

Features

- RF&LO Frequency: 8~15GHz
- IF Frequency: DC~7GHz
- LO Input Power: 13 dBm
- Conversion Loss: 11dB
- LO/RF Isolation: 40 dB
- Chip Size: 1.83mm×1.22mm×0.1mm

General Description

The HG125HA is a GaAs pHEMT MMIC passive double-balanced mixer that can be used as an upconverter or downconverter between 8 and 15 GHz. This mixer requires no external components or matching circuitry and supports IF frequency between DC and 7 GHz. Conversion loss is 11 dB.

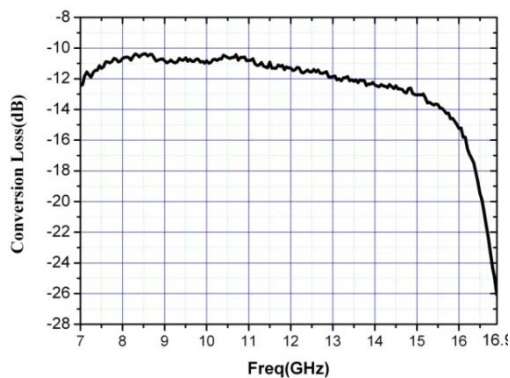
Electrical Specification($T_A=25^\circ\text{C}$)

Parameter	Min.	Typ.	Max.
Freq. RF&LO(GHz)	8~15		
Freq. IF (GHz)	DC~7		
Conversion Loss(dB)	—	11	13
LO~RF Isolation(dB)	30	40	—
LO~IF Isolation(dB)	28	30	—
RF~IF Isolation(dB)	6	8	—
Input Power for 1dB Compression(dBm)	10	—	—

Measured Performance

Unless otherwise noted, IF=100MHz.

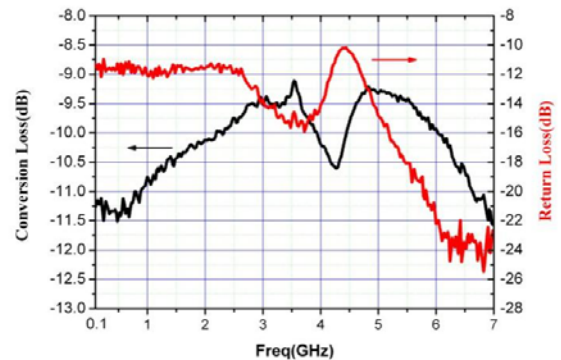
Conversion Loss



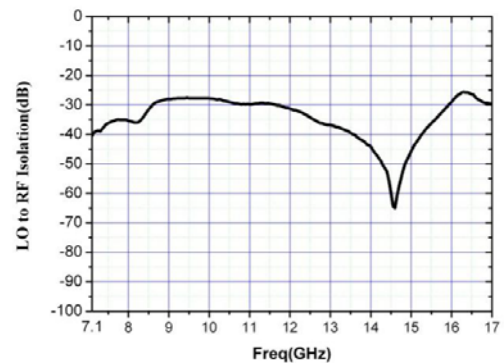
IF Bandwidth

RF: 8.0GHz LO: 8.1~15GHz IF: 0.1~7GHz

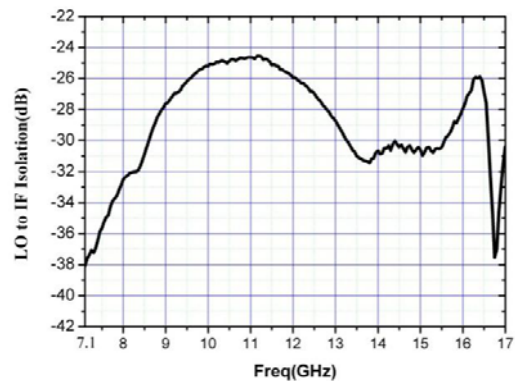
Return Loss



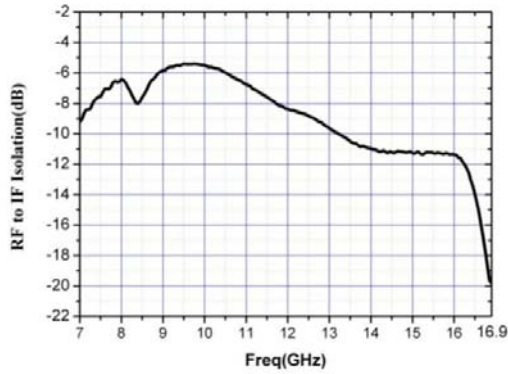
LO-RF Isolation



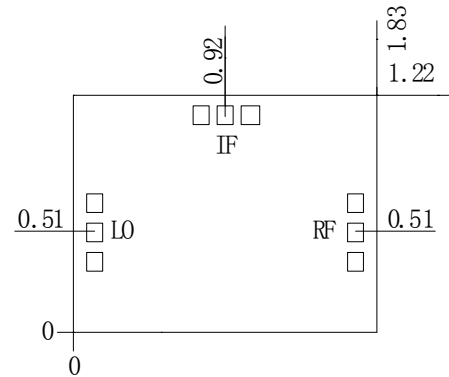
LO-IF Isolation



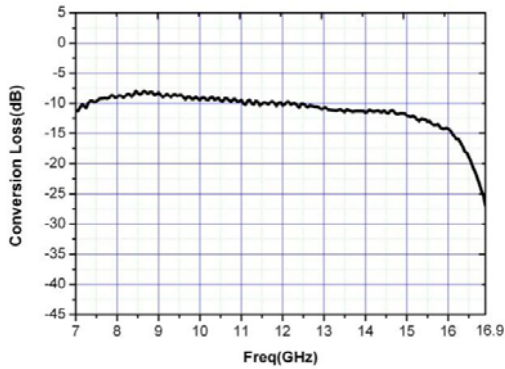
RF-IF Isolation



Outline Drawing (mm)



Up-Conversion Loss



Notes:

1. The chip should be stored in a dry and nitrogen environment, and used in a clean environment.
2. GaAs material is brittle, can not touch the surface of the chip, must be careful when using.
3. The chip is welding with conductive adhesive or alloy (alloy temperature should not exceed 300°C, and no more than 30 sec.), and should make it fully grounded.
4. The chip microwave port and substrate gap is not exceeding 0.05mm, with Φ25μm double gold wire bonding, suggested length of gold wire 250~400μm.
5. Chip microwave port without DC blocking capacitor.
6. The chip is sensitive to static electricity, and should be protected against static electricity during storage and use.

Absolute Maximum Ratings

RF Input Power	+20dBm
Operating Temperature	-55°C~125°C
Storage Temperature	-65°C~150°C