Low Noise Amplifier

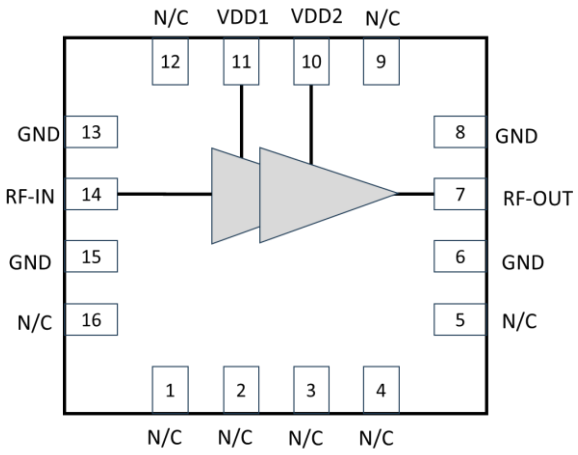
8 – 12 GHz

RFLN12S

Features:

- RF Frequency: 8 - 12 GHz
- Small signal gain: 22.07 dB
- Noise Figure: 1.83 dB
- Output P1dB: 11.04 dBm
- Saturated Output Power: 14 dBm
- DC drain bias voltage: 4 V
- DC supply current: 150 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 1.15 mm * 1.02 mm

Functional Block Diagram



Description:

RFLN12S is a Two-stage self-biased Low Noise Amplifier that operates from 8-12 GHz and it is used to drive the high-power amplifier. The amplifier provides 22.07 dB of small signal gain, and the input and output are matched to 50 ohms with an off-chip Matching Network.

The device is specifically designed for use at 8-12 GHz frequency in fixed wireless broadband, microwave links, WiFi, IoT, and SATCOM, Radar Systems applications.

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

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

Applications:

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

Deliverables:

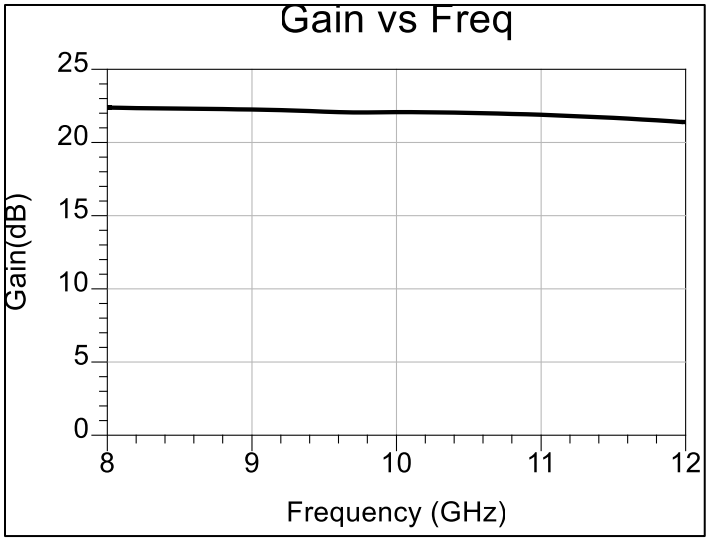
- Sample Ready Packaged Die
- Test Results
- Product Datasheet

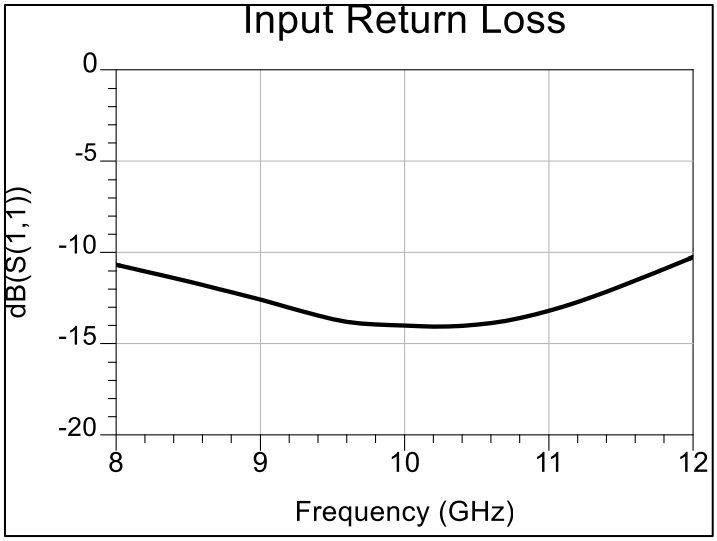
Electrical Specification:

