Low Noise Amplifier

PRODUCT DATASHEET RFLN08S

Features:

- RF Frequency: 2 - 8 GHz
- Small signal gain: 20.16 dB
- Noise Figure: 1.9 dB
- Output P1dB: 4.18 dBm
- Saturated Output Power: 12 dBm
- DC drain bias voltage: 4.5 V
- DC supply current: 58.7 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 1.15 mm * 1.02 mm

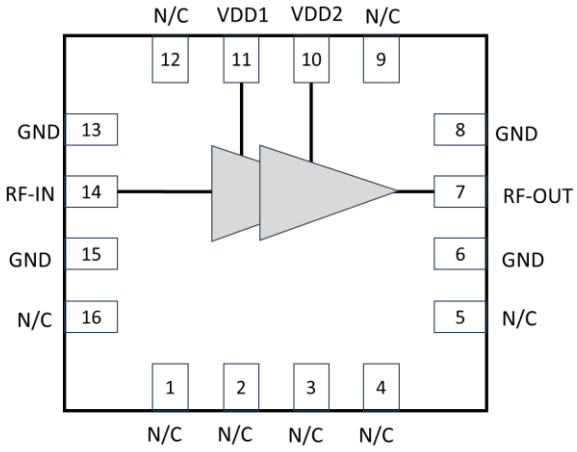
Applications:

- Fixed Wireless Broadband
- Microwave Links
- SATCOM
- IoT
- Wi-Fi
- Radar Systems

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
14	RF-IN	RF Input
7	RF-OUT	RF Output
1,2,3,4,5,9,12,16	N/C	Not Connected

Description:

RFLN08S is a two-stage self-biased Low Noise Amplifier operating from 2–8 GHz, primarily intended for front-end signal amplification in RF receiver chains. It provides 20.16 dB of small-signal gain, with input and output matched to 50 ohms using an off-chip matching network.

The device is specifically designed for use at 2-8 GHz frequency in fixed wireless broadband, microwave links, WiFi, IoT, and SATCOM, Radar Systems applications.

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

Electrical Specification:

Freq= 2 - 8 GHz,VDD1=VDD2= 4.5V, ID= 58.7 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	21.03
	5 GHz		20.16
	8 GHz		17.78
Output P1 dB	2 GHz	dBm	-
	5 GHz		4.18
	8 GHz		-
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	-
	5 GHz		12.5
	8 GHz		-
Noise Figure	2 GHz	dB	-
	5 GHz		1.9
	8 GHz		-
Input Return Loss	2 GHz	dB	2.68
	5 GHz		14.47
	8 GHz		7.01
Output Return Loss	2 GHz	dB	25.30
	5 GHz		13.57
	8 GHz		9.22
Operating Bias Conditions			
Drain Current (Id)	-	mA	58.7
Drain Voltage (VDD)	-	V	4.5

