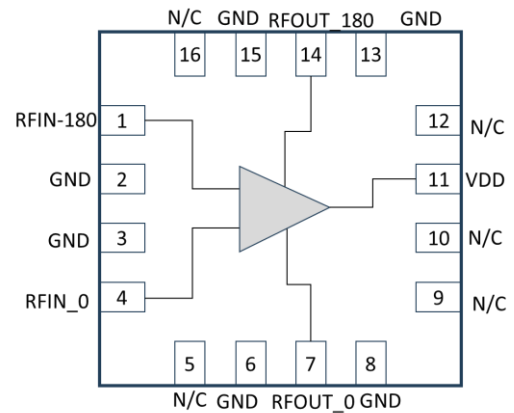


### Features:

- RF Frequency: DC-12 GHz
- Small signal gain: 7.8 dB
- Output P1dB: 5.13 dBm
- Saturated Output Power: 5.13 dBm
- DC drain bias voltage: 5 V
- Dc supply current: 135 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 0.65 mm \* 1.45 mm

### Functional Block Diagram



### Description:

RFDA12 is Differential Amplifier operates from DC-12 GHz and it is used designed to amplify the difference between two input signals while rejecting common-mode noise or interference present in both inputs. The amplifier provides 7.8 dB of small signal gain, the input and output are matched to 50 ohms.

The device is specifically designed for use in DC-12 GHz frequency in Audio system, Medical Instrumentation, Automotive system and Industrial Control system Application.

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

### Pin Configuration

Pin No.	Pin Name	Description
5,9,10,12,16	N/C	Not Connected
2,3,6,8,13,15	GND	Ground
11	VDD	Drain Bias Voltage
1	RFIN_180	RF Input_180
4	RFIN_0	RF Input_0
14	RFOUT_180	RF Output_180
7	RFOUT_0	RF Output_0

### Applications:

- Audio system.
- Medical Instrumentation.
- Automotive system.
- Industrial Control system.

