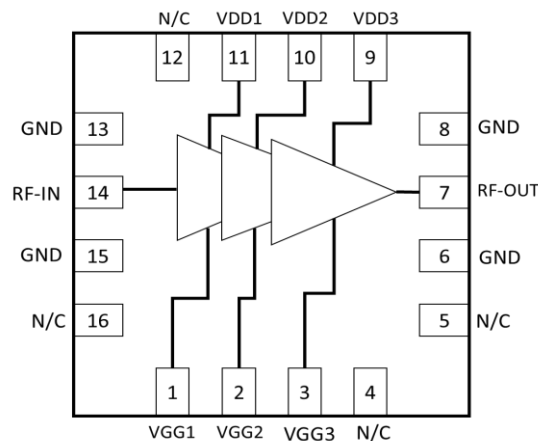


### Features:

- RF Frequency: 8- 12 GHz
- Small signal gain: 14.53 dB
- Noise Figure: 1.78 dB
- Output P1dB: 17.8 dBm
- Saturated Output Power: 20.8 dBm
- DC drain bias voltage: 5 V
- DC supply current: 200 mA.
- DC Gate Bias Voltage: -0.3 V
- 0.1um GaAs pHEMT Technology.
- Die Size: 1.15 mm \* 1.78 mm.

### Functional Block Diagram



### Description:

RFLNAM12 is Three Stage Low Noise Amplifier operates from 8 - 12 GHz and it is used to drive the high-power amplifier. The amplifier provides 14.53 dB of small signal gain; the input and output are matched to 50 ohms with on-chip DC blocking capacitors.

The device is specifically designed for use in 8 – 12 GHz frequency in Fixed Wireless Broadband, Microwave Links Wi-Fi, IoT, SATCOM, Radar Systems Application.

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
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

### Applications:

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

### Deliverables:

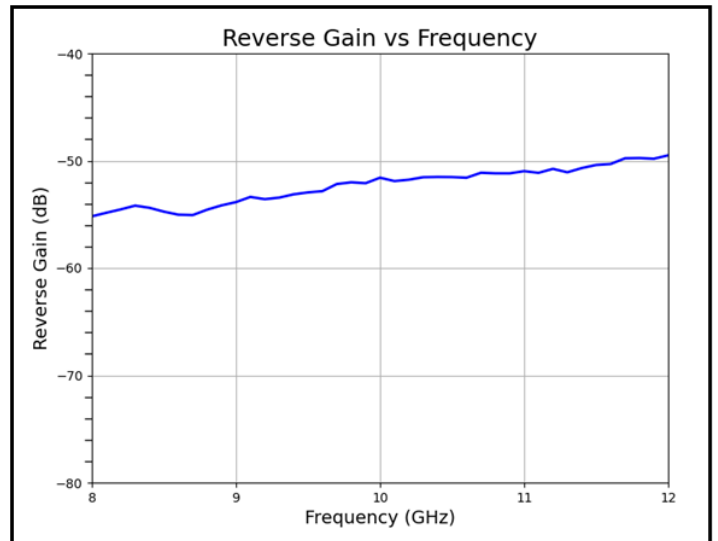
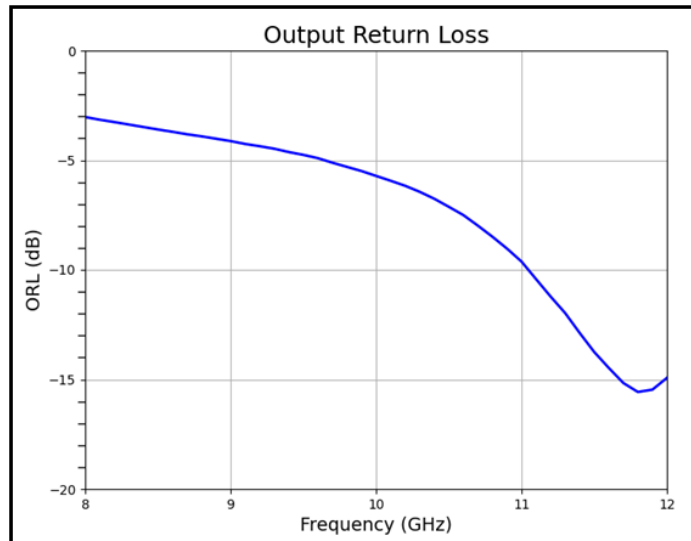
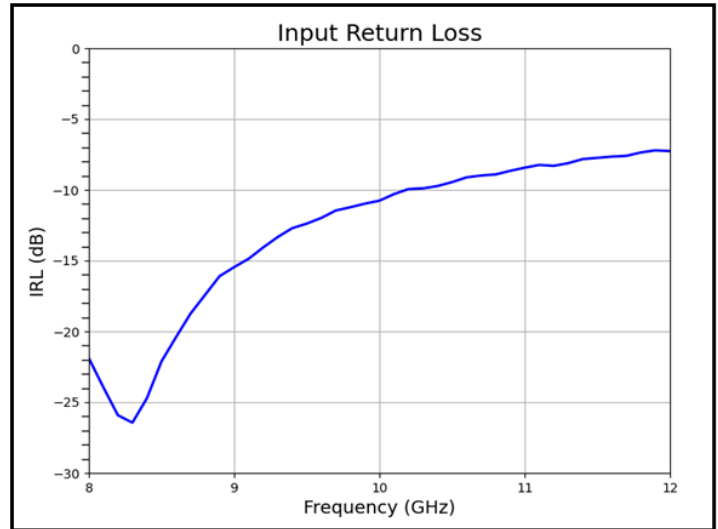
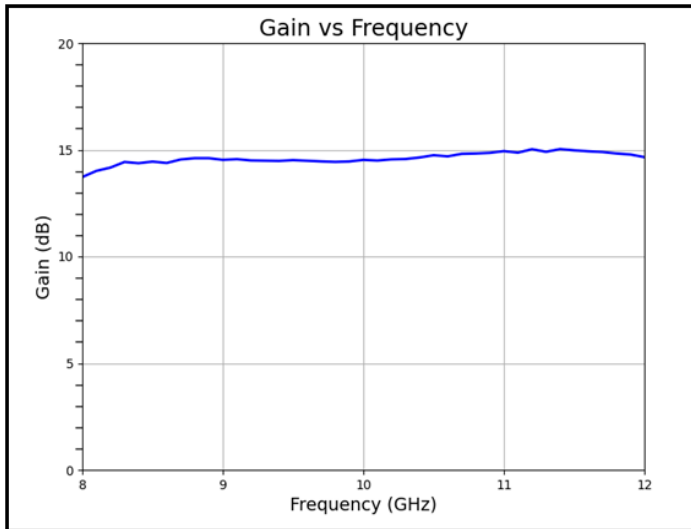
- Packaged ready Die
- Test Results
- Product Datasheet