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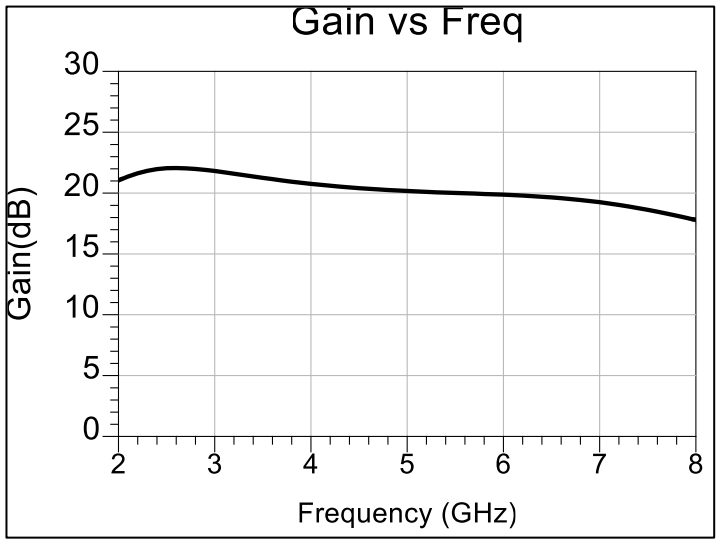
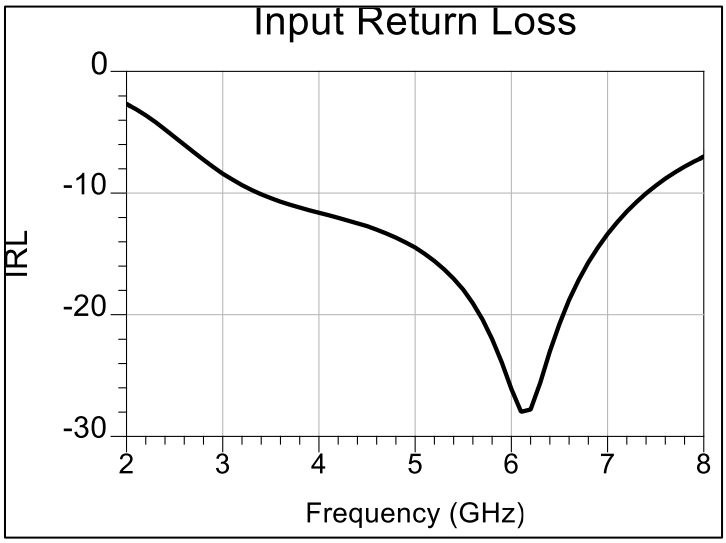
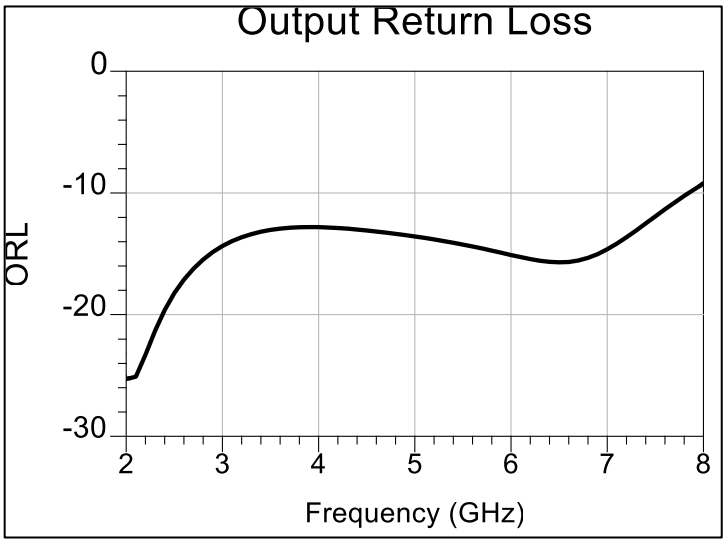
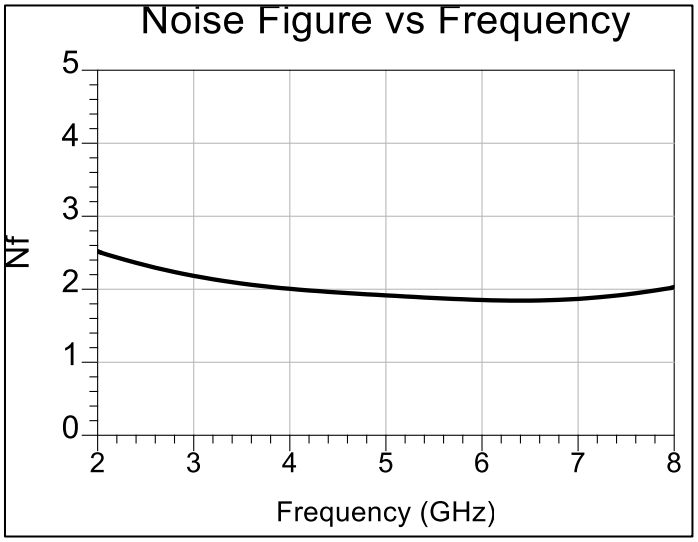
Typical Performance Curve:









