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Power amplifier, GPA-4.5-7.5-41-QFN

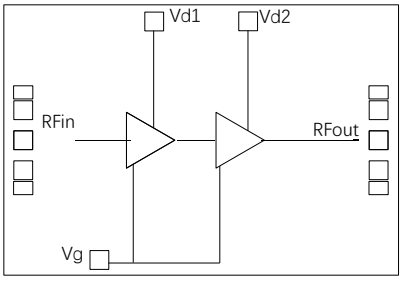
• Parameters

- Operating frequency:4.5~7.5GHz
- Psat：41.0dBm
- Power gain: 20dB@Pin=22dBmPower
- supply: 28V/-2.7V
- 50ohm input/output
- Chip size: 5.0mm×5.0mm×1.6mm

• Product introduction

GPA-4.5-7.5-41 is a power amplifier chip manufactured using GaN HEMT technology. The workingfrequency band covers 4.5~7.5 GHz, and under a supply voltage of 28V, it can provide a powergain of 20dB, with a saturated output power greater than 41dBm. The chip is grounded through theback through-hole, mainly used in communication systems, high-power transceiver components,and other fields.

• Internal block diagram



Max. operating conditions[1]

Parameter	Ratings
Drain voltage	+30V
Input power	30dBm
Operating temperature	-55℃~+85℃
Storage temperature	-65℃~+120℃

[1] Exceeding any of these limits may cause permanent damage.

DC electrical specifications (TA=+25 °C)

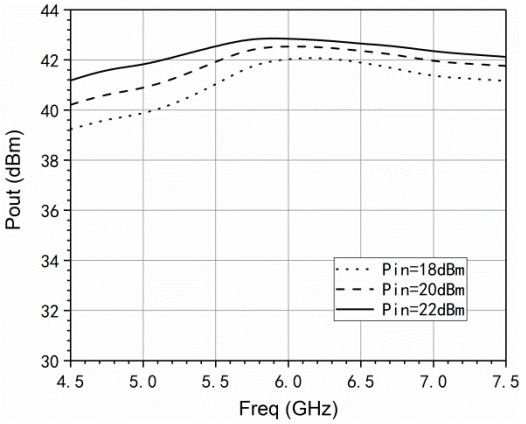
Parameter	Min	Typ	Max	Unit
Gate bias voltage		-2.7		V
Drain working voltage		28		V
Quiescent drain current		0.55		A
Dynamic drain current		1.2		A

Microwave electrical specifications (TA=+25 ℃, Vd=+28V，Vg=-2.7V，CW)

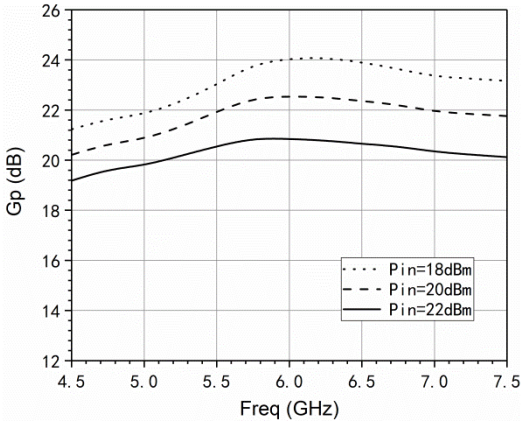
Parameter	Min	Typ	Max	Unit
Frequency range		4.5~7.5		GHz
Psat		41.0		dBm
PAE		47@5GHz 60@6GHz 54@7GHz		%
Power gain （@Pin=20dBm）		20		dB
Power gain flatness		±0.4		dB
Input/output return loss		-11/-16		dB

