

# Power Amplifier

## PRODUCT DATASHEET

## RFPA5.8S

### Features:

- RF Frequency: 5.5 - 6 GHz
- Small signal gain: 23.7 dB
- Output P1dB: 30.9 dBm
- Saturated Output Power: 31.8 dBm
- DC drain bias voltage: 5 V
- DC Gate bias voltage: -0.5/-0.6 V
- DC supply current: 474 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 1.2 mm \* 1.02 mm

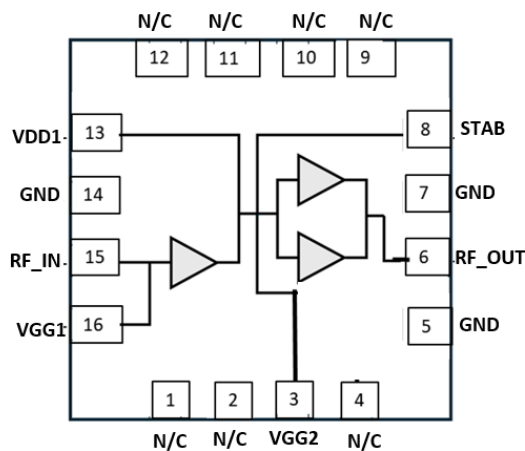
### Applications:

- Bluetooth
- Radar Systems
- SATCOM
- IoT
- Wi-Fi

### Deliverables:

- Sample Ready Die
- Product Datasheet

### Functional Block Diagram:



### Pin Configuration:

Pin No.	Pin Name	Description
5,7,14	GND	Ground
13	VDD-1	Drain Bias Voltage -1
16	VGG-1	Gate Bias Voltage -1
3	VGG-2	Gate Bias Voltage -2
15	RF-IN	RF Input
6	RF-OUT	RF Output
1,2,4,9,10,11,12	N/C	Not Connected
8	STAB	For Stability Connection

### Description:

RFPA5.8S is Power Amplifier operate 5.5-6 GHz. The amplifier provides 23.7 dB of small signal gain, the input and output are matched to 50 ohms with off-chip matching network.

The device is specifically designed for use in 5.8 GHz frequency in Bluetooth, Radar Systems, WiFi, IoT and SATCOM Application.

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

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### Electrical Specification:

