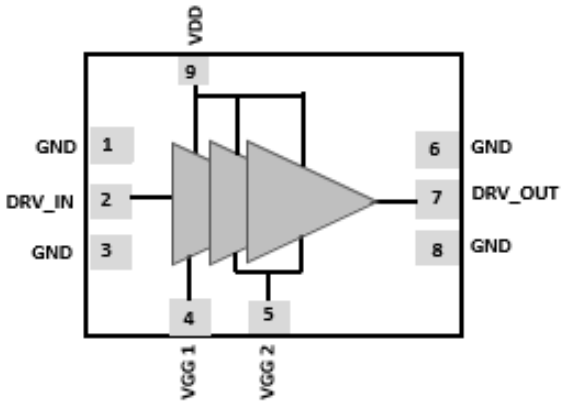
Low Noise Amplifier

PRE-RELEASE DATASHEET RFLN30R

Features:-

- RF Frequency: 18-30GHz
- Noise Figure of 2.2dB
- Small Signal Gain of 22dB
- Input return loss: 16dB
- Output return loss: 17dB
- Output P1dB: 15dBm
- Saturated output power: 23dBm
- DC drain bias voltage 4V
- DC supply current 100mA
- 0.1um GaAs pHEMT Technology

Functional Block Diagram:-



Description:-

RFLN30R is aTHREE stage low noise amplifier for K, KA band with flat gain over wide bandwidth,low Noise Figure, high isolation, stability and high linearity. The LNA is designed to operate from 18-30GHz using 0.1um GaAs pHEMT process.

The designed LNA, bias current and gain can be set with the gate bias to allow the user to customize the current, gain and NF value to fit the application.

The RFLN30R offers 2.2 dB noise figure, 22dB of small signal gain, OP1dB of 15 dBm with low noise figure along with the flexibility of setting current and gain makes this LNA an ideal front end amplifier in 5G and SATCOM Application.

Results are shown with all parasatics & coupling effects at desire frequency.

Pin Configuration:-

Pin No.	Pin Name	Description
1, 3, 6, 8	GND	RF Ground
2	DRV_IN	Driver Input
7	DRV_OUT	Driver Output
9	VDD	Drain Bias Voltage
4	VGG1	Gate Bias Voltage1
5	VGG2	Gate Bias Voltage2

Applications:-

- 5G RF transceiver.
- Satellite Communication.
- Point to point communication system.
- Radar Application.

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Electrical Specification:-

Freq = 18-30GHz, VDD1=VDD2=4 V, ID= 100 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	18GHz	dB	19
	25GHz		22
	30GHz		23
Output P1dB	18GHz	dBm	
	25GHz		
	30GHz		
OIP3 Pin = -15dBm Δf = 200MHz	18GHz	dBm	-
	25GHz		
	30GHz		
Noise Figure	18GHz	dB	2.19
	25GHz		2.2
	30GHz		2.3
Input Return Loss	18GHz	dB	5
	25GHz		16
	30GHz		8
Output Return Loss	18GHz	dB	4.5
	25GHz		25
	30GHz		10
Drain Current (Id)	-	mA	100
Drain Voltage (VDD)	-	V	4
Gate Voltage (VGG)	-	V	---

