

SAC3509

GaAs MMIC Double Balanced Mixer
5.0~10GHz

Rev 2.1

Features

- RF/LO Frequency: 5.0~10GHz
- IF Frequency: DC~4GHz
- Conversion Loss: 8dB
- LO Power: +13dBm
- Die Size: 1.24mm×0.82mm×0.1mm

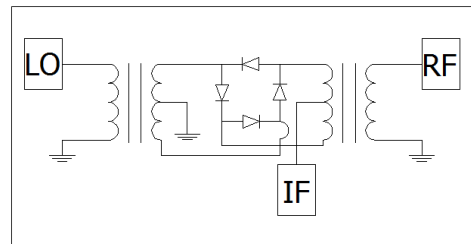
Typical Applications

- EW
- Military Radar and Weather Radar
- SATCOM
- Beamforming

General Description

SAC3509 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.

Functional Diagram



Electrical Performance

($T_A=25^{\circ}\text{C}$, LO=+13dBm, Vdd=+5V, Up-Converter Performance)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	5.0~10			GHz
IF Frequency Range	DC~4			GHz
Conversion Loss	—	-8	—	dB
LO to RF Isolation	—	-38	—	dB
LO to IF Isolation	—	-35	—	dB
RF to IF Isolation	—	-15	—	dB

Electrical Performance

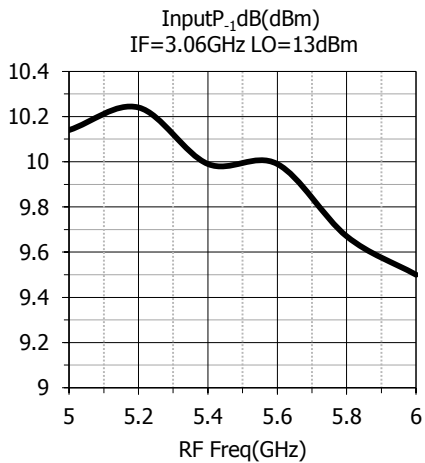
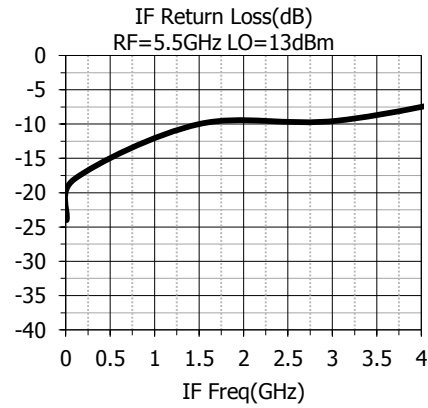
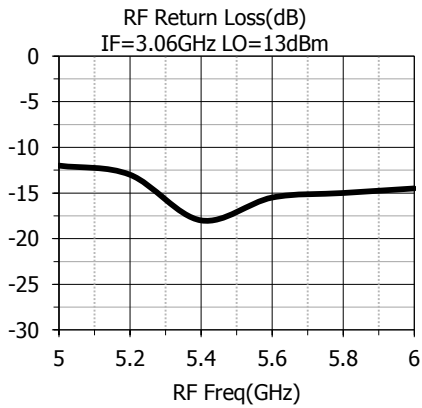
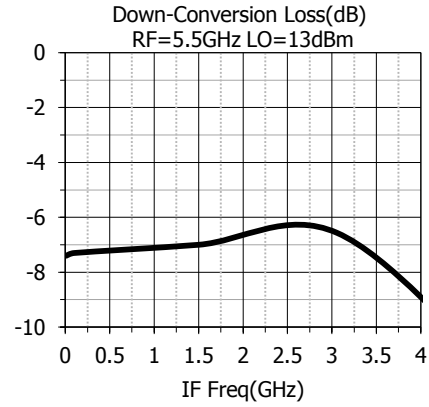
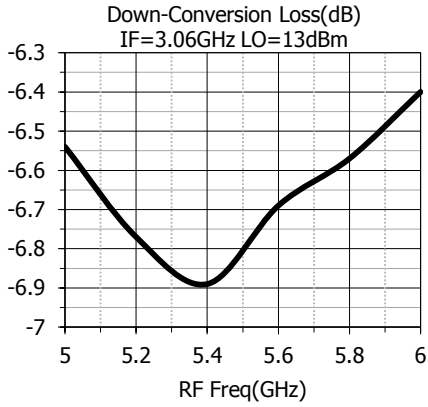
($T_A=25^{\circ}\text{C}$, LO=+13dBm, Vdd=+5V, Down-Converter Performance)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	5.0~10			GHz
IF Frequency Range	DC~4			GHz
Conversion Loss	—	-8	—	dB
LO to RF Isolation	—	-38	—	dB
LO to IF Isolation	—	-35	—	dB
RF to IF Isolation	—	-15	—	dB