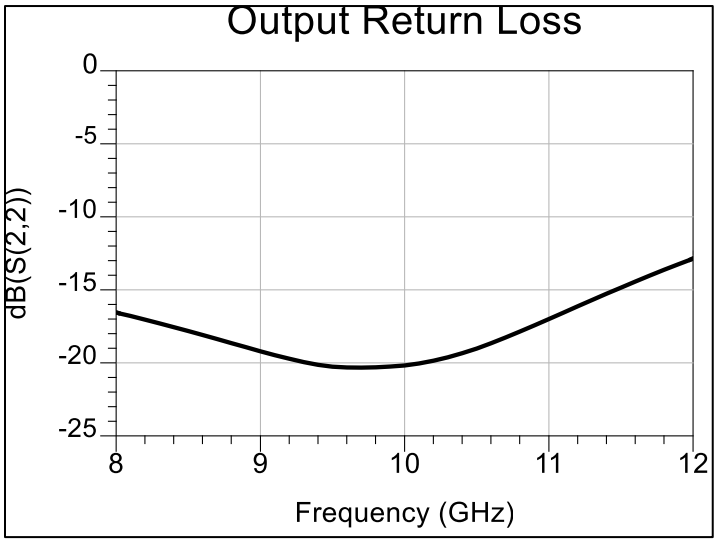
Freq= 8 - 12 GHz, VDD1=VDD2= 4V, ID= 150 mA, Zo=50 Ω

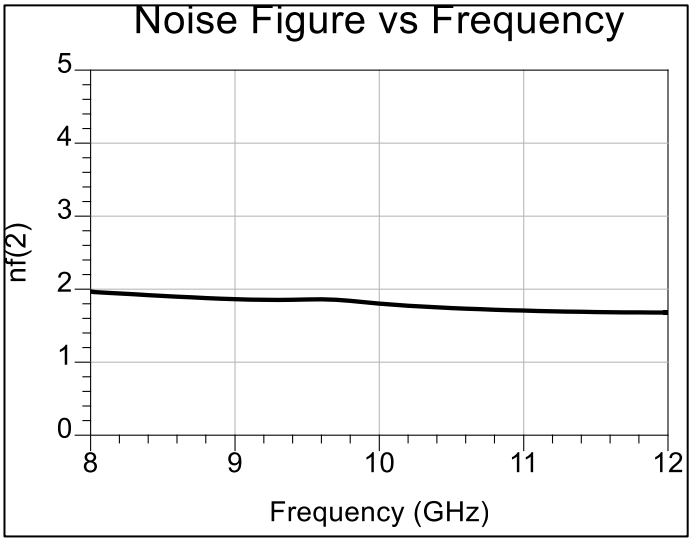
Parameters	Test Condition	Units	Typ
Gain	8 GHz	dB	22.38
	10 GHz		22.07
	12 GHz		21.38
Output P1 dB	8 GHz	dBm	-
	10 GHz		11.04
	12 GHz		-
OIP3 Pin= 1 dBm Δf = 50MHz	8 GHz	dBm	-
	10 GHz		23.7
	12 GHz		-
Noise Figure	8 GHz	dB	-
	10 GHz		1.83
	12 GHz		-
Input Return Loss	8 GHz	dB	10.48
	10 GHz		14.01
	12 GHz		10.27
Output Return Loss	8 GHz	dB	16.55
	10 GHz		20.18
	12 GHz		12.87
Operating Bias Conditions			
Drain Current (Id)	-	mA	150
Drain Voltage (VDD)	-	V	4

EVB Measured Performance Curves:

