

## GaAs MMIC Wide Voltage Amplifier, 13.5-14.5GHz

### Features:

Freq. Range: 13.5-14.5GHz

Wide Voltage: +5V~+6V

Gain: 30dB@+5V, 29dB@+6V

Gain Flatness:  $\leq \pm 1.5$ dB (Positive slope)

P-1dB: 21dBm@+5V, 21.5dBm@+6V

Psat: 22dBm@+5V, 23dBm@+6V

Supply: +5V/47mA, +6V/49mA

50Ohm Input/Output

100% On Wafer Test

Size: 1.85 x 1.0 x 0.1mm

### Product Introduction:

IPA-1314A is a Wide Voltage Amplifier based on GaAs technology. The frequency range covers 13.5~14.5GHz, the gain is 29~30dB, and the P-1 output power is 21~21.5Bm. The chip uses +5V~+6V power supply. The chip via metallization process ensures good grounding, and the back side is metallized, which is suitable for eutectic sintering or conductive adhesive bonding process.

### Absolute Maximum Ratings<sup>1</sup>

Maximum Vdd	+8V
Maximum Input Power	+20dBm
Working Temperature	-55 ~ +85°C
Storage Temperature	-65 ~ +150°C
【1】 Exceeding any of the above maximum limits may cause permanent damage.	

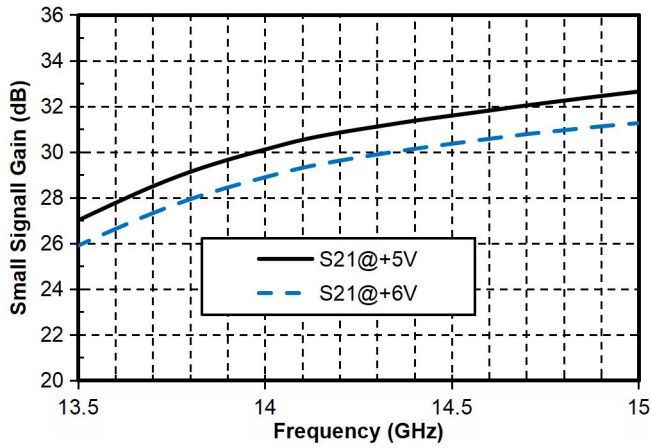
### Electrical Specifications(T<sub>A</sub>= +25°C, V<sub>d</sub>=+5V, +6V)

Parameter	Min.	Typ.	Max.	Units
Freq. Range	13.5~14.5			GHz
Gain	29~30@+5V~+6V			dB
Gain Flatness	±1.5			dB
P-1dB	21~21.5@+5V~+6V			dBm
Psat	22~23@+5V~+6V			dBm
Input Return Loss	14	15		dB
Output Return Loss	9	16		dB
Current	47~49@+5V~+6V			mA

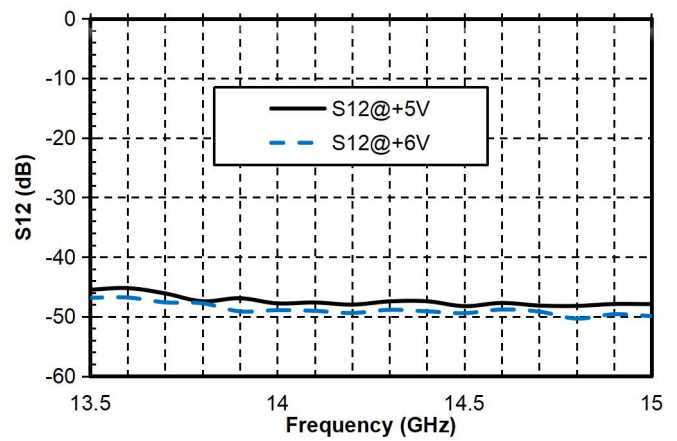
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### Test Curve

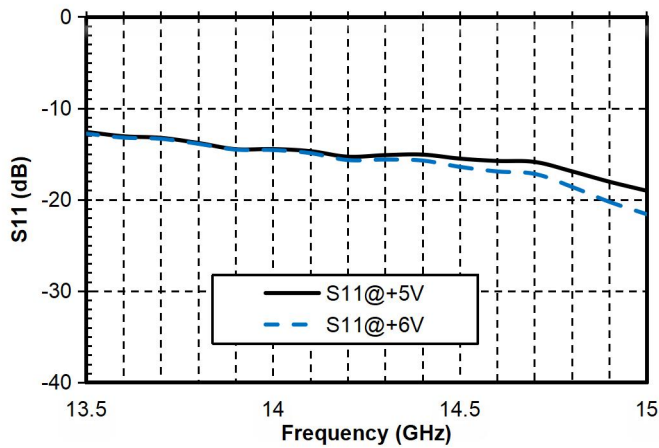
Gain vs. Freq.



