

## GaAs MMIC Power Amplifier Chip, 2-6 GHz

### Performance characteristics

- Frequency Range: 2 - 6 GHz
- Small signal gain: 19dB
- Gain flatness :  $\pm 1.0$ dB
- P -1 dB : 31dBm
- Psat : 31.5dBm
- Power supply: +8 V /365mA
- 50Ohm input / output
- Chip size: QFN 5X5

### Product Introduction

GPA-0206B-PQ5 is a broadband high-gain, high-efficiency, high-power amplifier with a frequency range of 2GHz~6GHz, a small signal gain of 19dB , and a P-1 output of 31dBm. GPA-0206B-PQ5 is powered by a +8V power supply. This chip is packaged in a 5 x 5 mm plastic surface mount package , and the surface of the pin pad is tinned, which is suitable for reflow soldering installation.

### Using the Limit Parameter

Maximum drain voltage	+10V
Maximum gate bias	-3V
Maximum input power	+25dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

Exceeding any of these maximum limits may cause permanent damage.

### Electrical performance parameters ( TA = +25°C, Vd =+8V )

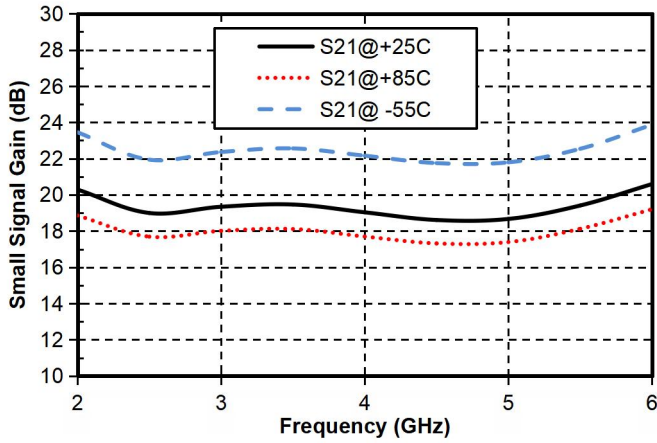
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	2-6			GHz
Small Signal Gain	-	19	-	dB
Gain Flatness		$\pm 1.0$		dB
P -1dB	-	31	-	dBm
Psat	-	31.5	-	dBm
Input return loss	-	19	-	dB
Output return loss	-	9	-	dB
Quiescent Current		365		mA

\* By tuning the Vg terminal voltage from -2V to 0V , the recommended gate voltage is -0.6V .

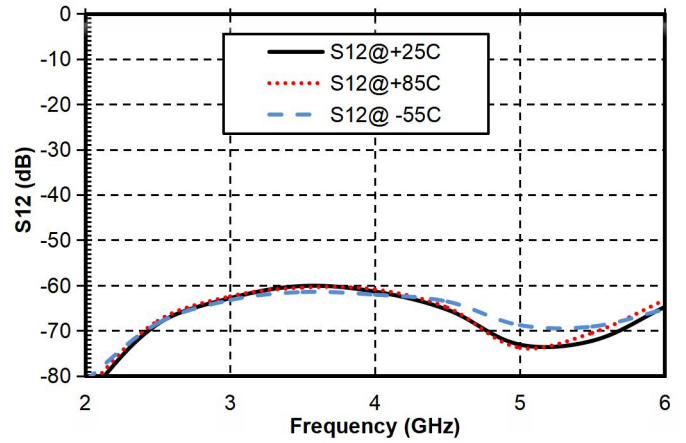
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Main index test curve

