

SAC3514

GaAs MMIC Double Balanced Mixer
14GHz~30GHz

Rev 1.2

Features

- RF/LO Frequency: 14GHz~30GHz
- IF Frequency: DC~6GHz
- Conversion Loss: -7dB
- LO Power: 13dBm
- Die Size: 0.94mmx0.68mmX0.1mm

Typical Applications

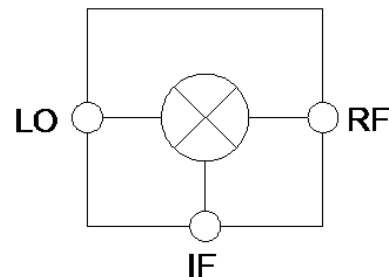
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

General Description

SAC3514 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	14~30			GHz
IF Frequency Range	DC~6			GHz
Conversion Loss	—	-7	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-10	—	dB
LO to RF Isolation	—	-45	—	dB
LO to IF Isolation	—	-32	—	dB
RF to IF Isolation	—	-32	—	dB

Absolute Maximum Ratings

Maximum RF/IF Input	20dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	13dBm	Storage Temperature	-65°C~+150°C

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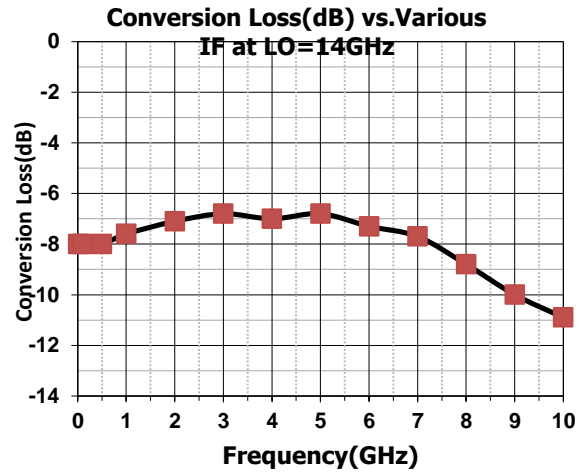
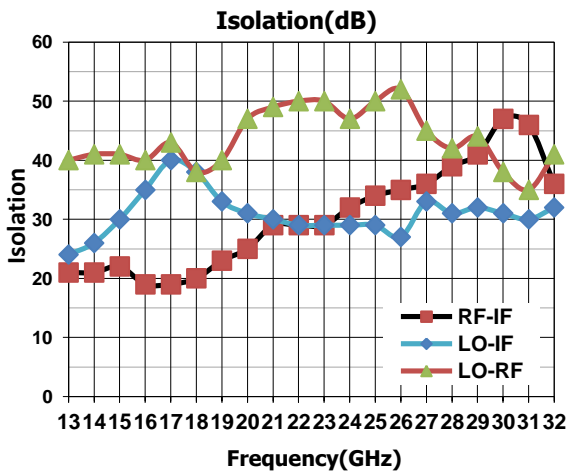
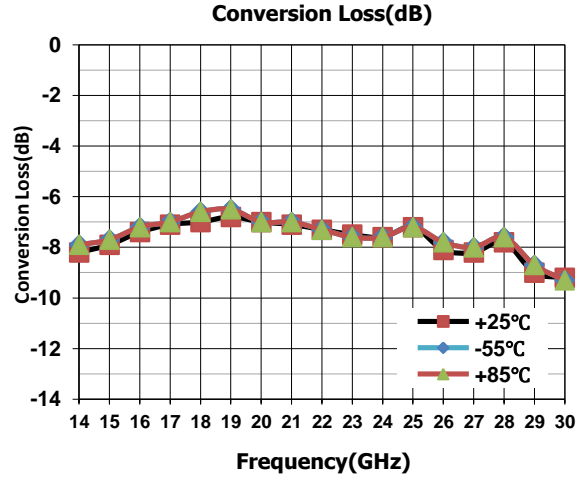
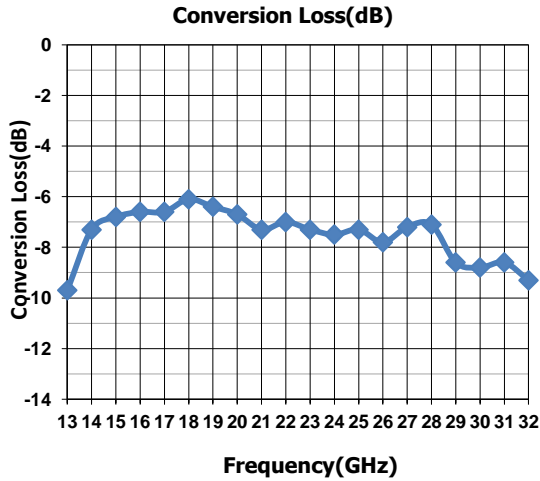
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Typical Performance Curve



SuperApex, LLC

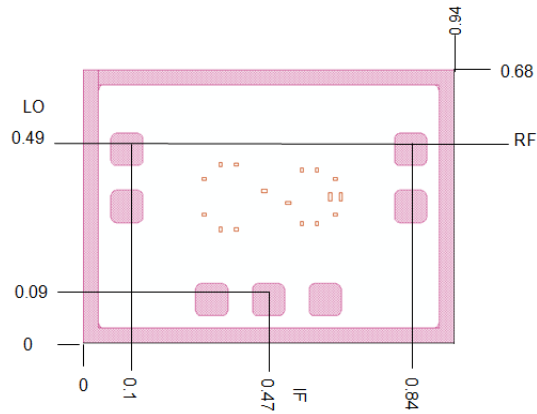
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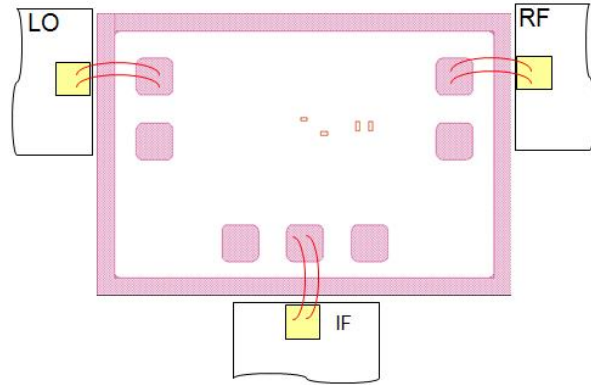
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Die Outline
(All dimensions in mm)



Assembly Diagram



Attention:

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