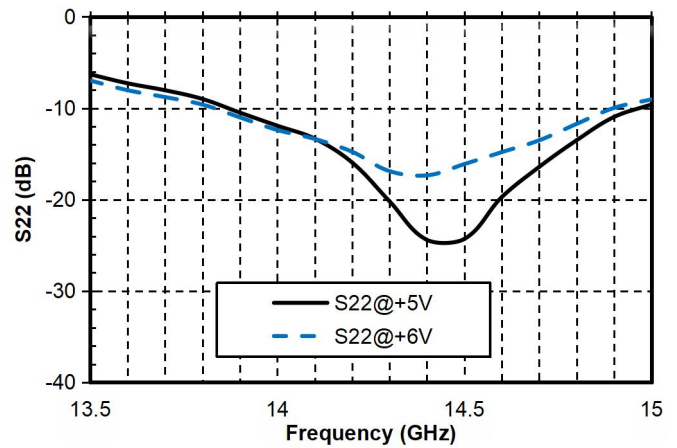
Reverse Isolation vs. Freq.



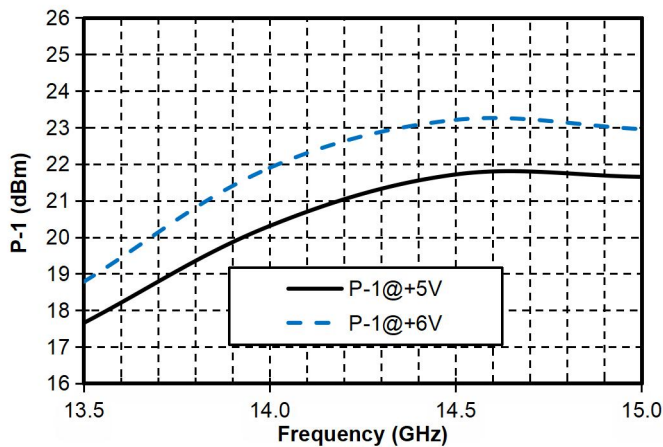
Input Return Loss vs. Freq.



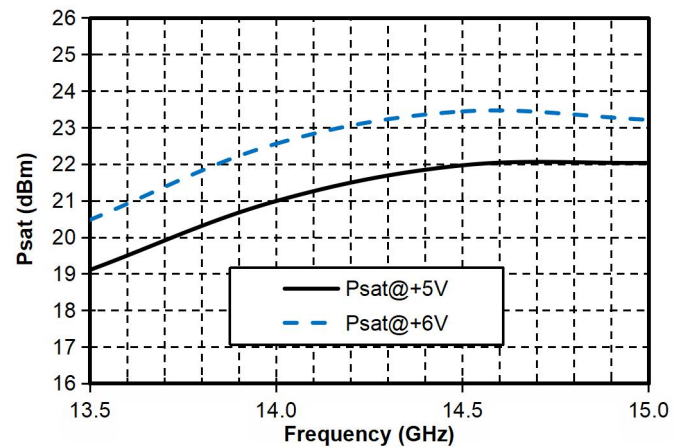
Output Return Loss vs. Freq.



P-1dB vs. Freq.

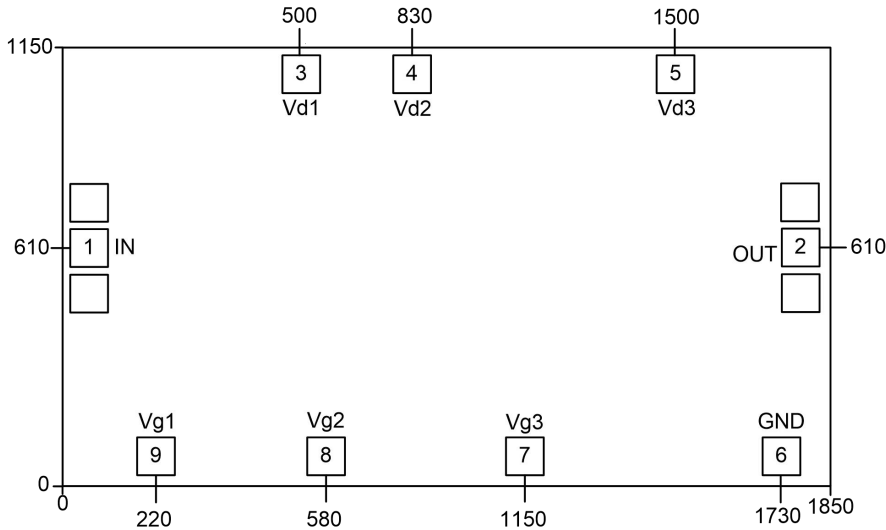


Psat vs. Freq.



## GaAs MMIC Power Amplifier, 13.5-14.5GHz

### Outline Drawing<sup>2</sup>



【2】 The units in the figure are all microns.

Pad Descriptions		
Pad Number	Function Symbol	Description
1	RF IN	RF signal input terminal, no DC blocking capacitor is required
2	RF OUT	RF signal output terminal, no DC blocking capacitor is required
3、4、5	Vd1、Vd2、Vd3	Amplifier drain bias voltage, an external bypass capacitor of 100pF, 1000pF, 100nF is required
6	GND	Dangling
7、8、9	Vg1、Vg2、Vg3	Amplifier gate bias voltage, an external bypass capacitor of 100pF, 1000pF, 100nF is required
Bottom of the chip	GND	Bottom of the chip needs to be well grounded with RF and DC

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### Recommended assembly drawing

