Low Noise Amplifier

PRODUCT DATASHEET RFLN28

Features:

- RF Frequency: 26 – 30 GHz
- Small signal gain: 24.4 dB
- Noise Figure: 1.8 dB
- Output P1dB: 14.29 dBm.
- Saturated Output Power: 20.9 dBm.
- DC drain bias voltage: 4 V.
- Dc supply current: 58.3 mA.
- Dc Gate Bias Voltage: -0.6 V
- 0.1um GaAs pHEMT Technology.
- Die Size: 1.15 mm * 1.78 mm.

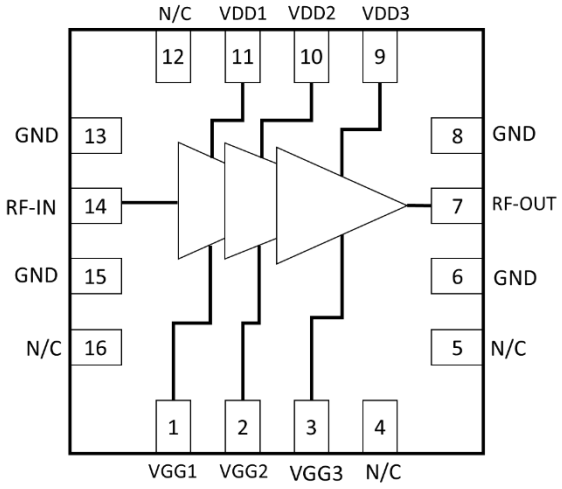
Applications:

- Radar
- Satellite communications
- Astronomical observations
- Automotive radar

Deliverables:

- Sample Ready Die
- Product Datasheet

Functional Block Diagram:



Pin Configuration:

Pin No.	Pin Name	Description
6,8,13,15	GND	Ground
11	VDD1	Drain Bias Voltage 1
10	VDD2	Drain Bias Voltage 2
9	VDD3	Drain Bias Voltage 3
1	VGG1	Gate Bias Voltage 1
2	VGG2	Gate Bias Voltage 2
3	VGG3	Gate Bias Voltage 3
14	RF-IN	RF Input
7	RF-OUT	RF Output
4,5,12,16	N/C	Not Connected

Description:

RFLN28 is a three-stage Low Noise Amplifier operating from 26-30 GHz, intended for front-end signal amplification in RF receiver systems. The amplifier provides 24.4 dB of small-signal gain, with input and output matched to 50 ohms using on-chip DC blocking capacitors.

The device is specifically designed for use in the 26-30 GHz frequency in Bluetooth, Zigbee, WiFi, IoT and SATCOM Application.

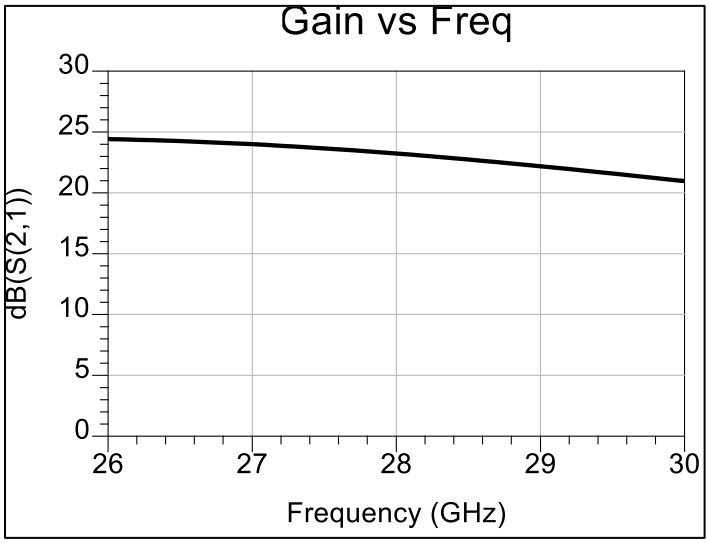
The Technology used to design the LNA is a 0.1um GaAs pHEMT Process.

