

GaAs monolithic integrated double balanced mixer

18~32GHz

**key indicator**

- RF/LO frequency band: 18~32GHz
- IF frequency band: DC~10GHz
- Conversion loss: 7.5dB
- Local oscillator power: 13dBm
- Chip size: 0.58mmX0.9mmX0.1mm

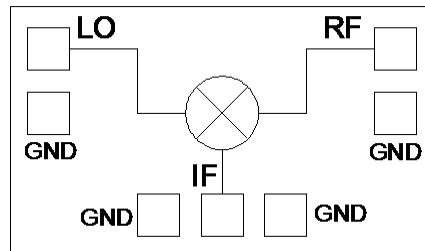
**typical application**

- Electronic Warfare
- radar
- Satellite communications
- Test measurement

**Functional block diagram** Product Introduction

AY1291 is a double balanced mixer. The chip uses GaAs process, no external components or matching circuits are required. The device can be used as both an up-converter and a down-converter.

The chip has full surface passivation protection to improve reliability.



**Electrical properties**  $T_A=25^{\circ}\text{C}$ , LO=13dBm,  $I_F=100\text{MHz}$

index	Minimum	Typical value	Max	unit
RF frequency/local oscillator frequency	18 ~ 32			GHz
IF frequency	DC~10			GHz
Conversion loss	—	-7.5	-10	dB
IF end return loss	—	-10	—	dB
RF end return loss	—	-10	—	dB
LO end return loss	—	-7.5	—	dB
Local Oscillator-RF Isolation	25	40	—	dB
Local Oscillator-Intermediate Frequency Isolation	25	30	—	dB
RF-IF isolation	18	35	—	dB
Enter P <sub>1</sub> dB	10	14	—	dBm

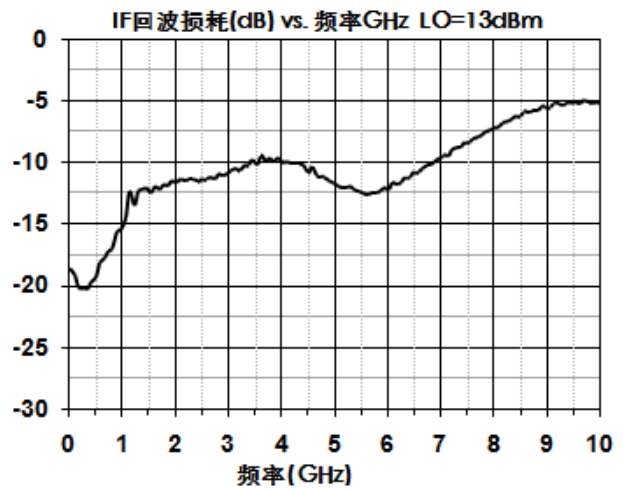
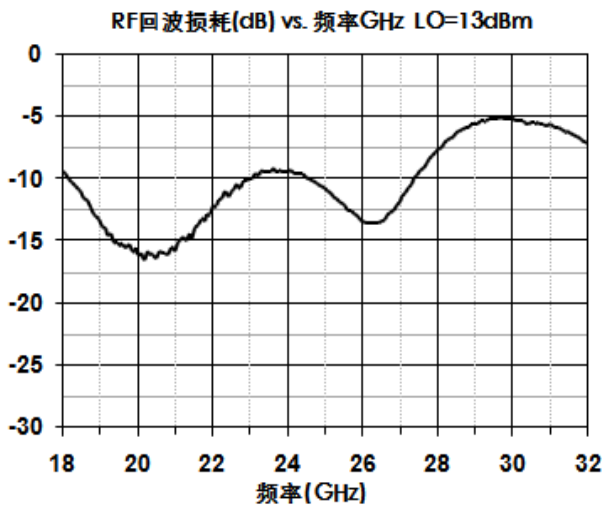
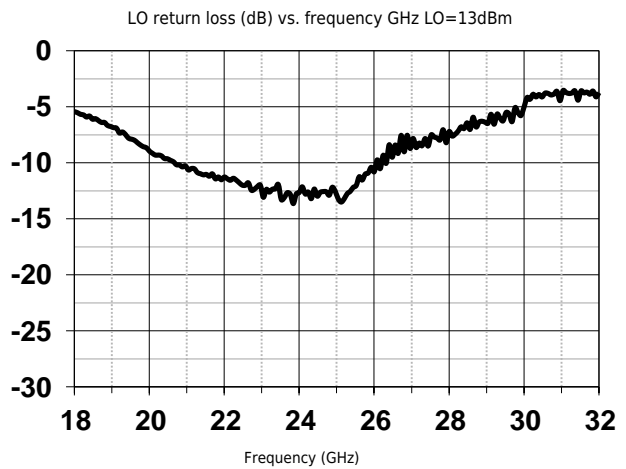
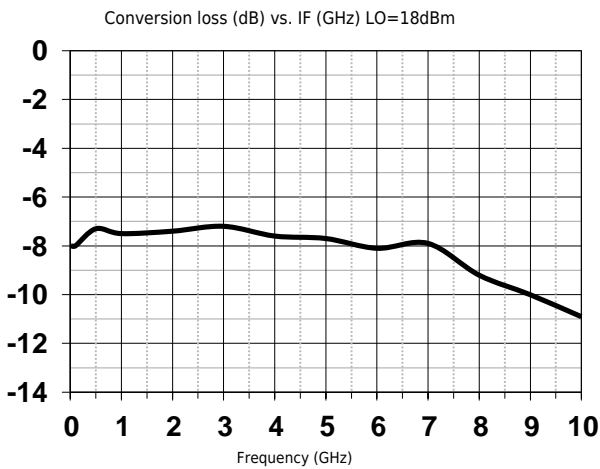
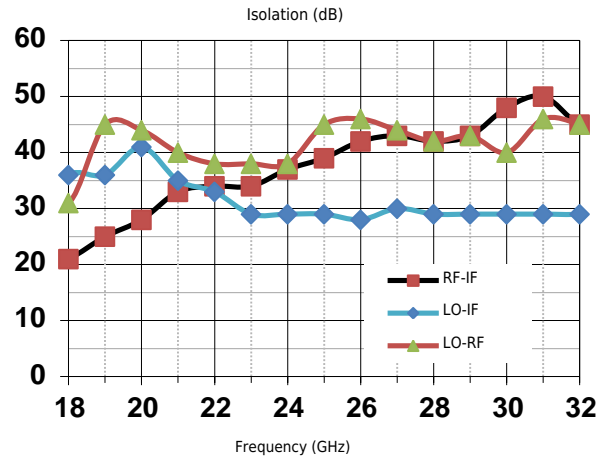
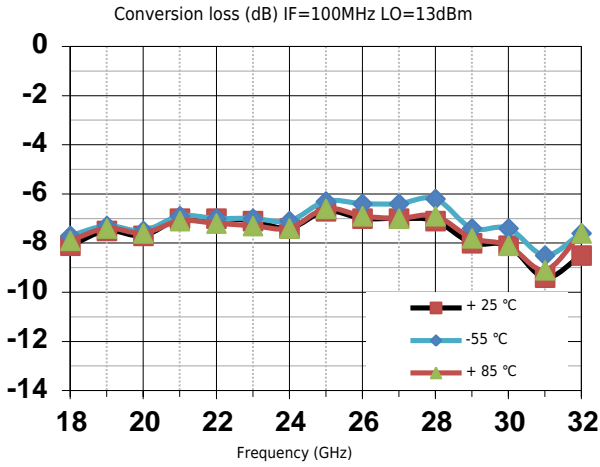
**Absolute maximum rating**

