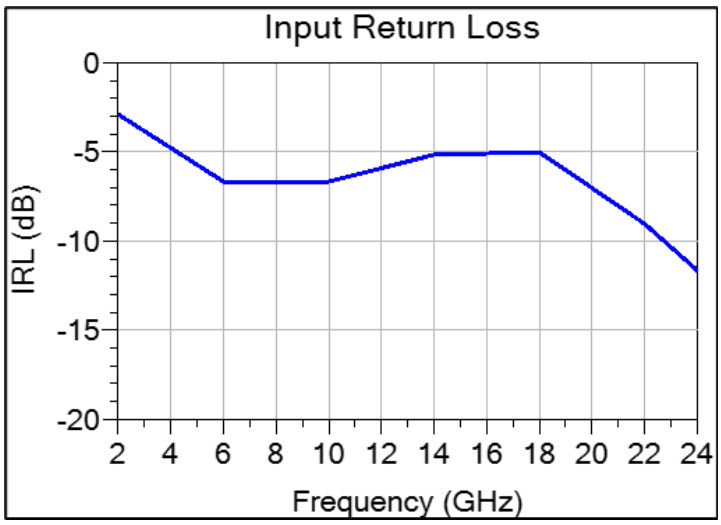
Electrical Specification:

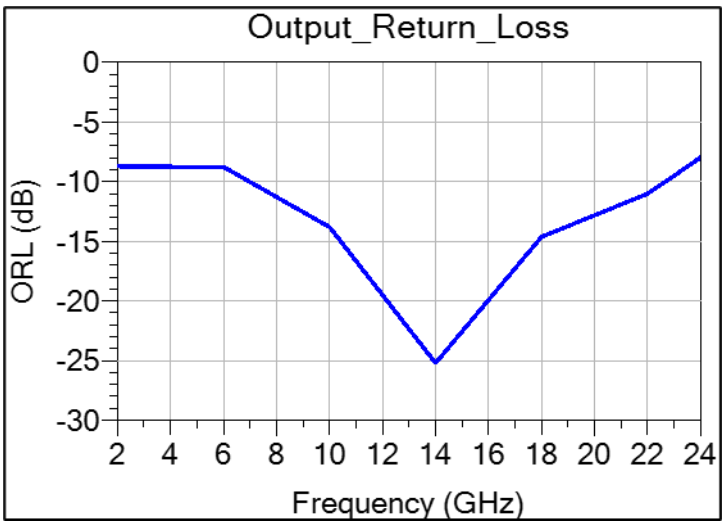
Freq= 2-20 GHz, VDD1=VDD2= VDD3= 4V, VGG1=VGG2= VGG3= -0.3 V, ID= 140 mA, Zo=50 Ω

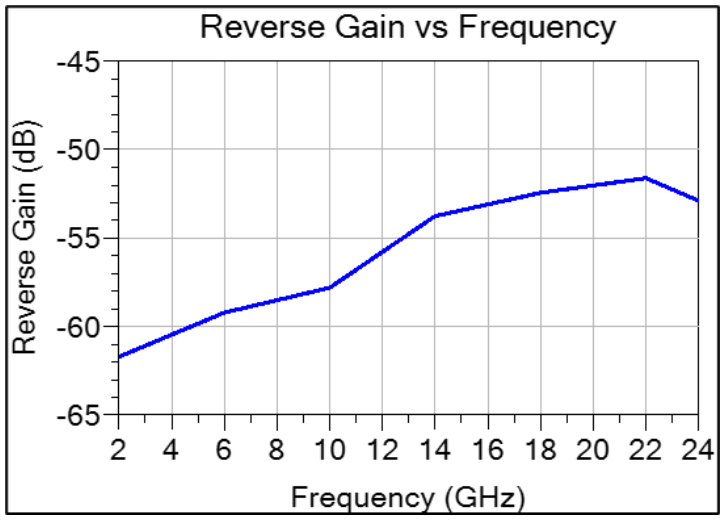
Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	14
	12 GHz		17.8
	20 GHz		15
Output P1 dB	2 GHz	dBm	
	12 GHz		17.4
	20 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	
	12 GHz		26.7
	20 GHz		
Noise Figure	2 GHz	dB	
	12 GHz		3.14
	20 GHz		
Input Return Loss	2 GHz	dB	2.91
	12 GHz		6.67
	20 GHz		6
Output Return Loss	2 GHz	dB	9
	12 GHz		20
	20 GHz		9.5
Operating Bias Conditions			
Drain Current (Id)	-	mA	140
Drain Voltage (VDD)	-	V	4
Gate Voltage (VGG)	-	V	-0.3