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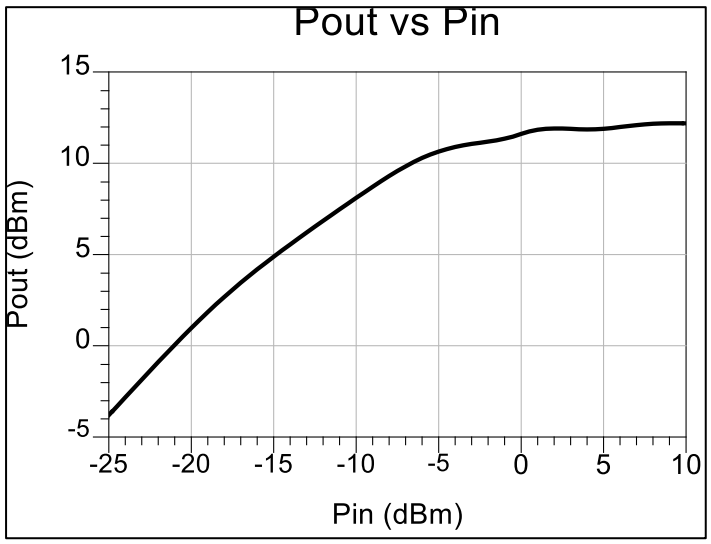
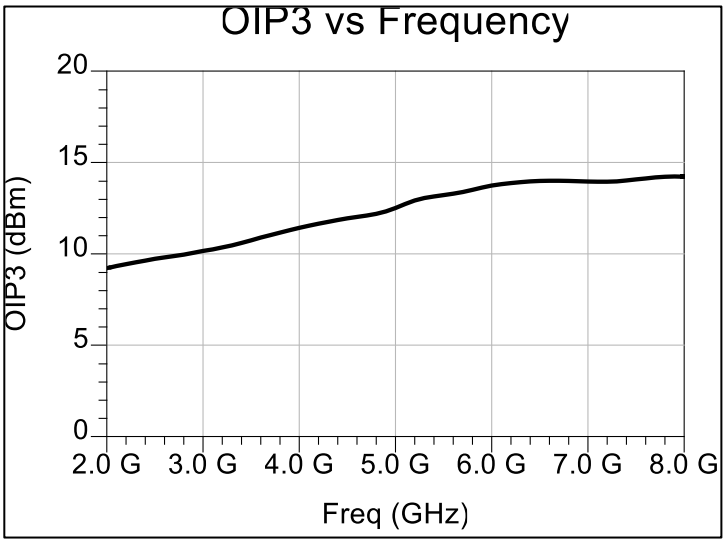
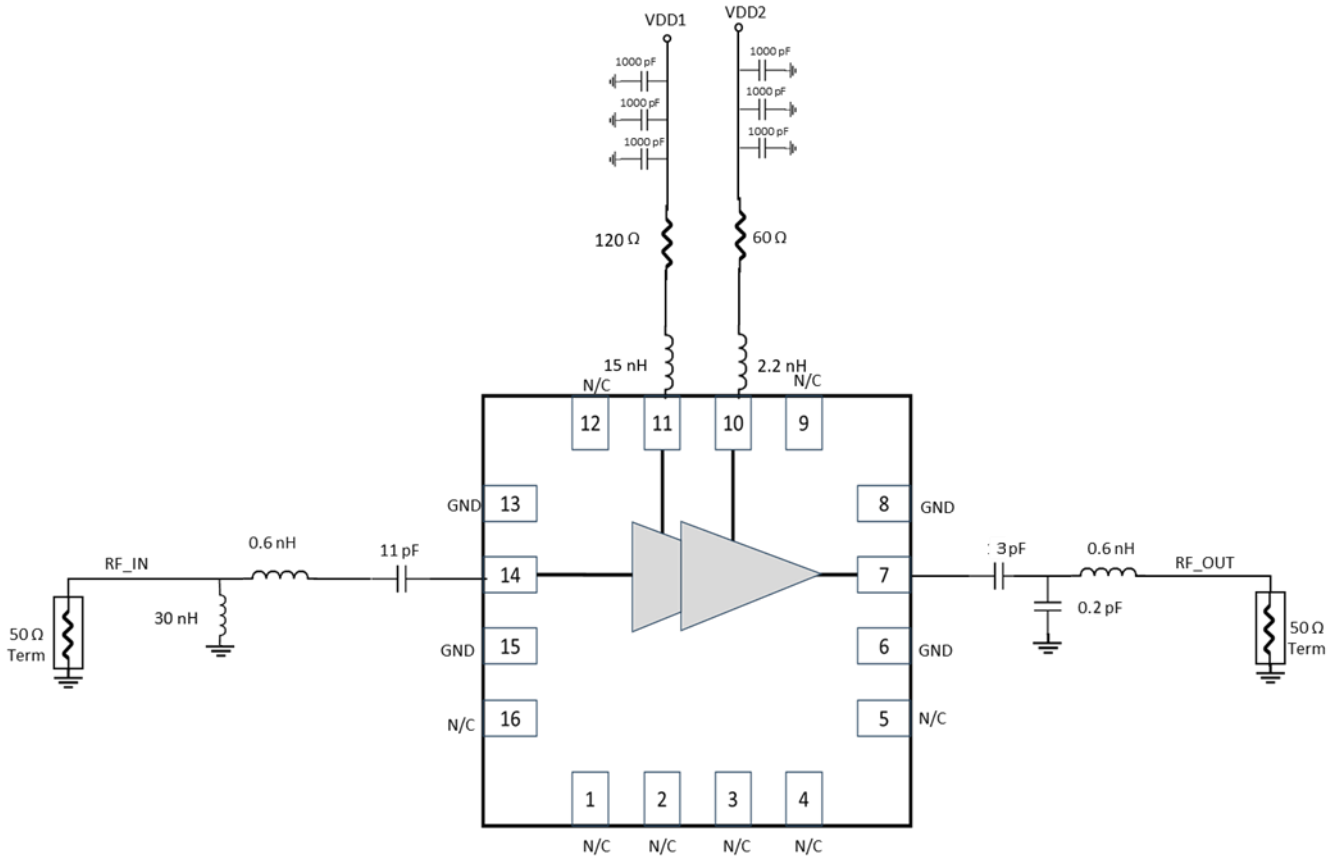




Application Diagram:



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