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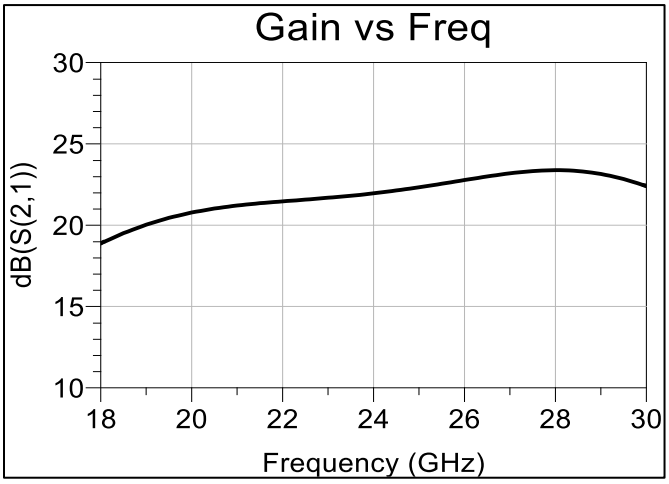
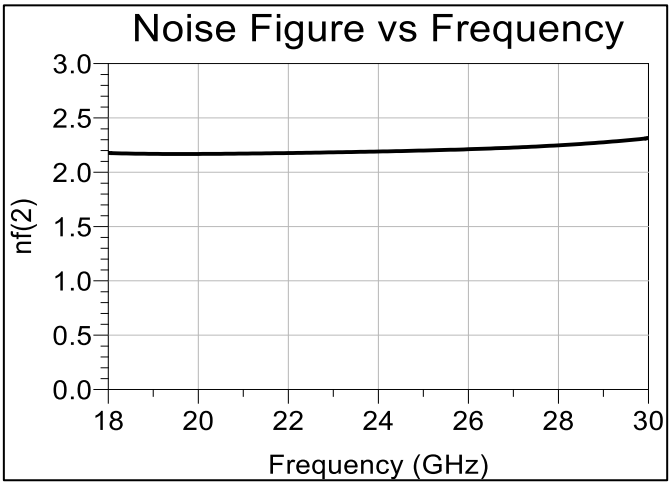
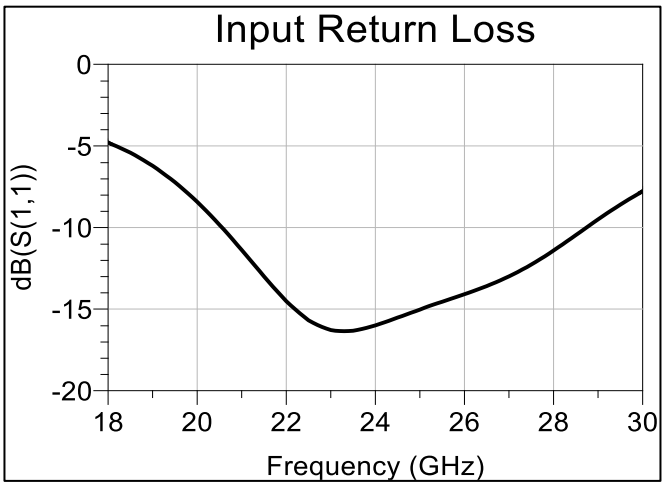
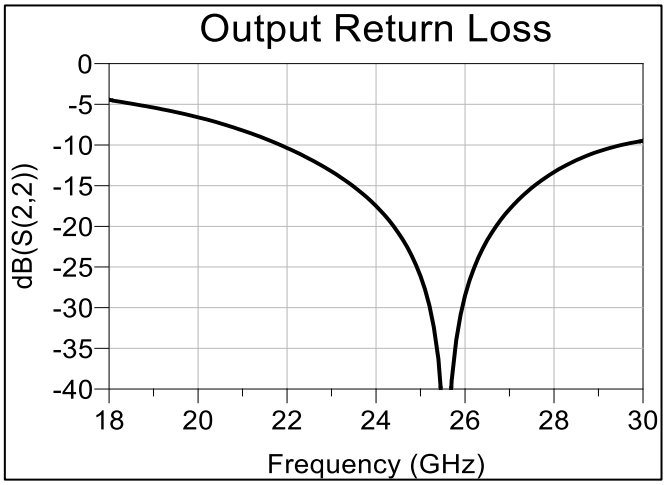
Typical Performance Curve:-









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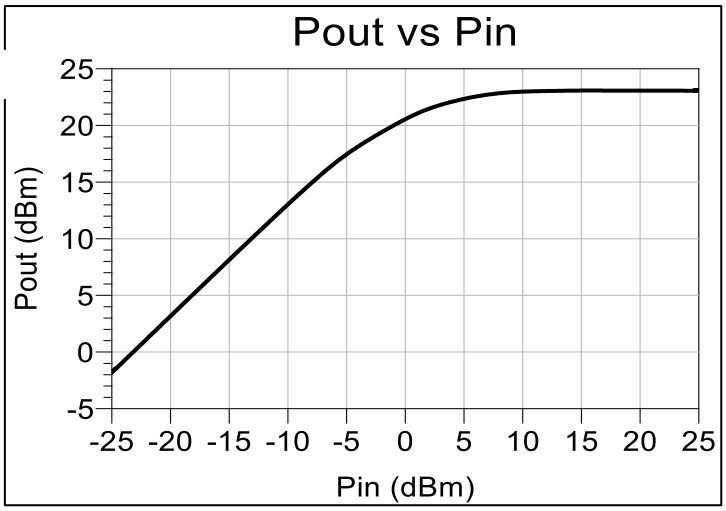