Freq= 5.5-6 GHz, VDD1 = 4V, VGG1=-0.5 V, VGG2 = -0.6 V, ID= 474 mA, Zo=50 Ω

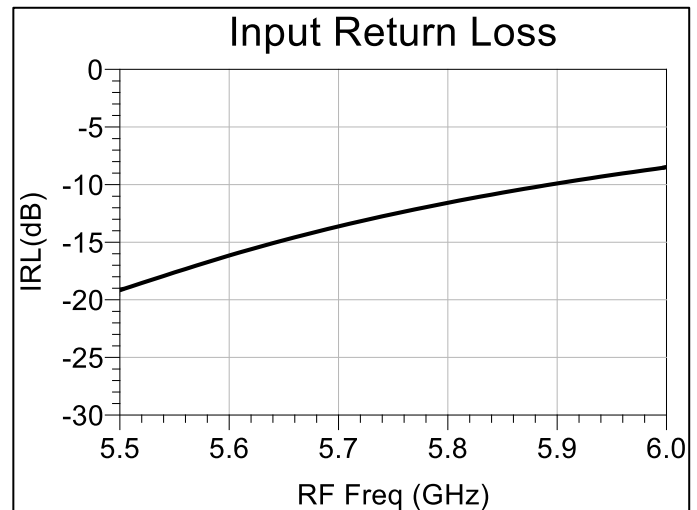
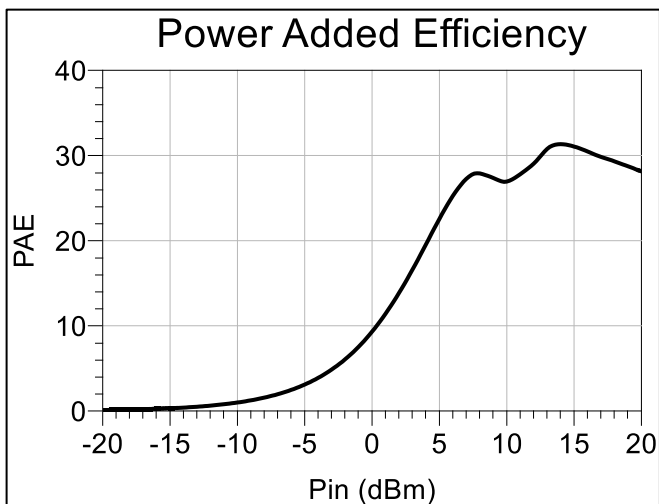
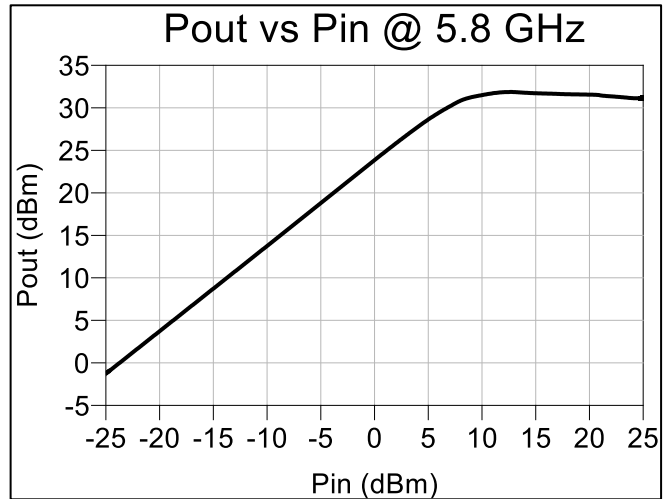
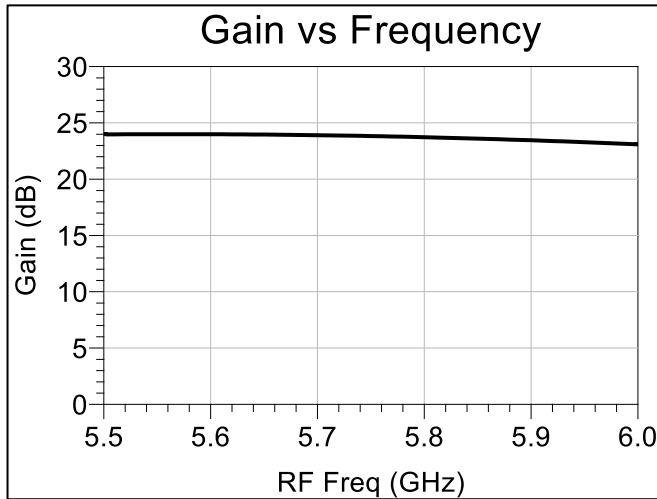
Parameters	Test Condition	Units	Typ
Gain	5.5 GHz	dB	23.9
	5.8GHz		23.7
	6 GHz		23
Output P1 dB	5.5 GHz	dBm	-
	5.8GHz		30.9
	6 GHz		-
OIP3 Pin= 1 dBm Δf = 50MHz	5.5 GHz	dBm	-
	5.8GHz		41.8
	6 GHz		-
Input Return Loss	5.5 GHz	dB	19
	5.8GHz		11.5
	6 GHz		8.5
Output Return Loss	5.5 GHz	dB	9.6
	5.8GHz		15.6
	6 GHz		15.2
<b>Operating Bias Conditions</b>			
Drain Current (Id)	-	mA	474
Drain Voltage (VDD)	-	V	5
Gate Voltage (VGG)	-	V	-0.5/-0.6

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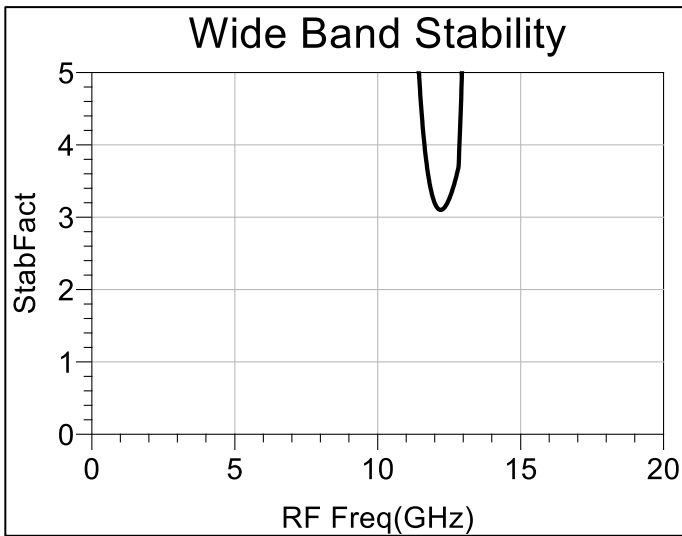
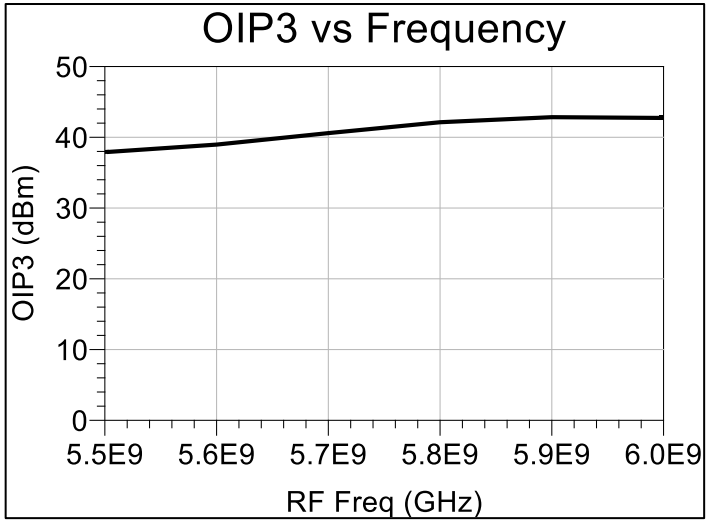
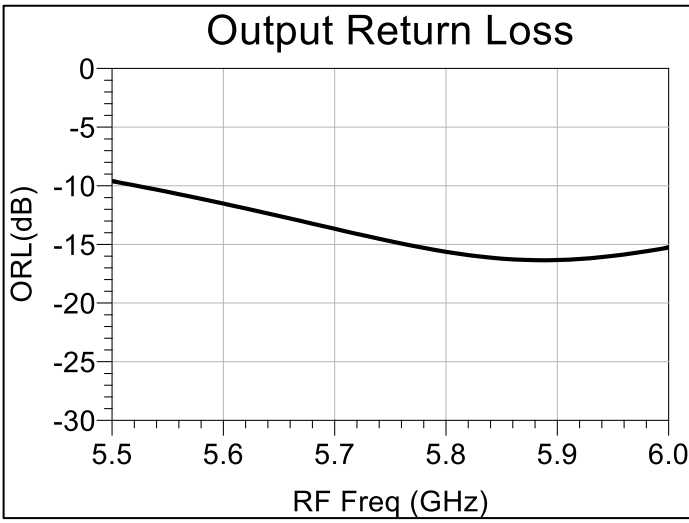
### Typical Performance Curves:



