

GaAs monolithic integrated passive double balanced mixer
5.0~16.0GHz

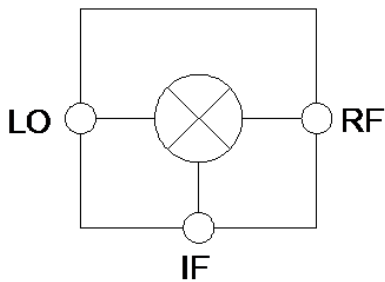
key indicator

- RF/LO frequency band: 5~16GHz
- IF frequency band: DC~6GHz
- Conversion loss: 8.5dB
- Local oscillator power: +13dBm
- Chip size: 0.88mm×0.85mm×0.1mm

typical application

- Radar and electronic countermeasures
- RF/Microwave Circuit
- Military and aerospace
- Test measurement

Functional block diagram



Product Introduction

AY1296 is a GaAs MMIC passive double balance Mixer frequency conversion chip, this MMIC mixer is based on GaAs Manufactured in the process, no external components or matching circuits are required. The device can be used as both an up-converter and a down-converter. The full passivation treatment on the front of the chip can improve the chip's Reliability and moisture resistance.

Electrical performance (T_A=25℃, LO=+13dBm)

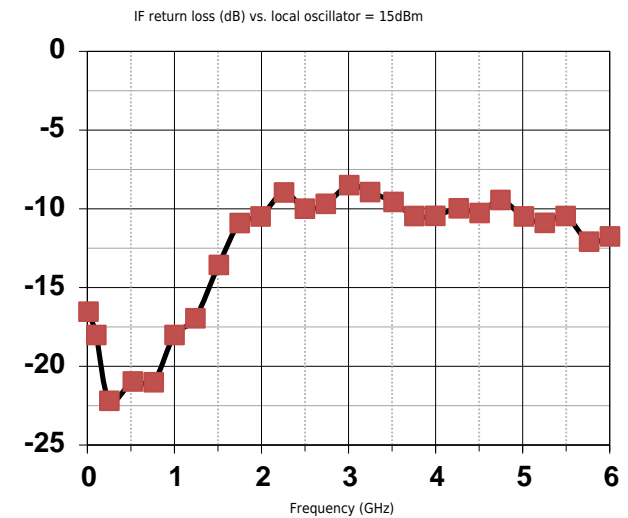
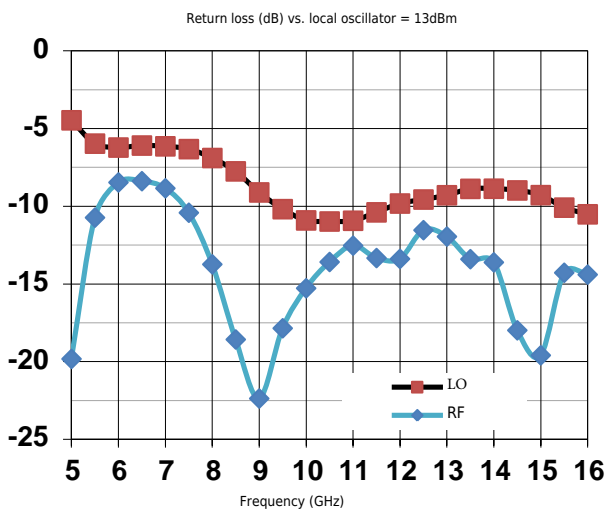
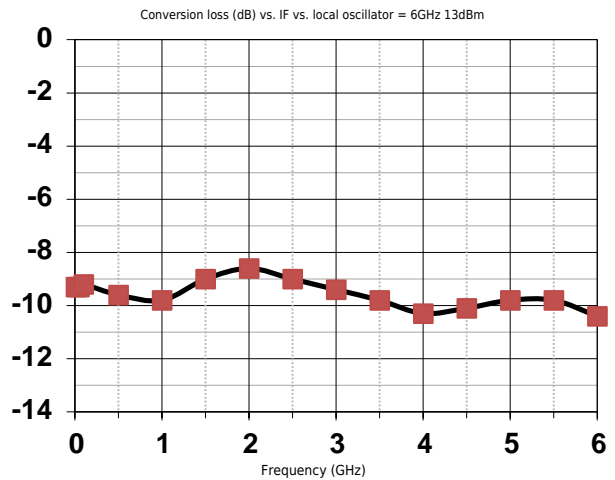
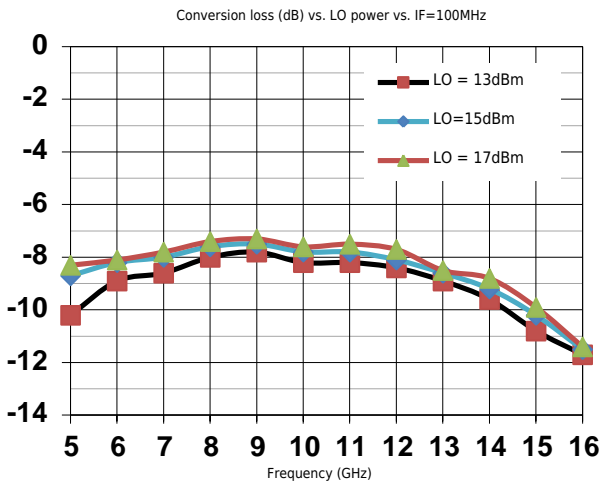
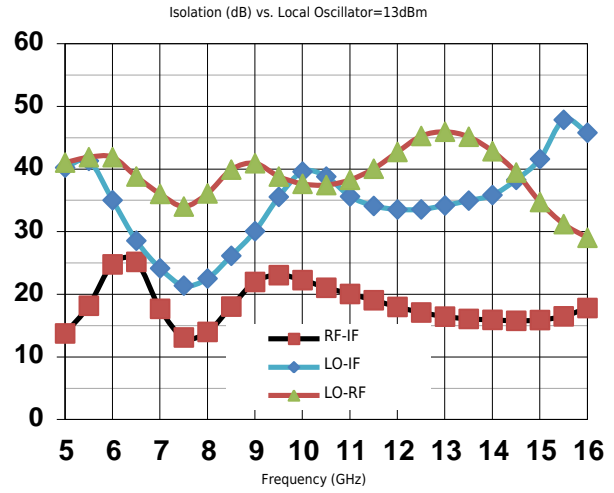
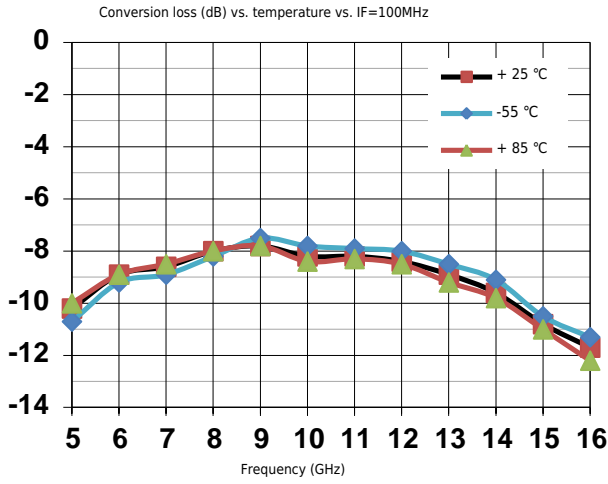
index	Minimum	Typical value	Max	unit
RF/Local Oscillator Frequency	5.0 ~ 16.0			GHz
IF frequency	DC~6			GHz
Conversion loss	—	-8.5	-13	dB
IF return loss	-8	-12	—	dB
RF return loss	-7	-13	—	dB
LO Return Loss	-4	-7.5	—	dB
Local Oscillator to RF isolation	-25	-38	—	dB
Local oscillation to intermediate frequency isolation	-17	-33	—	dB
RF to IF isolation	-10	-16	—	dB
Input 1dB gain compression	10	12	—	dBm