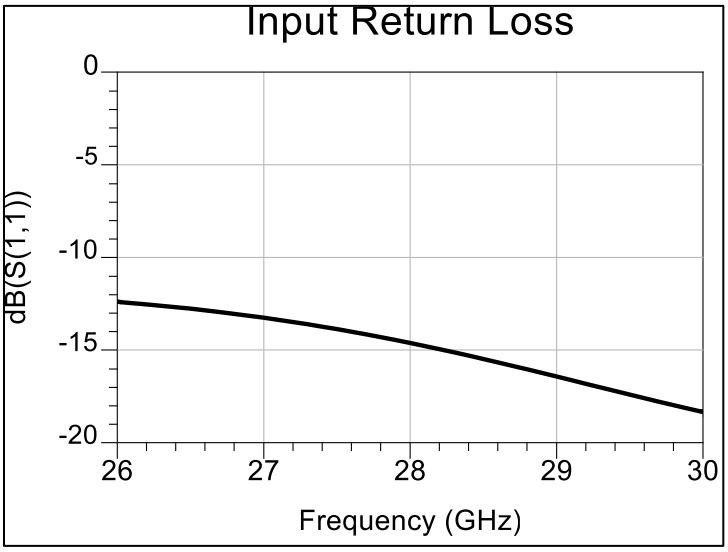
Electrical Specification:

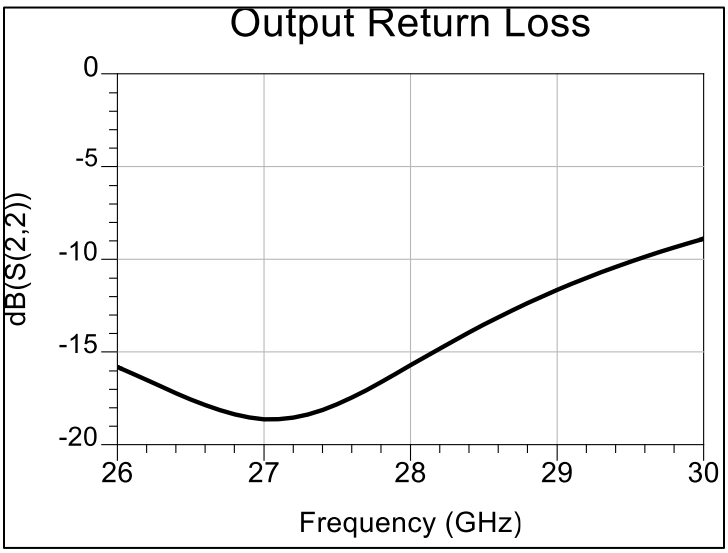
Freq= 26 - 30 GHz, VDD1=VDD2= VDD3= 4V, VGG1=VGG2= VGG3= -0.6 V, ID= 58.3 mA, Zo=50 Ω

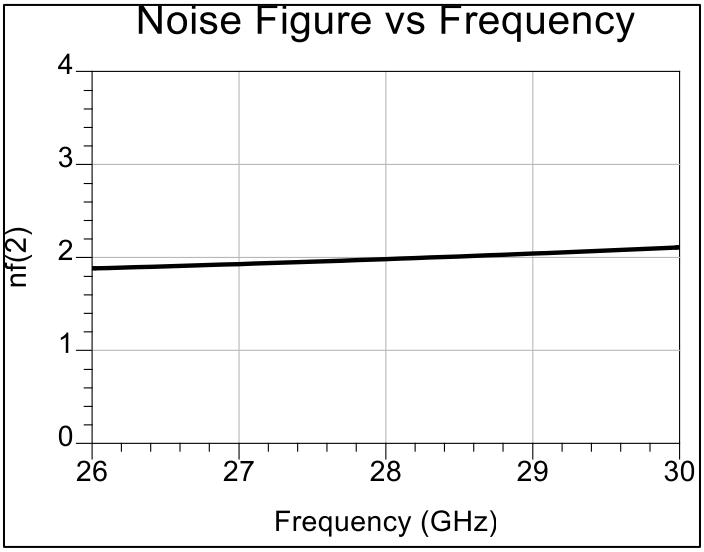
Parameters	Test Condition	Units	Typ
Gain	26 GHz	dB	24.8
	28 GHz		24.4
	30 GHz		22
Output P1 dB	26 GHz	dBm	14.3
	28 GHz		
	30 GHz		
OIP3 Pin = 1 dBm Δf = 50MHz	26 GHz	dBm	25
	28 GHz		
	30 GHz		
Noise Figure	26 GHz	dB	1.9
	28 GHz		2
	30 GHz		2.1
Input Return Loss	26 GHz	dB	12
	28 GHz		15.5
	30 GHz		18
Output Return Loss	26 GHz	dB	16
	28 GHz		16
	30 GHz		9
Operating Bias Conditions			
Drain Current(Id)	-	mA	58.3
Drain Voltage (VDD)	-	V	4
Gate Voltage (VGG)	-	V	-0.6