Absolute Maximum Ratings

Maximum RF Input	+20dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	+24dBm		
Maximum Input Voltage	+8V	Storage Temperature	-65°C~+150°C

Typical Performance Curve (Down-Converter Performance)

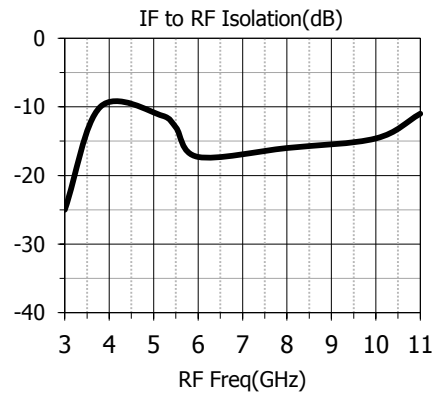
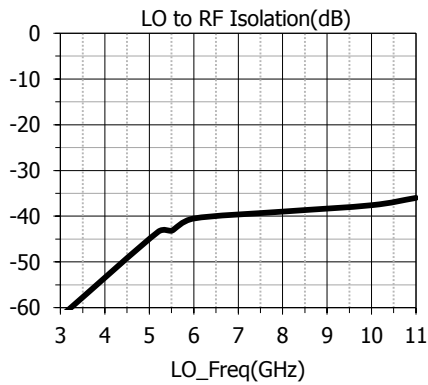
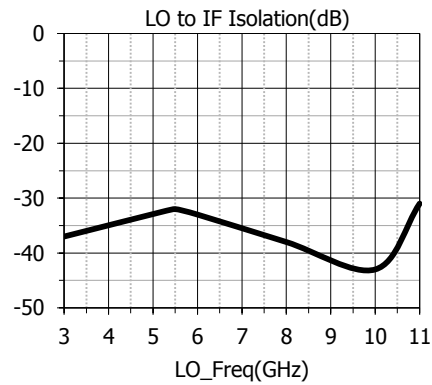


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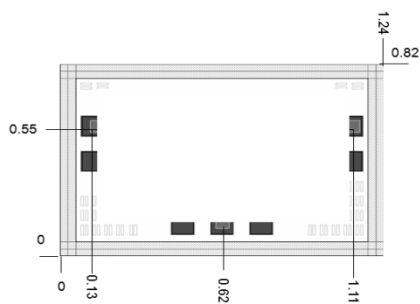
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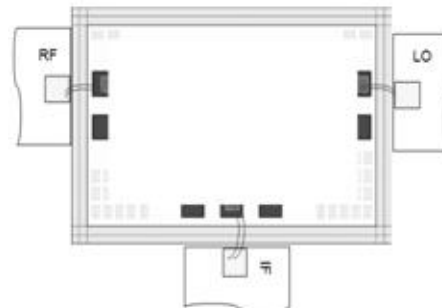
Typical Performance Curve (Isolation)



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.