Driver Amplifier

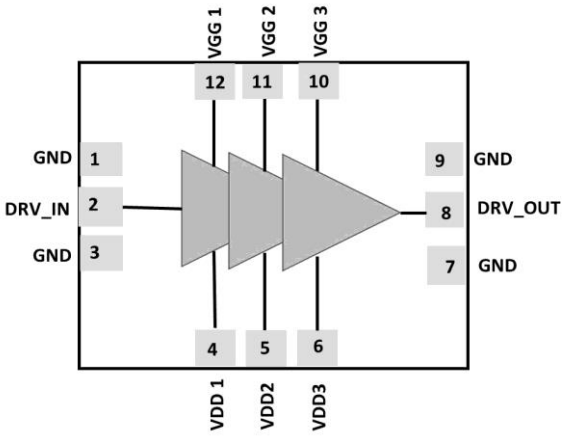
PRE-RELEASE DATASHEET

RFICDA06

Features:

RF Frequency: 24-30 GHz
Gain of 20 dB.
Output P1dB of 23.6 dBm.
OIP3 is 31.3 dBm.
Output Saturated Power: 25 dBm
Noise Figure : 3.4dB
Wideband Input and Output 50 ohm match.
Variable Gain with Adjustable Bias.
Bias:- VDD=4V, VGG=-0.55V, ID=173 mA.
0.1um GaAs pHEMT Technology.

Functional Block Diagram



Description:-

RFICDA06 Driver Amplifier operates from 24 – 30GHz and can be used in low power Ka band application or to drive the high power amplifier. The amplifier provides 20dB small signal gain and 24 dBm 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 24 - 30 GHz frequency in point-to-point radios for cellular backhaul Application, 5G RF Transceiver & SATCOM. The Technology used to design DA is 0.1um GaAs pHEMT Process.

Pin Configuration:-

Pin No.	Pin Name	Description
1	GND	RF Ground
2	DRV_IN	RF Input
3	GND	RF Ground
4	VDD 1	Drain Bias Voltage 1
5	VDD 2	Drain Bias Voltage 2
6	VDD 3	Drain Bias Voltage 3
7	GND	RF Ground
8	DRV_OUT	RF Output
9	GND	RF Ground
10	VGG 3	Drain Bias Voltage 3
11	VGG 2	Drain Bias Voltage 2
12	VGG 1	Drain Bias Voltage 1

Application:-

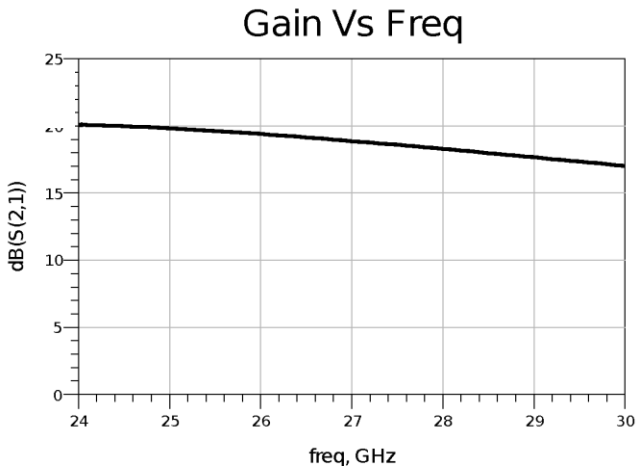
5G RF Transceiver.
Point to point communication system.
Backhaul application.
SATCOM.
IoT