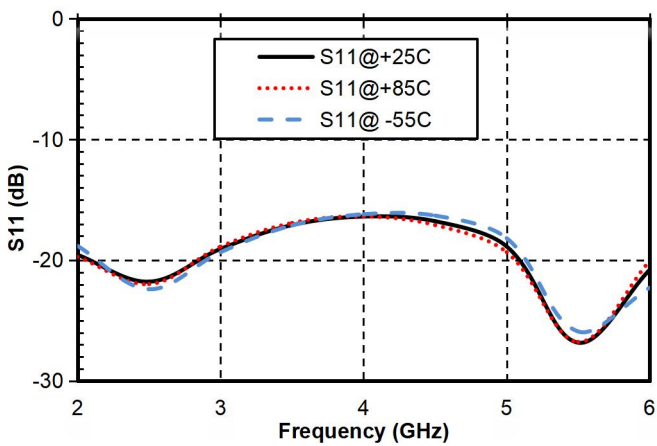
Gain vs. Frequency



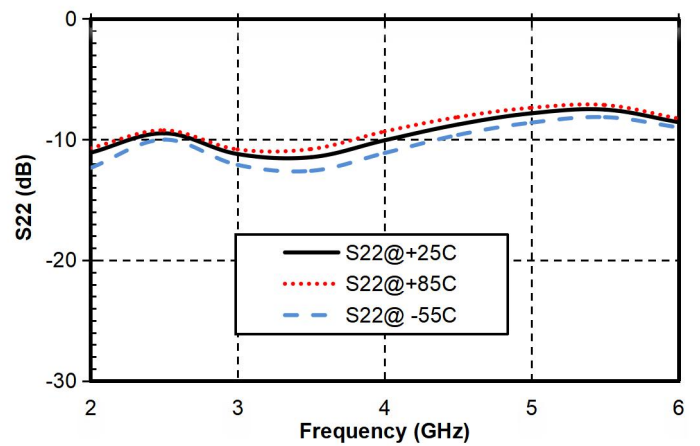
Reverse Isolation vs. Frequency



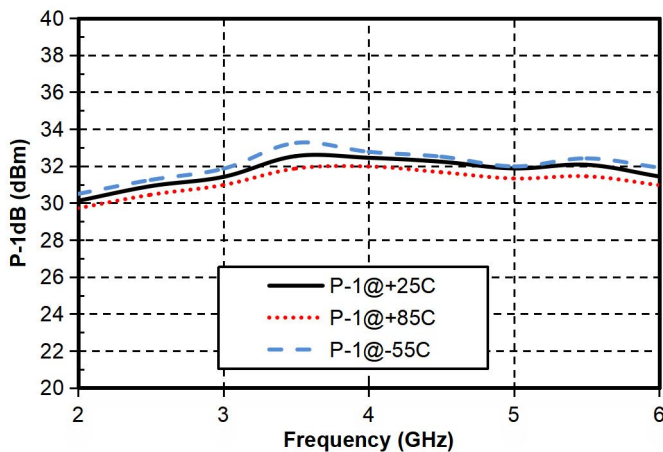
Input Return Loss vs. Frequency



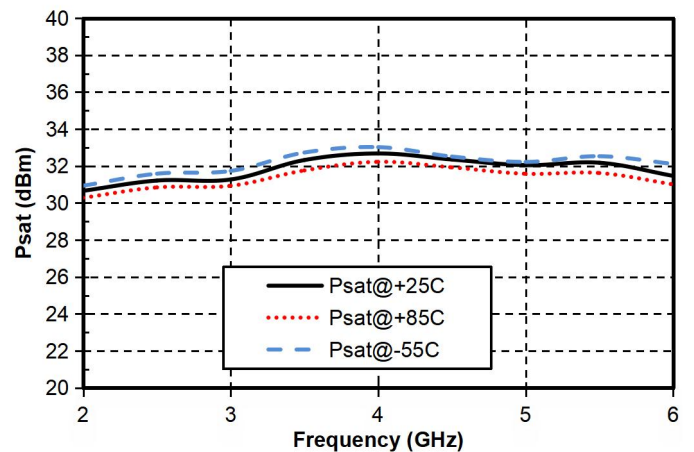
Output Return Loss vs. Frequency



P-1dB vs. Frequency

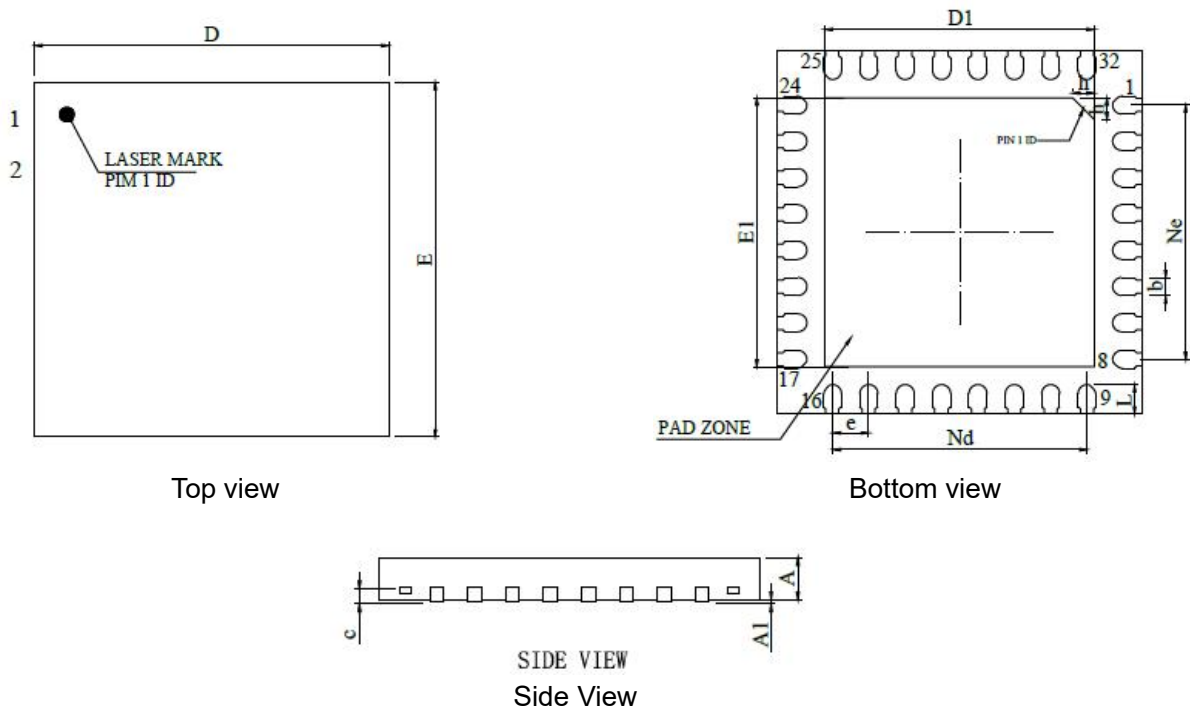


P sat vs. frequency



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### Appearance structure



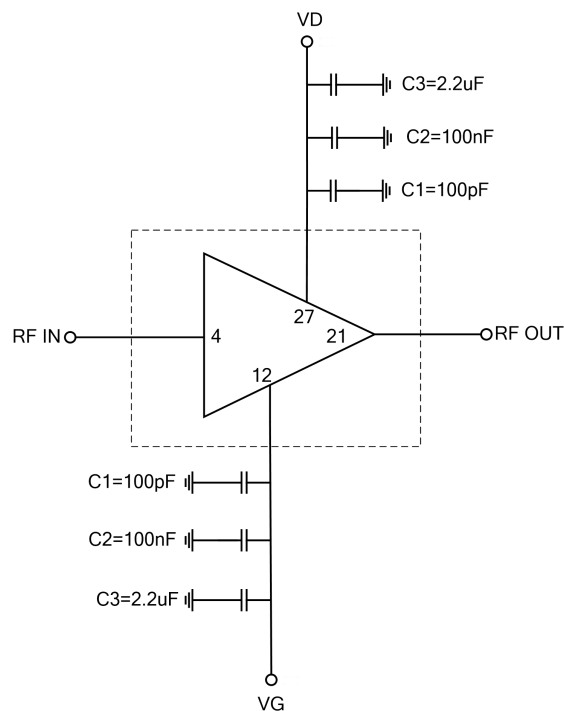
The units in the figures are all in millimeters , and the tolerance is  $\pm 0.15$  mm.

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	—	0.02	0.05
b	0.20	0.25	0.30
c	0.203REF		
D	4.90	5.00	5.10
D1	3.60	3.70	3.80
e	0.50BSC		
$Nc$	3.50BSC		
$Nd$	3.50BSC		
E	4.90	5.00	5.10
E1	3.60	3.70	3.80
L	0.35	0.40	0.45
h	0.25	0.30	0.35

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Pin Definition		
Pin number	Function Symbol	Functional Description
4	RFIN	The signal input terminal is connected to a 50 ohm circuit, and no DC blocking capacitor is required
21	RFOUT	The signal output terminal is connected to a 50 ohm circuit, and no DC blocking capacitor is required
12	VG	Amplifier Gate Bias
27	VD	Amplifier Drain Bias
3 , 5 , 20 , 22	GND	The pins need to be well grounded to the RF and DC grounds
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC
other	NC	No welding required, can be grounded

### Recommended Circuit



### Precautions for use

- Sealing material : Low-pressure injection molding plastic that meets ROHS specifications
- Lead frame material: copper alloy
- Lead surface plating: 100% matte tin
- Maximum reflow peak temperature: 260 °C