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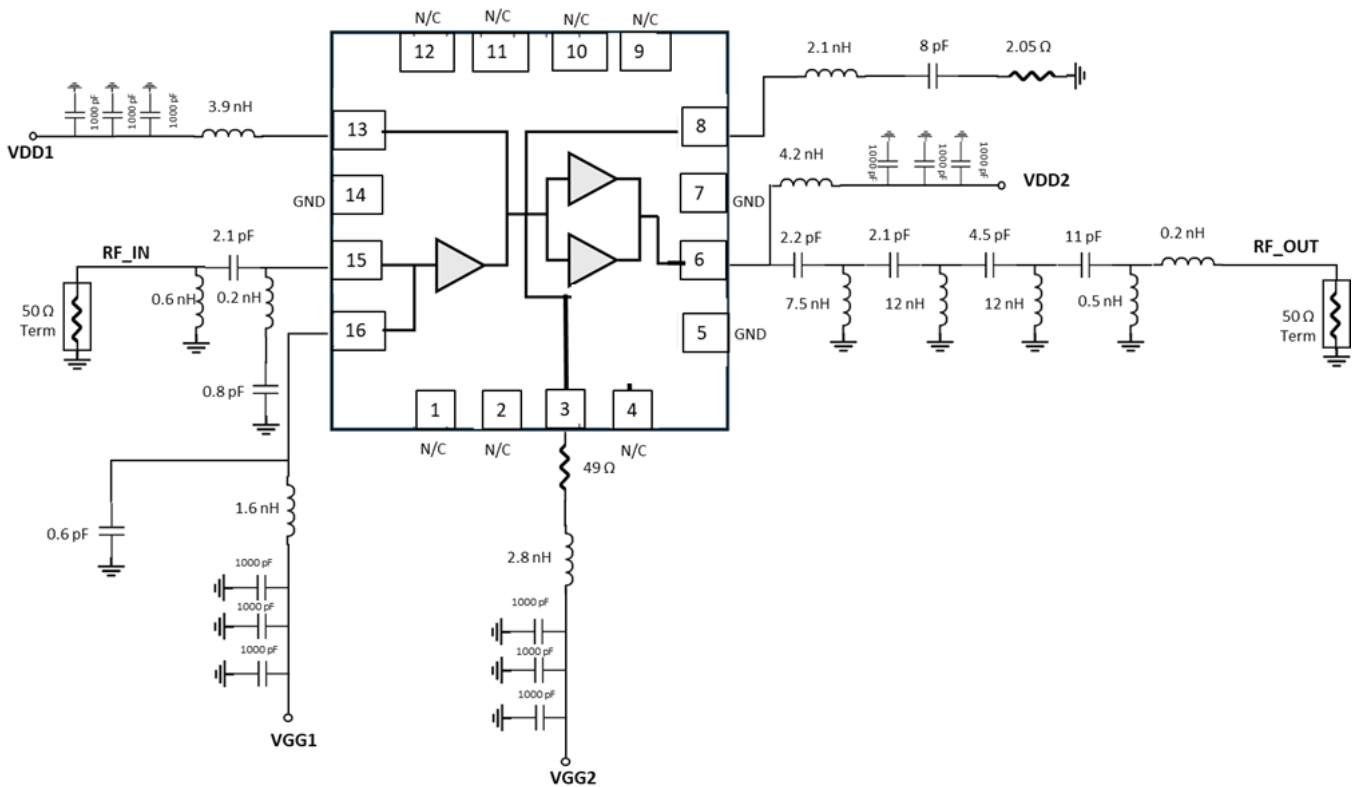
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### Application Diagram:



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