### Deliverables:

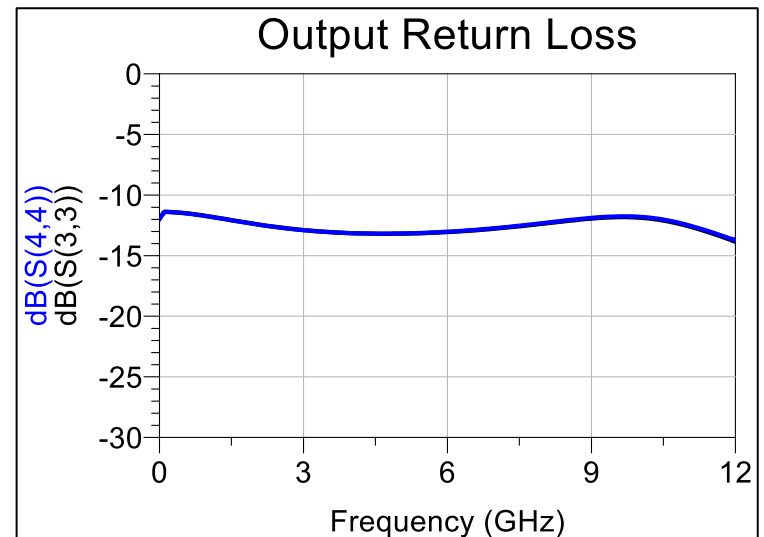
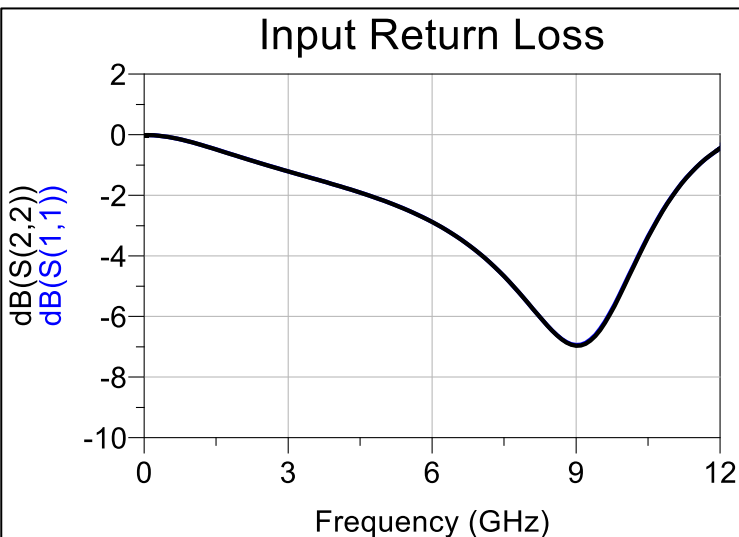
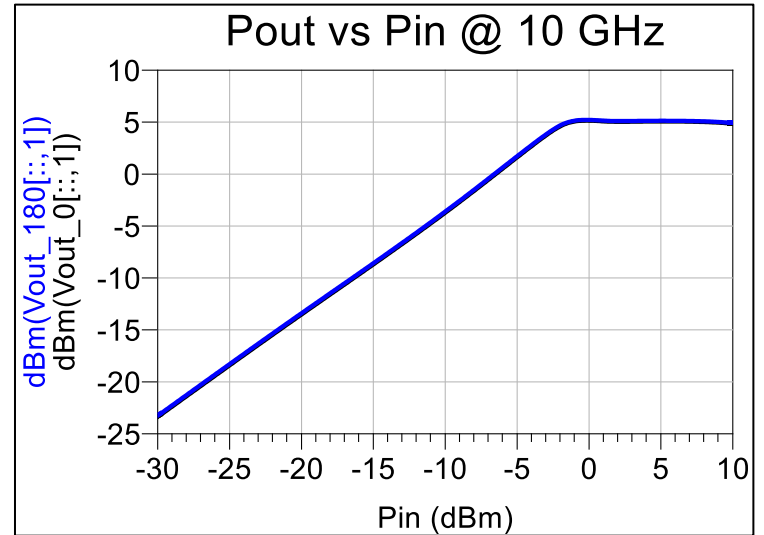
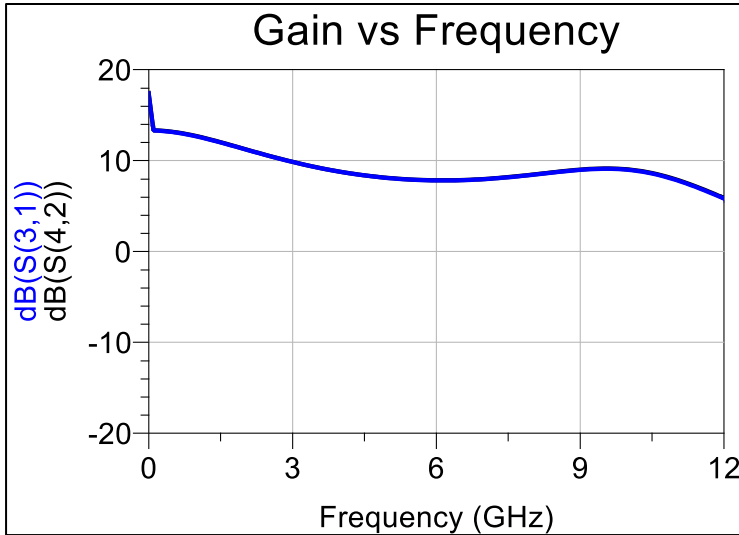
- Sample Ready Die
- Product Datasheet