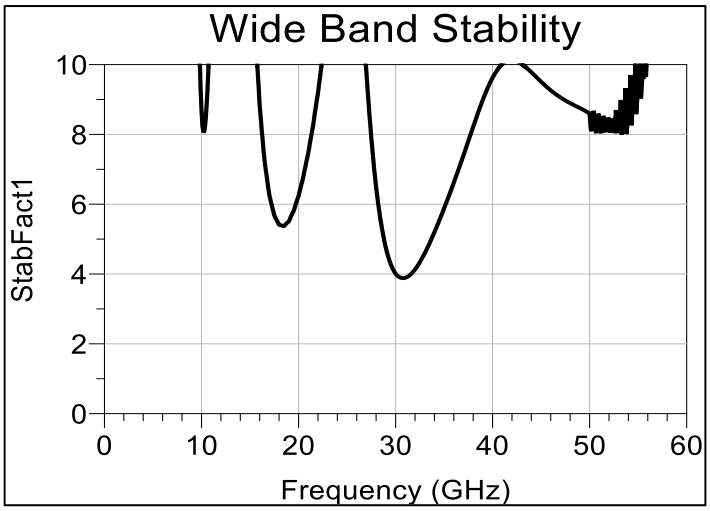

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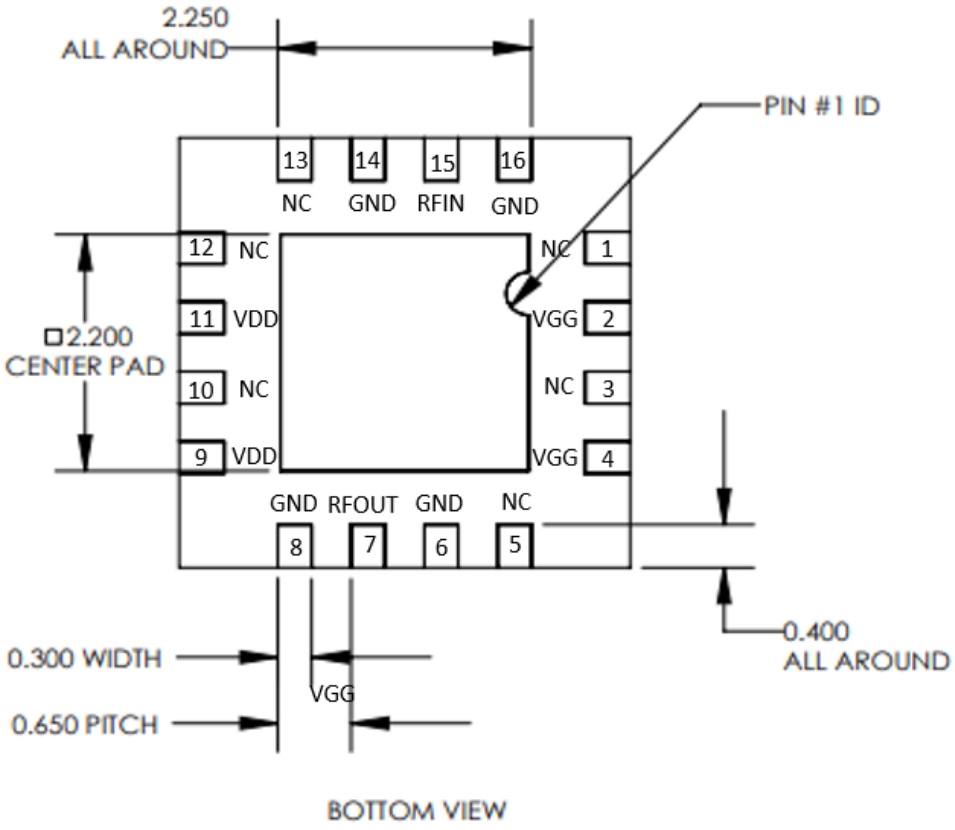

Functional Description:

Pin number	Pin name	Description
1,3,5,10,12,13	NC	Not Connected
6,8,14,16	GND	RF Ground
9,11	VDD	Drain Bias voltage
2,4	VGG	Gate Bias voltage
15	RF_IN	RF Input
7	RF_OUT	RF Output

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Disclaimer

Contact information

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