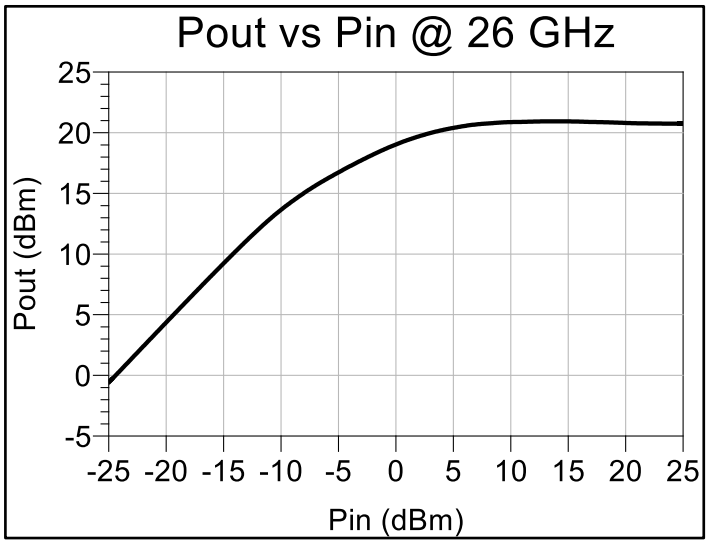
Typical Performance Curves:

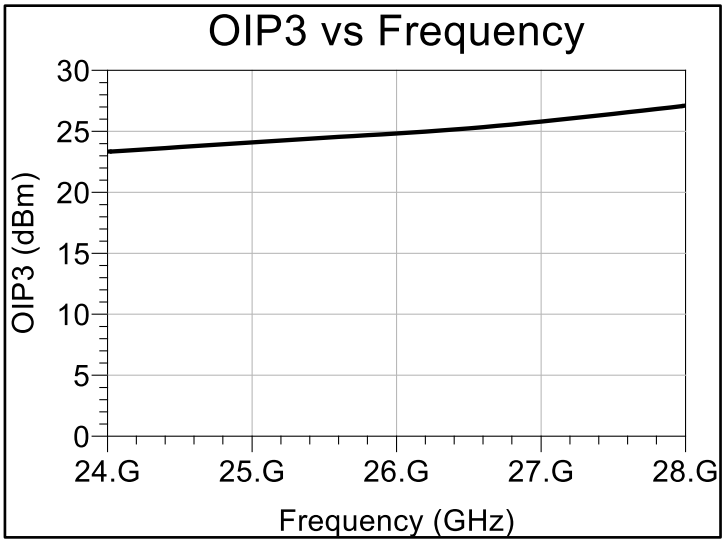


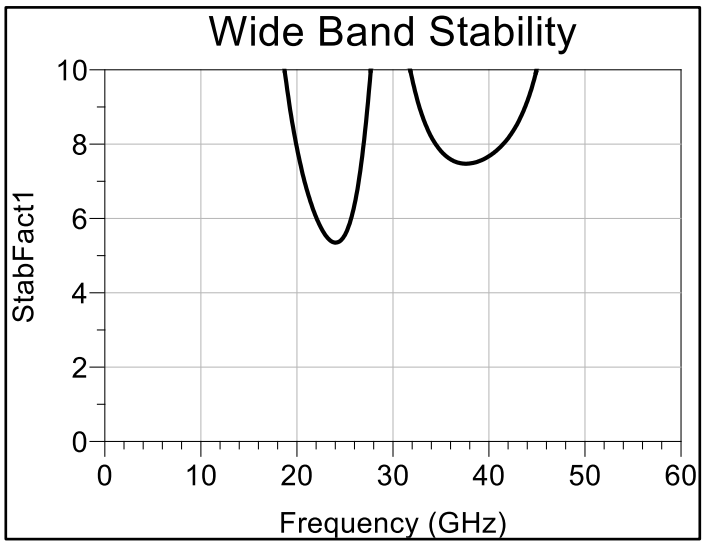












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