Typical test results （TA=+25℃，Vd=+28V，Vg=-2.7V，CW）

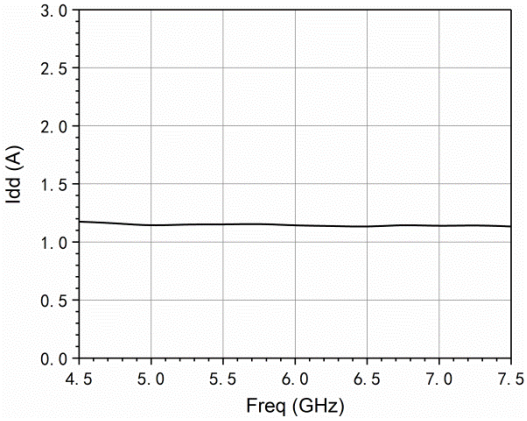
Output power VS. Frequency



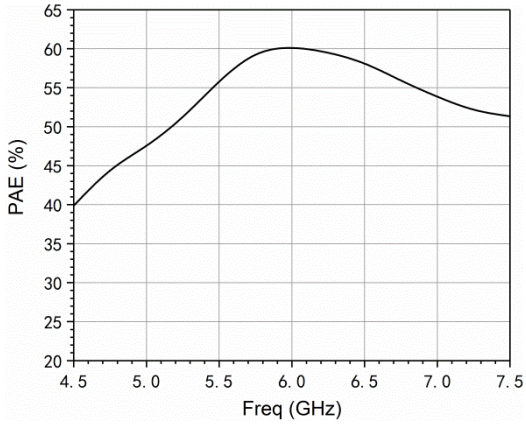
Power gain VS. Frequency



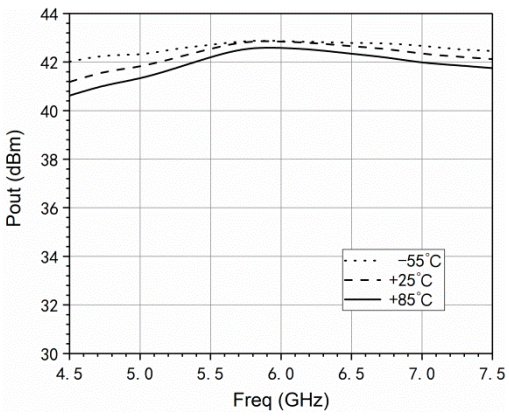
Dynamic current VS. Frequency (@Pin=22dBm)



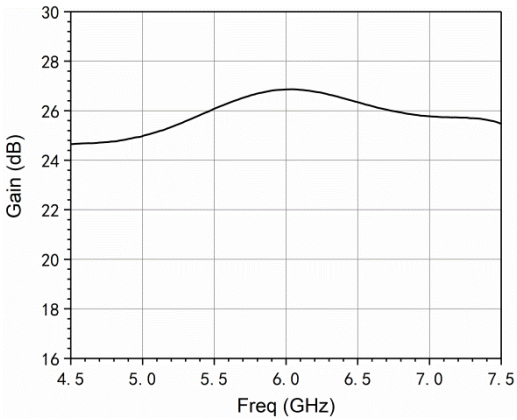
PAE VS. Frequency (@Pin=22dBm)



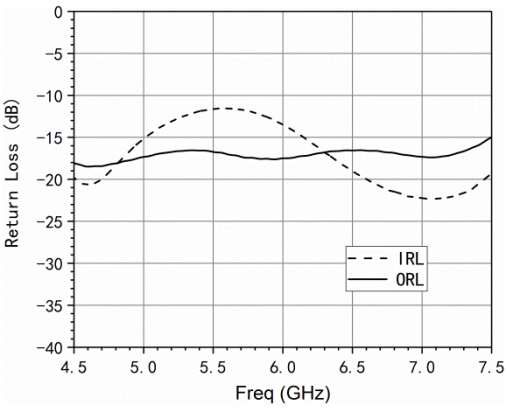
Output power VS. Frequency（@Pin=22dBm）



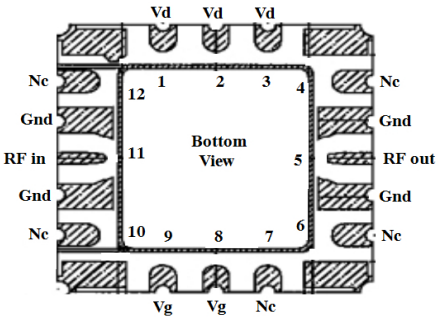
Small signal gain VS. Frequency（@Pin=-25dBm）



Input/output return loss VS. Frequency



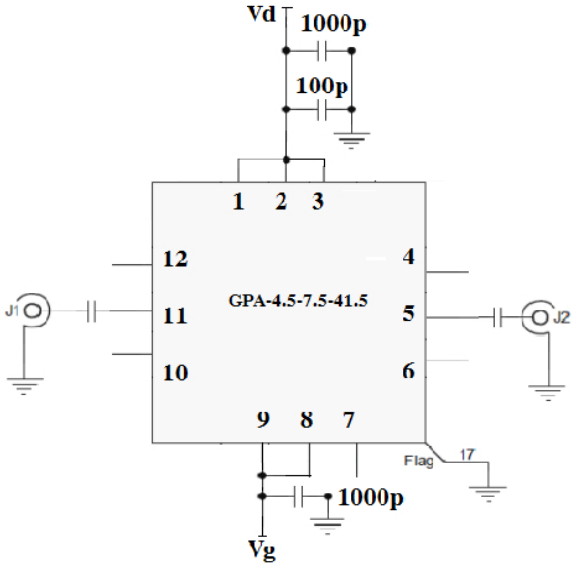
QFN Bottom view diagram



Pad Definition

Pad Number	Function	Description	Remark
1、2、3	Vd	Drain power supply	28VDC
5	OUT	RF output, external 50 ohm system, no need for external blocking capacitor	
11	IN	RF input, external 50 ohm system, no need for external blocking capacitor	
8、9	Vg	Gate power supply	-2.7VDC

Application schematic diagram



Note: To ensure more stable performance of the amplifier, it is recommended to weld ceramic capacitors with the recommended capacitance values in the above assembly diagram at the feeding end for filtering. The number of filtering capacitors can also be increased or different capacitance values can be combined according to actual needs.

Note:

1.Please assemble and use in a purified environment, store in anti-static containers, and keep dry
2.This product is an electrostatic sensitive device. Please pay attention to anti-static measures during storage and use
3.Do not attempt to clean the surface of the chip using dry or wet chemical methods
4.If you have any questions, please contact the supplier

This product is sensitive to static electricity. Please pay attention to anti-static measures during use