RF/IF maximum input power	20dBm	Operating temperature	-55°C~+85°C
Maximum input power of local oscillator	20dBm	storage temperature	-65 °C ~ + 150 °C

GaAs monolithic integrated double balanced mixer

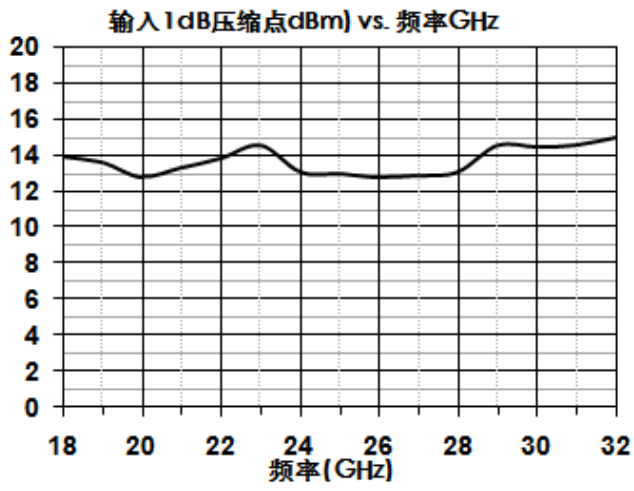
18~32GHz

Typical test curve

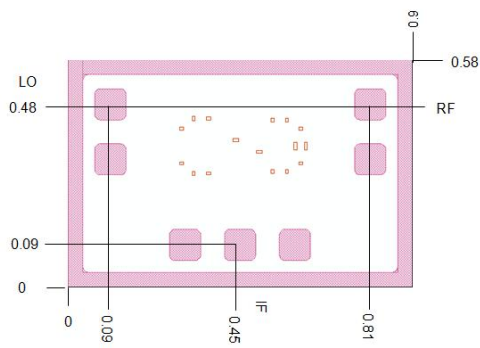


GaAs monolithic integrated double balanced mixer

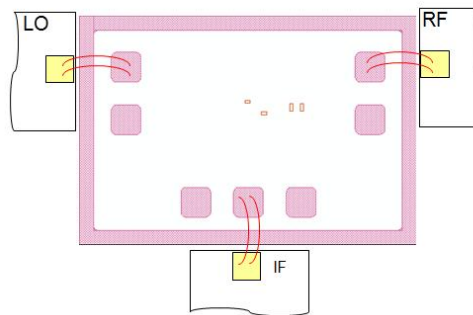
18~32GHz



Shape and port size  
(In mm)



Recommended assembly drawing



Precautions

Gallium arsenide MMIC devices are susceptible to damage from electrostatic discharge. Precautions should be taken during transportation, assembly and testing.