

Features

- RF/LO Frequency: 24~40GHz
- IF Frequency: DC~10
- Conversion Loss: 8.5dB
- LO Power: 13dBm
- Die Size: 0.61mmX0.92mmX0.1mm

Typical Applications

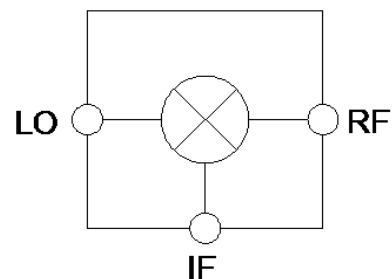
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

General Description

SAC3512 is general-purpose double balanced mixer. This MMIC mixer is fabricated in a GaAs process and requires no external components or matching circuitry. The device can be used as both up-converter and down-converter.

The chip offers full passivation for increased reliability and moisture protection.

Functional Diagram



Electrical Performance ($T_A=25^{\circ}\text{C}$, $\text{LO}=13\text{dBm}$)

| Parameter | Min. | Typ. | Max. | Units |
|-------------------------|-------|------|------|-------|
| RF/LO Frequency Range | 24~40 | | | GHz |
| IF Frequency Range | DC~10 | | | GHz |
| Conversion Loss | — | -8.5 | -12 | dB |
| IF Return Loss | — | -8 | — | dB |
| RF Return Loss | — | -10 | — | dB |
| LO Return Loss | — | -10 | — | dB |
| LO to RF Isolation | -25 | -40 | — | dB |
| LO to IF Isolation | -20 | -30 | — | dB |
| RF to IF Isolation | -20 | -30 | — | dB |
| Input $P_{-1\text{dB}}$ | 10 | 15 | — | dBm |

Absolute Maximum Ratings

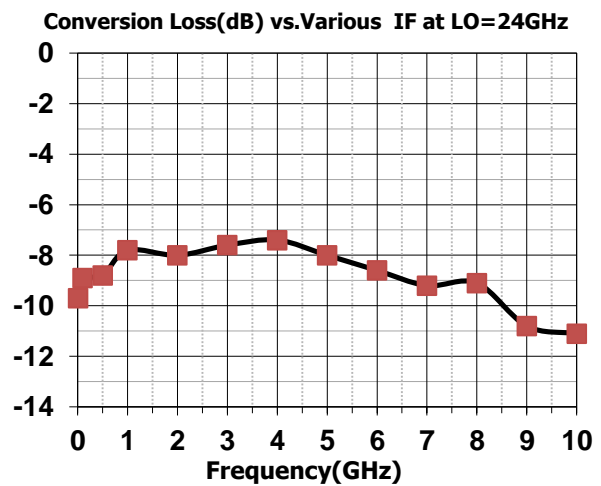
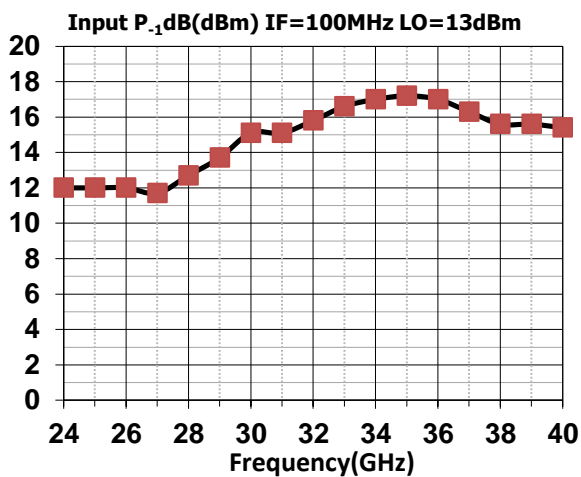
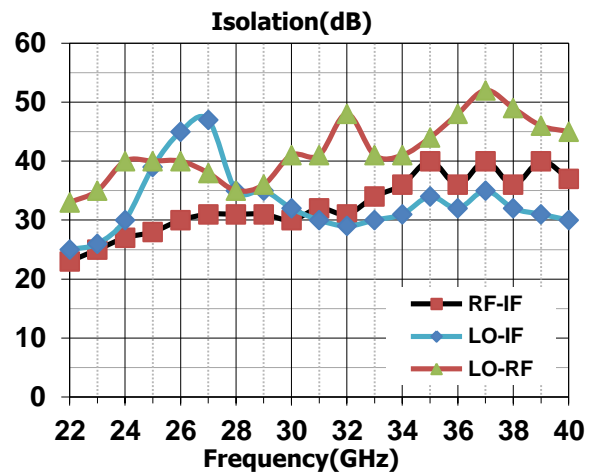
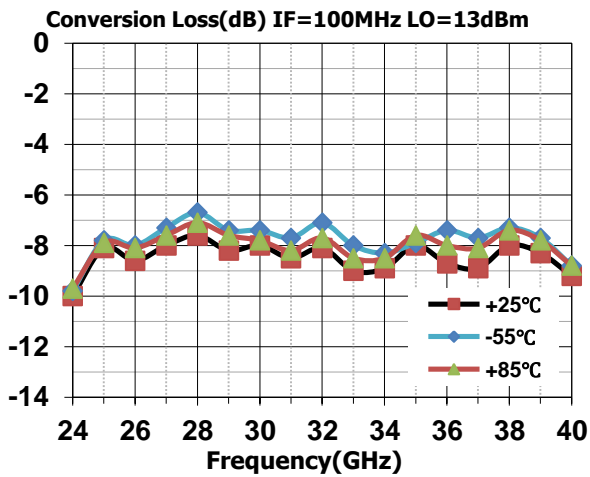
| | | | |
|---------------------|-------|-----------------------|--------------|
| Maximum RF/IF Input | 20dBm | Operating Temperature | -55°C~+85°C |
| Maximum LO Input | 20dBm | Storage Temperature | -65°C~+150°C |

SAC3512

GaAs MMIC Double Balanced Mixer
24~40GHz

Rev 2.0

Typical Performance Curve

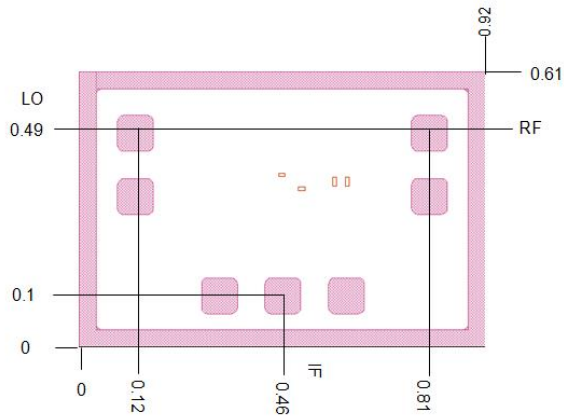


SAC3512

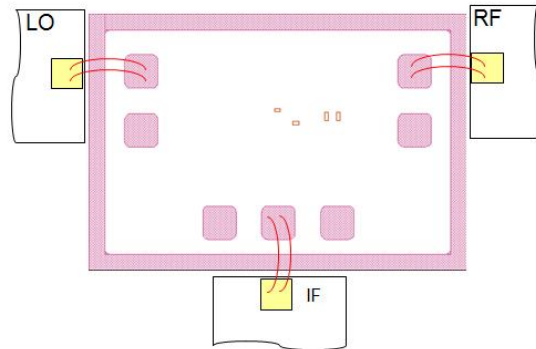
GaAs MMIC Double Balanced Mixer
24~40GHz

Rev 2.0

Die Outline
(all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from electrostatic discharge. Proper precautions should be observed during handling, assembly and test.