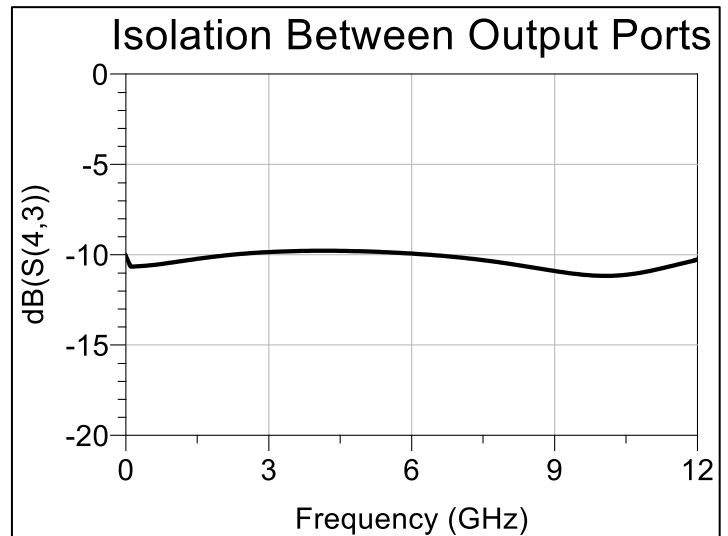
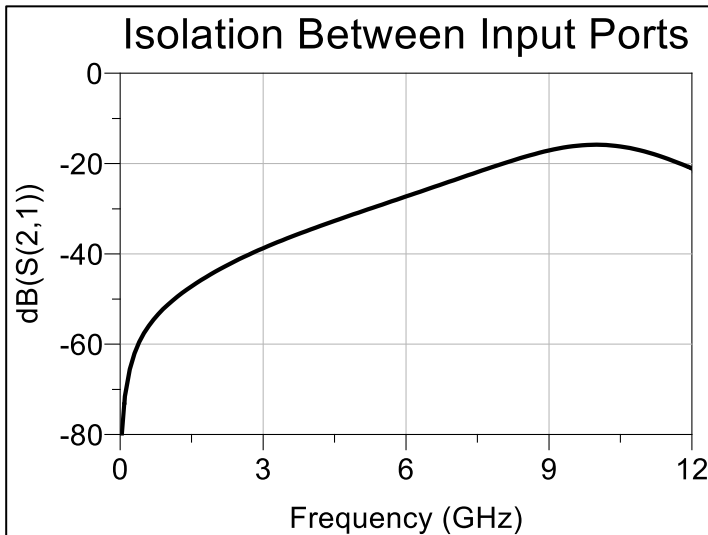
### Electrical Specification:

Freq= DC-12 GHz, VDD = 5V, ID= 135 mA, Zo=50  $\Omega$

Parameters	Test Condition	Units	Typ
Gain	100 MHz	dB	13.2
	6 GHz		7.8
	12 GHz		6
Output P1 dB	DC	dBm	
	6 GHz		5.13
	12 GHz		
Input Return Loss	DC	dB	0.018
	6 GHz		2.8
	12 GHz		0.4
Output Return Loss	DC	dB	11.9
	6GHz		13
	12 GHz		13.8
<b>Operating Bias Conditions</b>			
Drain Current (Id)	-	mA	135
Drain Voltage (VDD)	-	V	5

## Typical Performance Curves:





## Disclaimer:

Information in this document is provided in connection with RFIC Solutions Inc. products. These materials are provided by RFIC Solutions Inc. as a service to its customers and may be used for informational purposes only. Except as provided in RFIC Solutions Inc. Terms and Conditions of Sale for such products or in any separate agreement related to this document, RFIC Solutions Inc. assumes no liability whatsoever. RFIC Solutions Inc. assumes no responsibility for errors or omissions in these materials. RFIC Solutions Inc. may make changes to specifications and product descriptions at any time, without notice. RFIC Solutions Inc. makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

## Contact information

For the latest specifications, additional product information:

Web: [www.rficsolutions.com](http://www.rficsolutions.com)

Email: [smoghe@rficsolutions.com](mailto:smoghe@rficsolutions.com)

Tel: (+91) 840 356 8957, (+91)9022078131, (+91)8485841789

RFIC confidential property not to be copied or disclosed without prior authorization.

[www.rficsolutions.com](http://www.rficsolutions.com)

FEB 2025