Standard Circuit

GPA-0812D

GaAs MMIC Power Amplifier Chip, 8-12GHz

Performance characteristics

Frequency range: 8-12GHz
Small Signal Gain: 24.5 dB
Gain flatness: ± 0.4 dB
Psat: 22 dBm
Power supply: +5 V/ 105 A
50Ohm input/output
100% on-chip testing
Chip size : 1.7 x 0.85 x 0.1mm

Product Introduction

GPA-0812D is a broadband power driver amplifier chip based on GaAs technology , covering a frequency range of 8~12GHz, a small signal gain of 24.5dB , and a Psat output power of 22dBm. The chip is powered by a single +5V power supply. The chip's through-hole metallization process ensures good grounding, and the back side is metallized, which is suitable for eutectic sintering or conductive adhesive bonding.

Use restriction parameter [1]	
Maximum drain voltage	+7 V
Maximum input power	+20dBm
Operating temperature	-55 ~ + 85 °C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical parameters (TA = +25°C , Vd = +5V, I_{ds} = 105 mA)				
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range		8-12		GHz
Small Signal Gain	-	24.5	-	dB
Gain Flatness		± 0.4		dB
P -1 dB	-	21	-	dBm
Psat	-	22	-	dBm
Input return loss	-	15		dB
Output return loss	-	14		dB
Quiescent Current		105		mA

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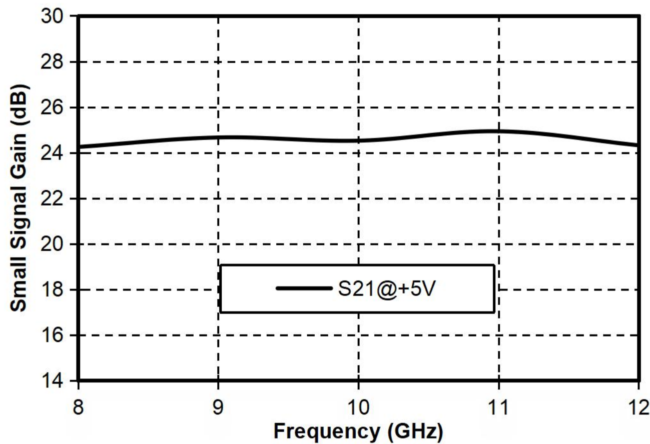
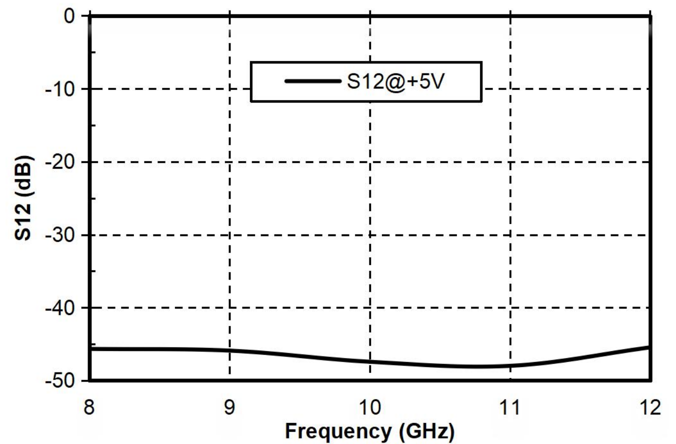
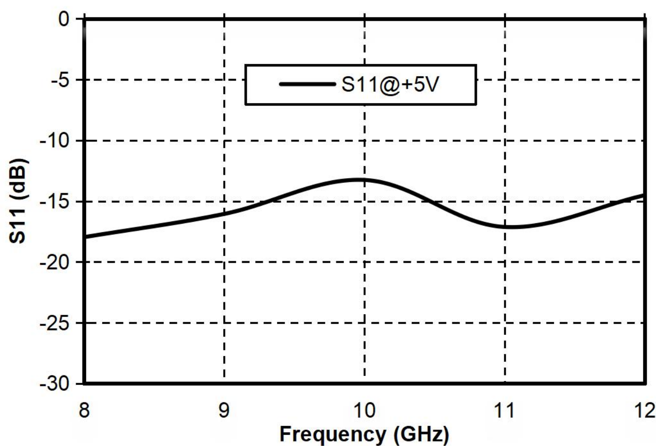
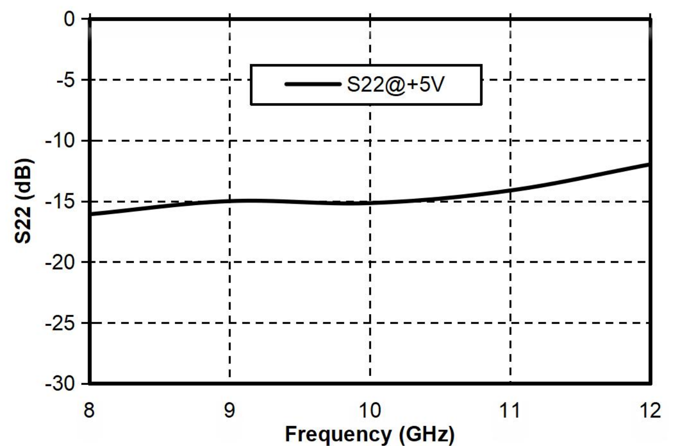
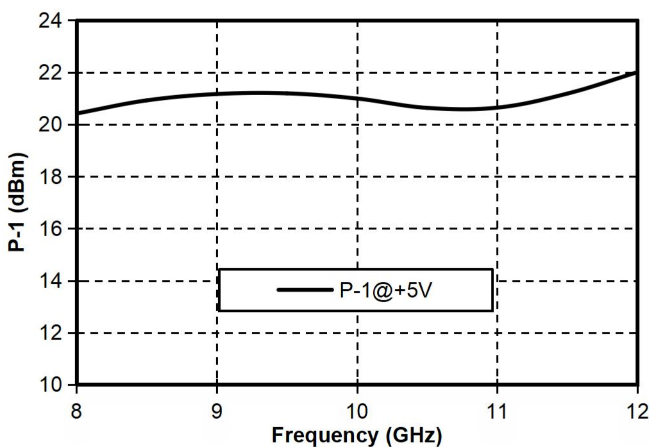
Main index test curve

