## AY1627

### GaAs monolithic integrated low noise amplifier

8~12GHz

### key indicator

- Frequency range:  $8{\sim}12GHz$
- Gain: 22dB
- Noise figure: 1.3dB
- Output P \_1 dB: 14dBm
- Power supply voltage: +5V@32mA
- Chip size: 1.52mmx1.22mmx0.1mm

### Product Introduction

### typical application

- Microwave radio frequency
- Satellite communications
- Test measurement
- Optical fiber communication

### Functional block diagram

The amplifier AY1627 works from 8 to 12 GHz and is made of GaAs technology. At a working current of 32 mA, it can provide 22dB gain, 14dBm output P\_1dB, and the noise in the normal temperature band is lower than 1.3dB.

The chip uses an on-chip metallization process to ensure good grounding, and the back of the chip is metallized, which is suitable for eutectic sintering or conductive adhesive bonding processes.



PMA

### Electrical performance (T<sub>A</sub>=25°C, V<sub>D</sub>=+5 V, I<sub>D</sub>=32mA, Z<sub>0</sub>=50Ω)

index	Minimum	Typical value	Max	unit
Frequency Range		$8\sim$ 12		GHz
Gain	-	22	-	dB
Input return loss	-	-20	-	dB
Output return loss	-	-22	-	dB
Noise Figure	-	1.3	-	dB
Output PdB	-	14	-	dBm
Working current	-	32	-	mA

### Absolute maximum rating

Maximum input power	+10dBm	Operating temperature	-55 ℃ ~ + 85 ℃
Channel temperature	150 ℃	Storage temperature	-65 ℃ ~ + 150 ℃

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Typical test curve





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### Shape and port size (mm)

Recommended assembly drawing

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#### Precautions

- 1. The chip is stored in a dry, nitrogen environment and used in an ultra-clean environment;
- GaAs material is relatively brittle and cannot touch the surface of the chip, so you must be careful when using it;
  Chips are sintered with conductive glue or alloy (the alloy temperature cannot exceed 300°C, and the time
- cannot exceed 30 seconds) to make it fully grounded; 4. The gap between the microwave port of the chip and the substrate should not exceed 0.05mm. Use Φ25μm
- 4. The gap between the microwave port of the chip and the substrate should not exceed 0.05mm. Use  $\psi_{25}\mu_{17}$  double gold wire for bonding. The recommended length of gold wire is  $250 \sim 400 \mu_{m}$ ;
- 5. The chip is sensitive to static electricity, so pay attention to anti-static during storage and use.