### Electrical Specification

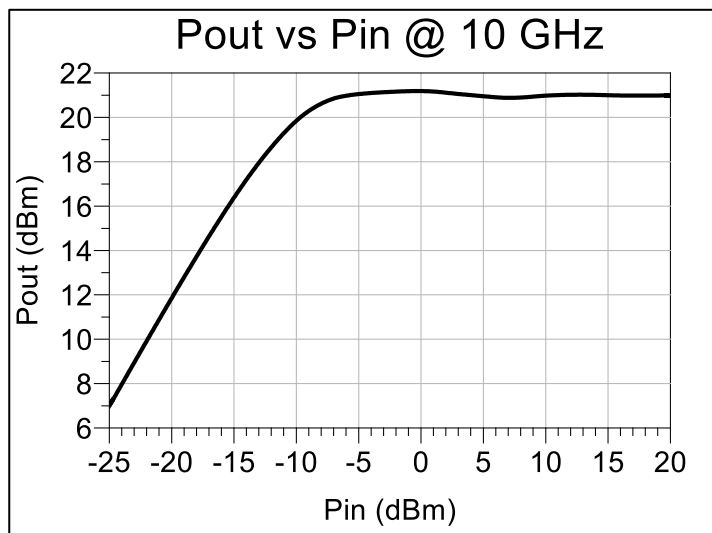
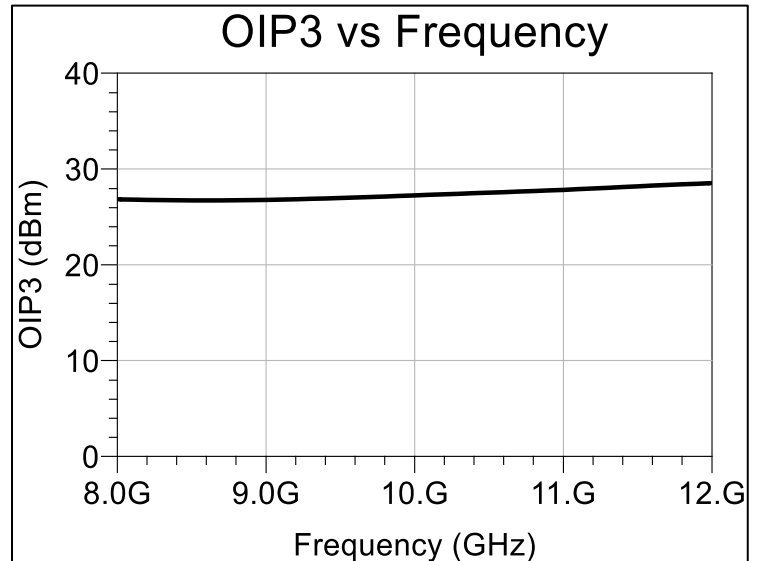
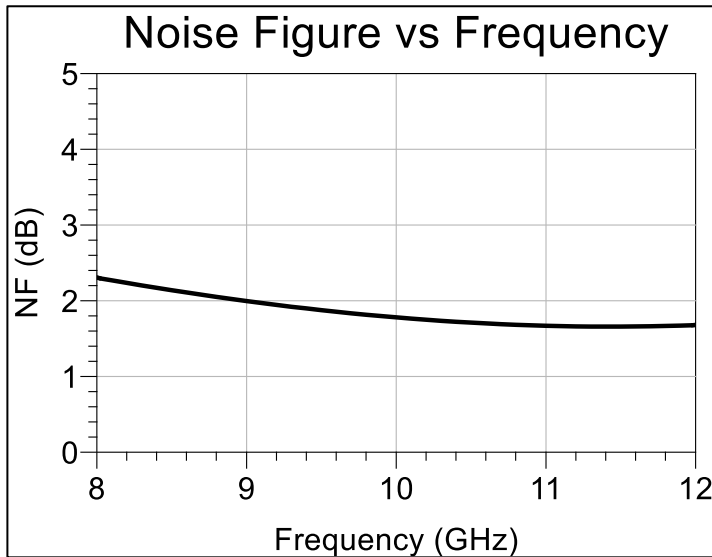
Freq= 8 - 12 GHz, VDD1=VDD2= VDD3=5V, VGG1=VGG2=VGG3= -0.3V, ID= 200 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	8 GHz	dB	14.53
	10 GHz		
	12 GHz		
Output P1 dB	8 GHz	dBm	17.8
	10 GHz		
	12 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	8 GHz	dBm	27.2
	10 GHz		
	12 GHz		
Noise Figure	8 GHz	dB	1.78
	10 GHz		
	12 GHz		
Input Return Loss	8 GHz	dB	9.82
	10 GHz		9.45
	12 GHz		6.03
Output Return Loss	8 GHz	dB	2.13
	10 GHz		7.12
	12 GHz		4.12
<b>Operating Bias Conditions</b>			
Drain Current (Id)	-	mA	200
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.3

