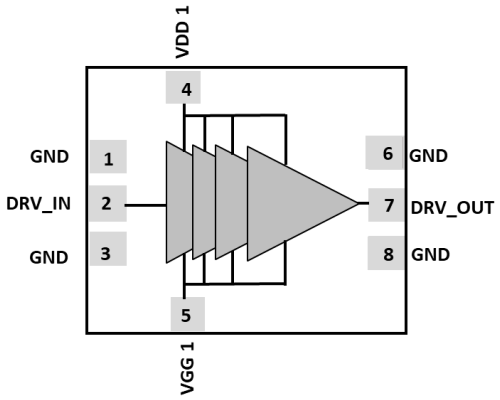
Driver Amplifier

PRE-RELEASE DATASHEET RFDA12A

Features:

- Operating Frequency : 35-42 GHz
- Small signal gain: 22 dB
- Input Return loss: 11.3 dB
- Output Return Loss: 9 dB
- Output P1dB: 19.4 dBm
- OIP3 is 34 dBm
- Bias: VDD1=VDD2=4V, VGG=-0.55V, ID=316 mA.
- 0.1um GaAs pHEMT Technology
- Die Size:

Functional Block Diagram:



Description:

RFDA12A is Four Stage Driver Amplifier operates from 35-42 GHz and it is used to drive the high-power amplifier. The amplifier provides 22 dB of small signal gain, 19.4dBm of Output P1dB. The input and output are matched to 50 ohms with on-chip DC blocking capacitors.

The device is specifically designed for use in 35-42 GHz frequency in Bluetooth, Zigbee, WiFi, IoT and SATCOM Application.

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

Pin Configuration:

Pin No.	Pin Name	Description
5	VGG1	Gate Bias Voltage
7	RF_OUT	RF Output
9, 11	VDD	Drain Bias Voltage
2	RF_IN	RF Input
1,3,6,8	GND	RF GND

Applications:

- Bluetooth
- Zigbee
- SATCOM
- IoT
- Wi Fi

Deliverables:

- Sample Ready Die
- Product Datasheet

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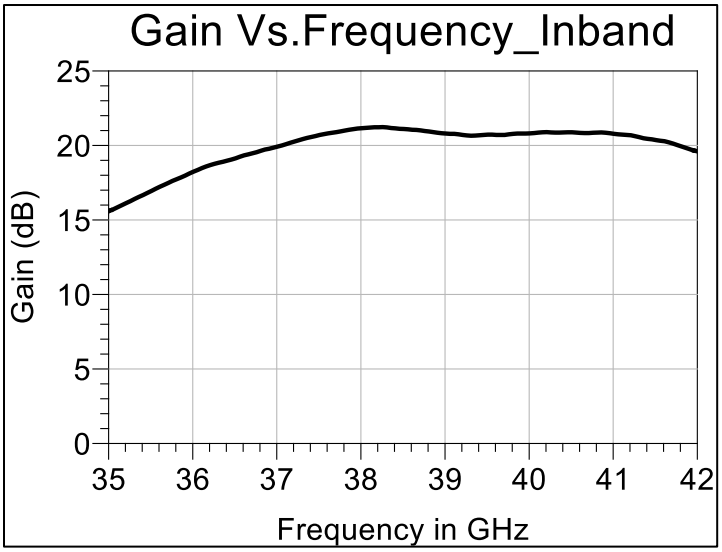
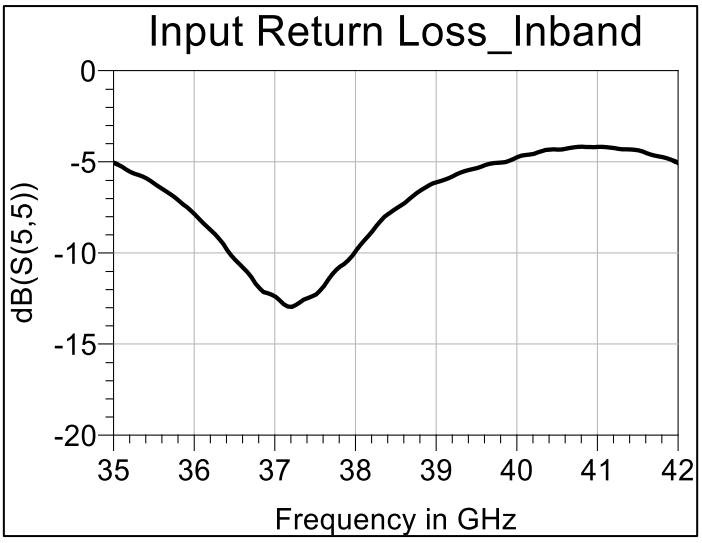
Electrical Specification:

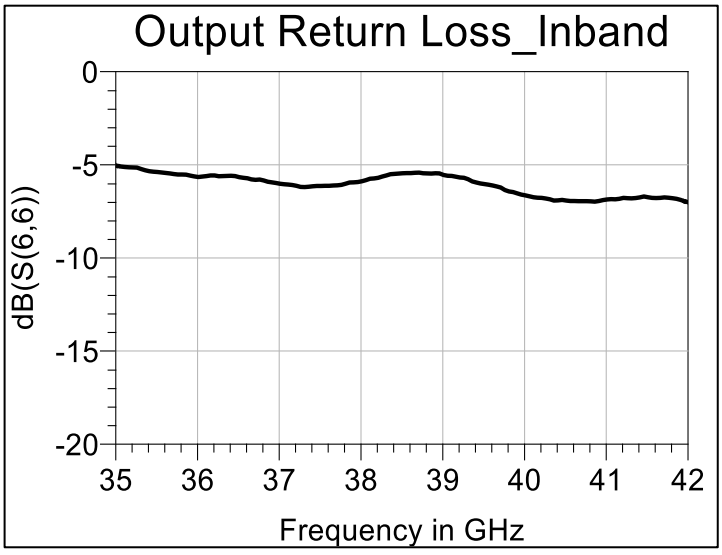
Freq= 35-42GHz, VDD1=VDD2=VDD3=4V, VGG1=VGG2=VGG3=-0.55 V, ID=316mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	35 GHz	dB	17.2
	38.5 GHz		22
	42 GHz		20
Output P1 dB	35 GHz	dBm	19.2
	38.5 GHz		19.4
	42 GHz		17.89
OIP3 Pin= -10 dBm Δf = 50MHz	35 GHz	dBm	32.3
	38.5 GHz		30.9
	42 GHz		27.2
Noise Figure	35 GHz	dB	
	38.5 GHz		-
	42 GHz		
Input Return Loss	35 GHz	dB	4.7
	38.5 GHz		11.3
	42 GHz		11
Output Return Loss	35 GHz	dB	7.4
	38.5 GHz		9
	42 GHz		9.3
Operating Bias Conditions			
Drain Current(Id)	-	mA	316
Drain Voltage (VDD)		V	4
Gate Voltage (VGG)	-	V	0.55

Typical Performance Curves:







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