On Wafer Measured Performance Curve:

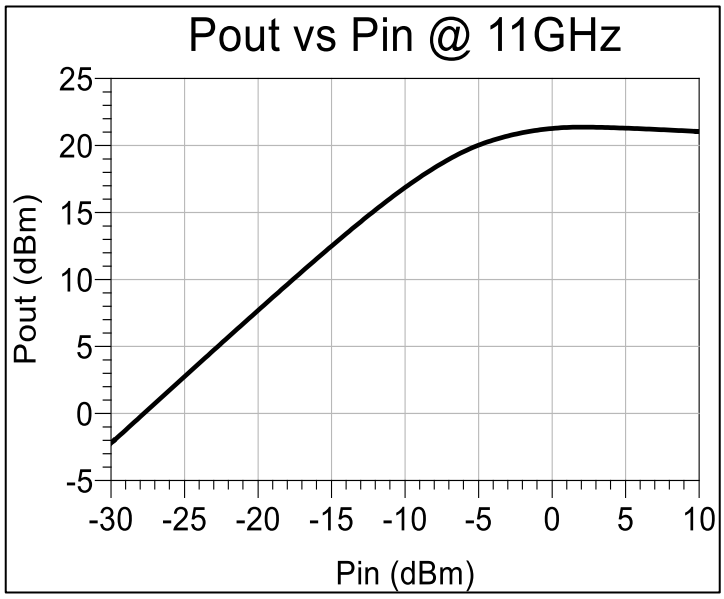


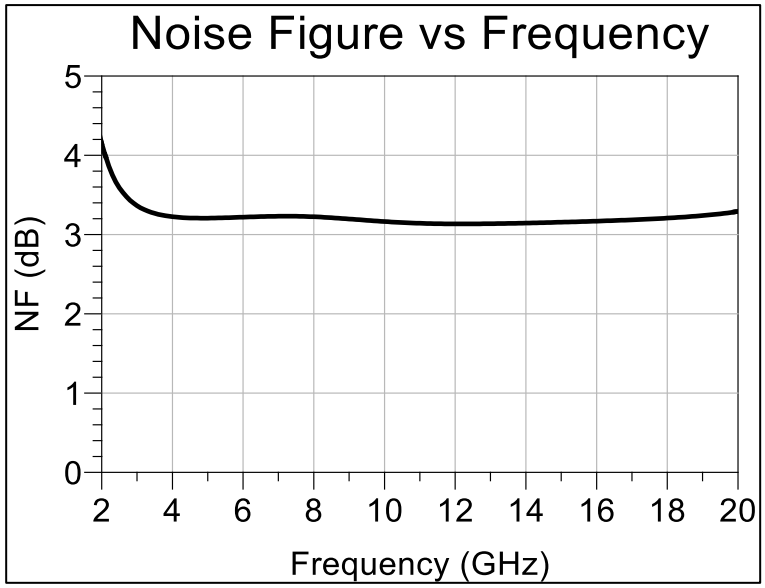


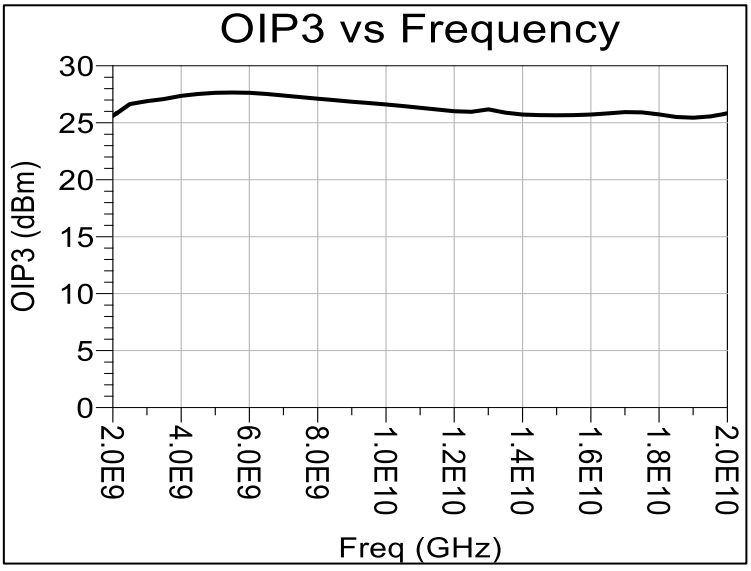




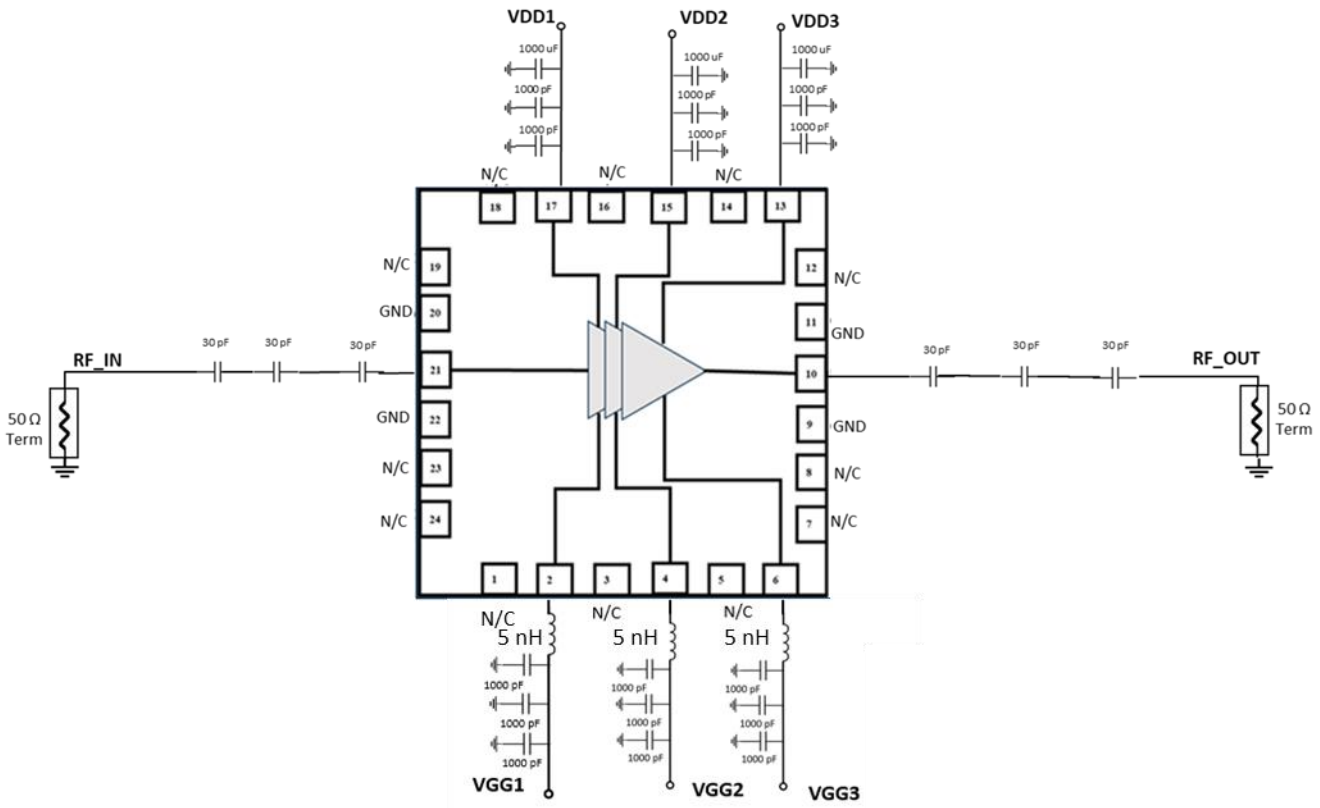
Typical Performance Curves:







Application Diagram:



Driver Amplifier

PRODUCT DATASHEET RFDA20

Disclaimer:

Information in this document is provided in connection with Signify RF products. These materials are provided by Signify RF as a service to its customers and may be used for informational purposes only. Except as provided in Signify RF Terms and Conditions of Sale for such products or in any separate agreement related to this document, Signify RF assumes no liability whatsoever. Signify RF assumes no responsibility for errors or omissions in these materials. Signify RF may make changes to specifications and product descriptions at any time, without notice. Signify RF makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

Contact information:

For the latest specifications, additional product information:

Web: www.signifyrf.com
Email: sales@signifyrf.com
Tel: (+1) 840 356 8957, (+91) 90220 78131, (+91) 84858 41789