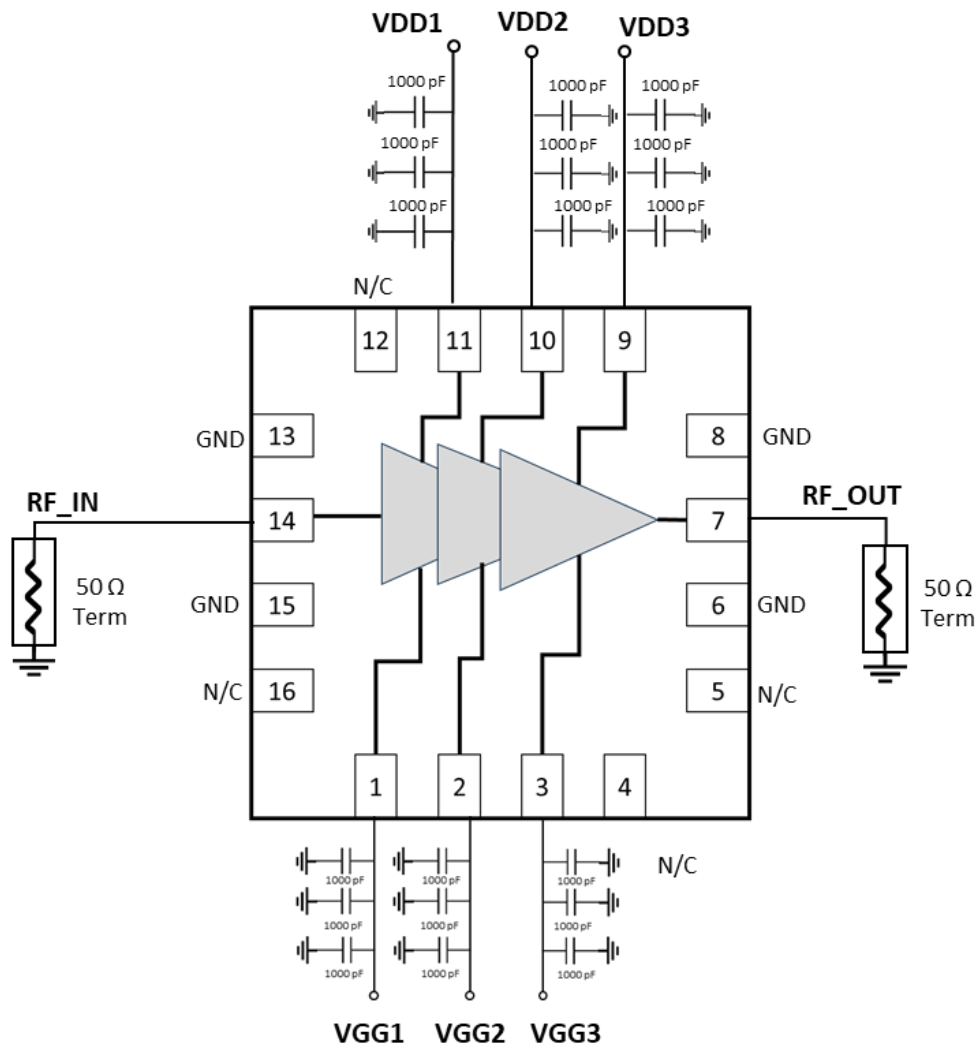
### On Wafer Performance Curves:



### Typical Performance Curves:



### Application Diagram:



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