Absolute maximum ratings

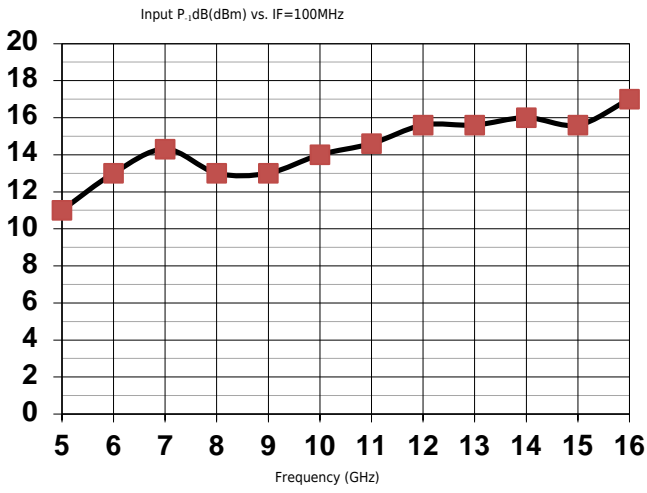
RF/IF maximum input power	+20dBm	Operating temperature	-55℃ ~ +85℃
Maximum input power of local oscillator	+20dBm	storage temperature	-65℃ ~ +150℃

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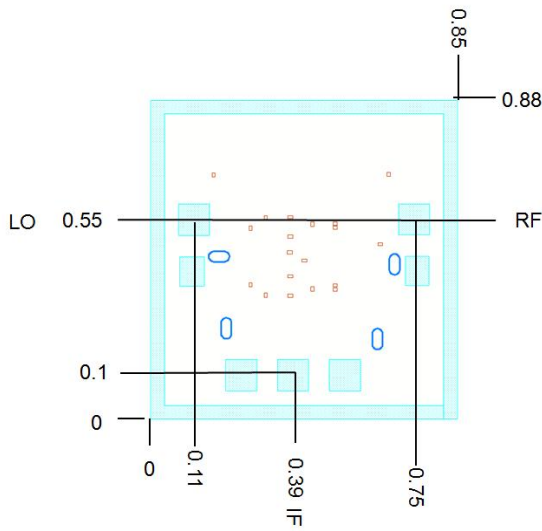
Typical test curve



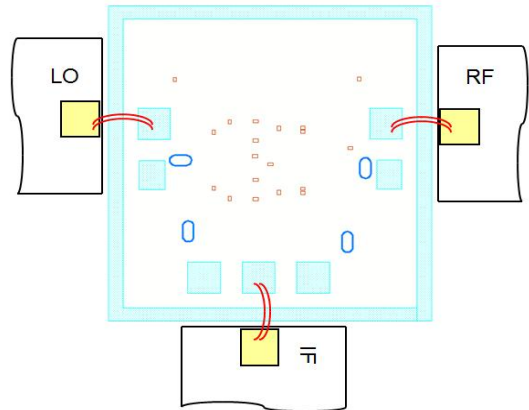
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Shape and port size (mm)



Recommended assembly drawing



Precautions

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