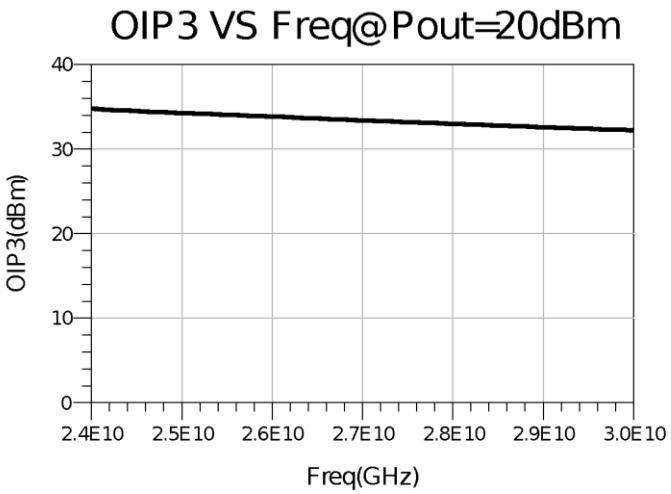
Electrical Specification:-

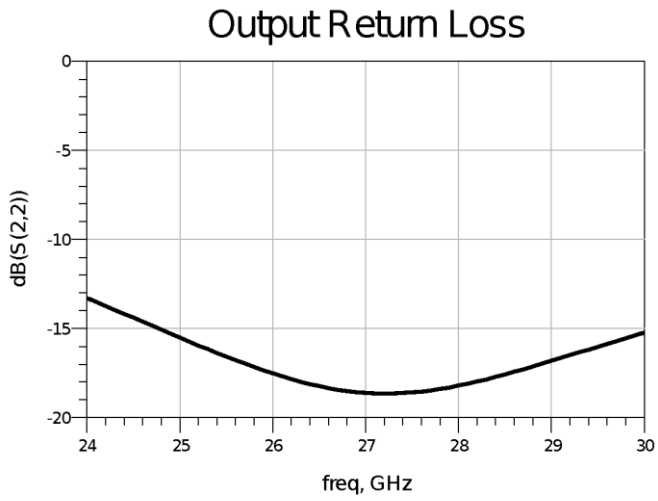
Freq= 24-30 GHz, VDD=4V, VGG=-0.55V, ID= 173 mA, Zo=50 Ω

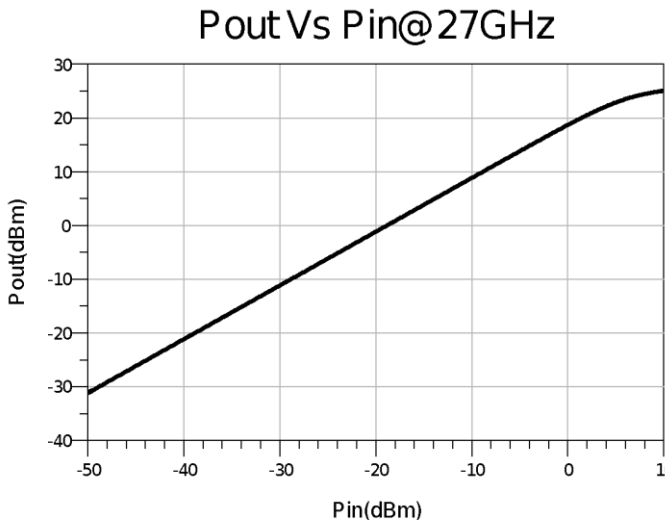
Parameters	Test Condition	Units	Typ
Gain	24 GHz	dB	20
	27 GHz		19
	30 GHz		17
Output P1 dB	24 GHz	dBm	23.6
	27 GHz		23.1
	30 GHz		22.5
OIP3 Pout= 20 dBm Δf = 200MHz	24 GHz	`	31.3
	27 GHz		31
	30 GHz		32.7
Noise Figure	24 GHz	dB	3.2
	27 GHz		3.4
	30 GHz		3.7
Input Return Loss	24 GHz	dB	-10.4
	27 GHz		-13.5
	30 GHz		-12.2
Output Return Loss	24 GHz	dB	-13.2
	27 GHz		-18.6
	30 GHz		-15.2
Isolation	24 GHz	dB	-60
	27 GHz		
	30 GHz		
Operating Bias Conditions			
Drain Current(Id)	-	mA	173
Drain Voltage (VDD)		V	4
Gate Voltage (VGG)	-	V	-0.55

Typical Performance Curves:-









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