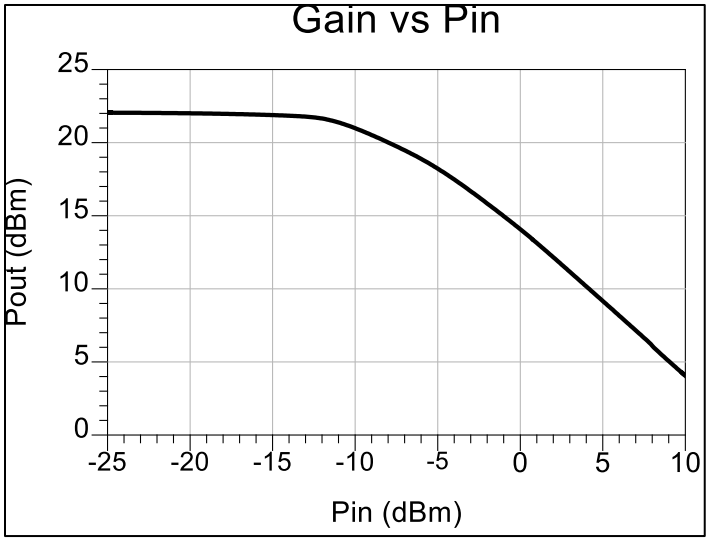


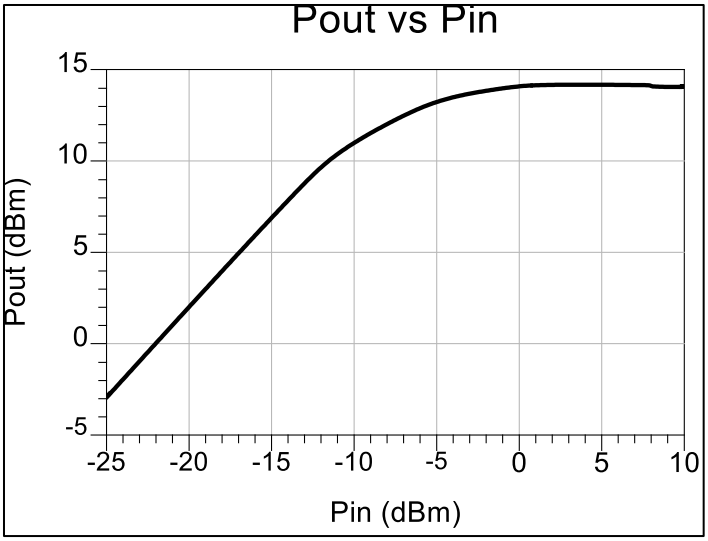


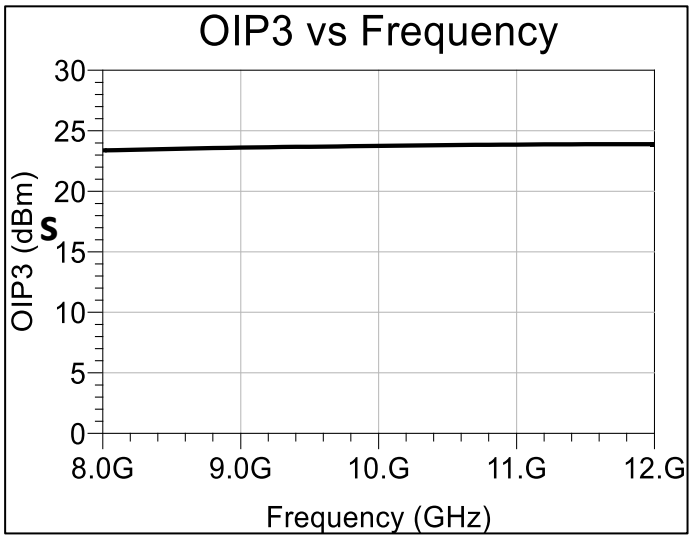




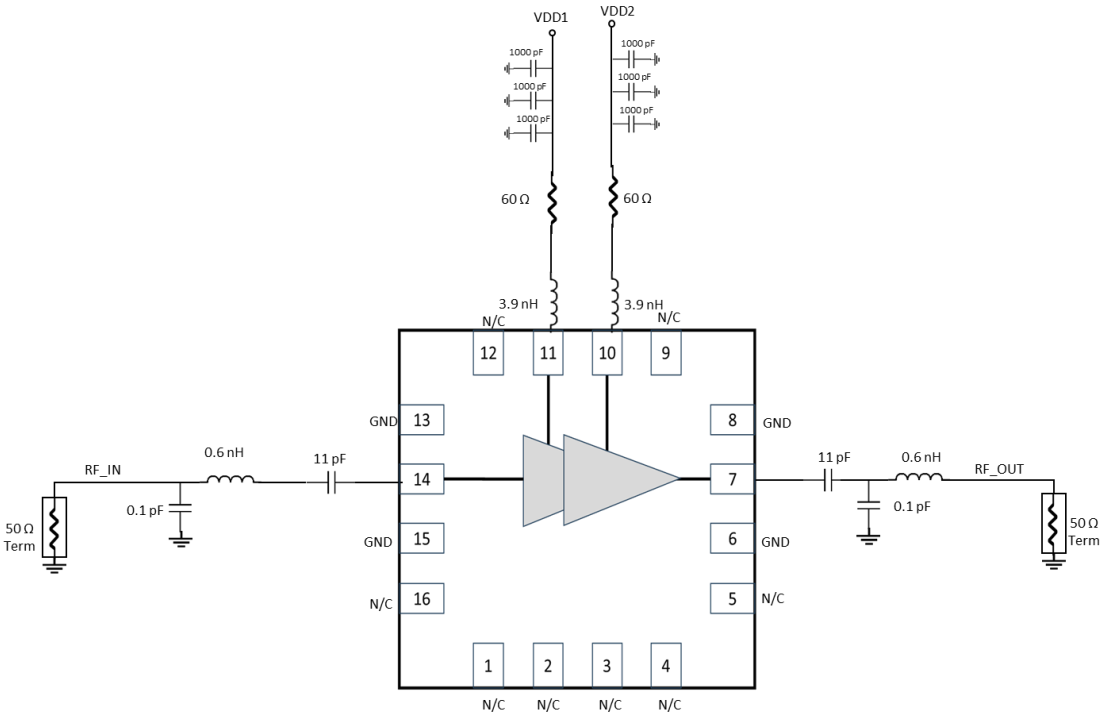
Typical Performance Curves:







Application Diagram:



Disclaimer:

Contact information

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