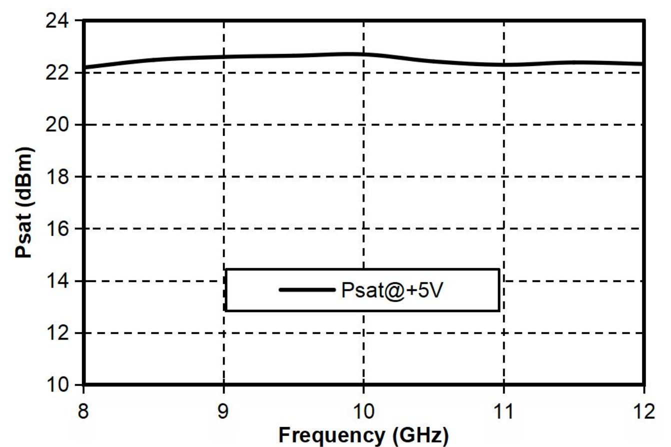












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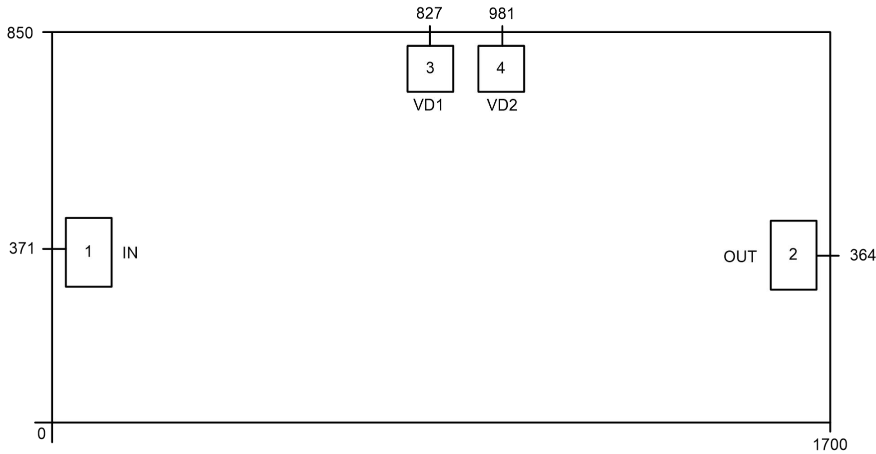
Appearance structure [2]



【 2 】The units in the figure are all micrometers (dimensional tolerance: ±100um.)

Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RF IN	RF signal input terminal, no DC blocking capacitor required
2	RF OUT	RF signal output terminal, no DC blocking capacitor required
3.4	Vd 1~Vd2	Amplifier drain bias, external 100pF, 1000pF bypass capacitor required
Chip bottom	GND	The bottom of the chip needs to be in good contact with the RF and DC grounds

Recommended assembly diagram