

Features

- RF/LO Frequency: 2.0~6.0GHz
- IF Frequency: DC~2GHz
- Conversion Loss: 8dB
- LO Power: +0dBm
- Die Size: 1.24mm×2.66mm×0.1mm

Typical Applications

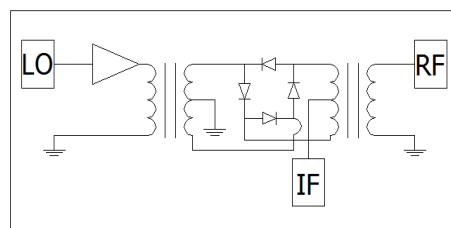
- EW
- Military Radar and Weather Radar
- SATCOM
- Beamforming

General Description

SAC3508 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

($T_A=25^{\circ}\text{C}$, $\text{LO}=+0\text{dBm}$, $V_D=+5\text{V}$, $I_D=42\text{mA}$, Up-Converter Performance)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	2.0~6.0			GHz
IF Frequency Range	DC~2			GHz
Conversion Loss	—	-7	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-12	—	dB
LO to RF Isolation	—	-25	—	dB
LO to IF Isolation	—	-20	—	dB
RF to IF Isolation	—	-15	—	dB

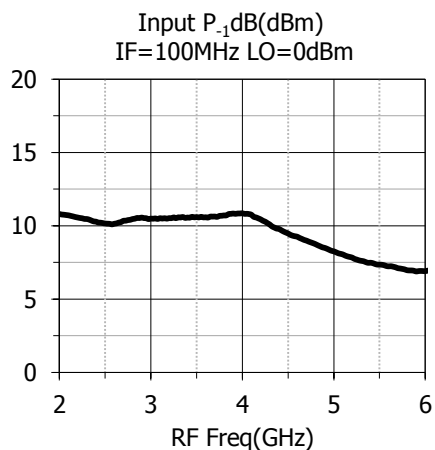
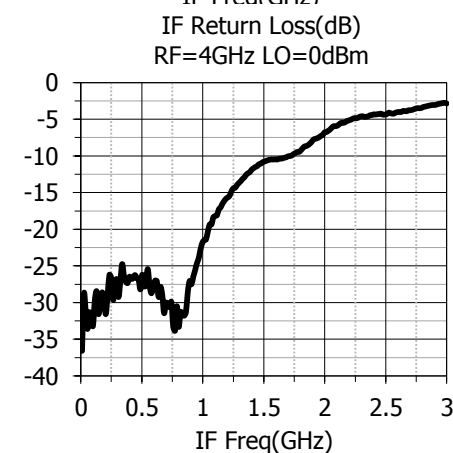
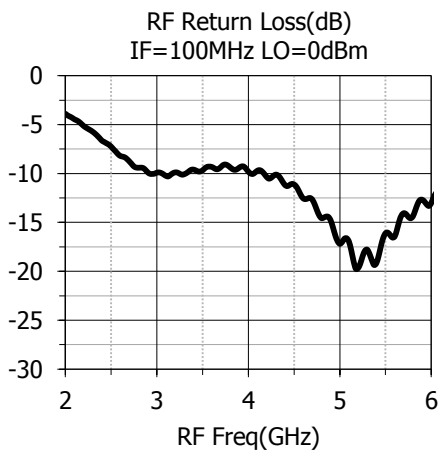
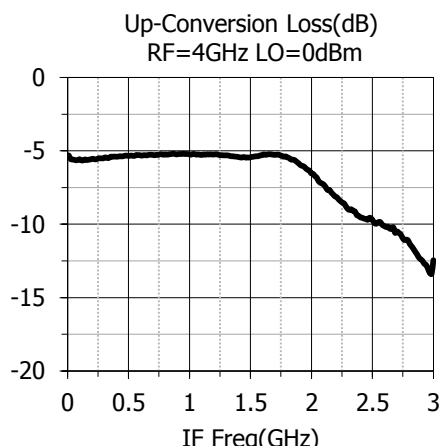
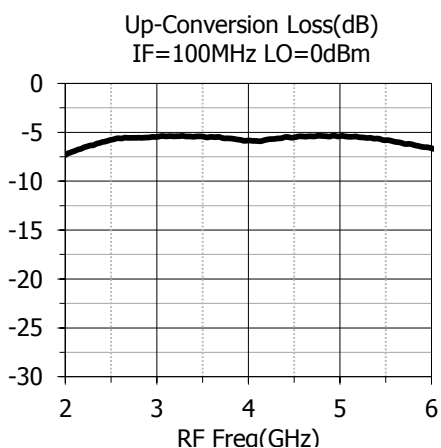
($T_A=25^{\circ}\text{C}$, $\text{LO}=+0\text{dBm}$, $V_D=+5\text{V}$, $I_D=42\text{mA}$, Down-Converter Performance)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	2.0~6.0			GHz
IF Frequency Range	DC~2			GHz
Conversion Loss	—	-8	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-12	—	dB
LO to RF Isolation	—	-30	—	dB
LO to IF Isolation	—	-25	—	dB
RF to IF Isolation	—	-15	—	dB

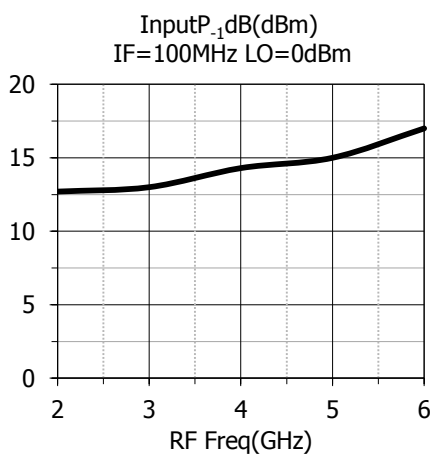
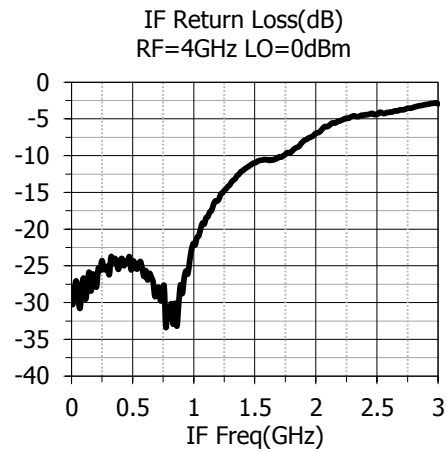
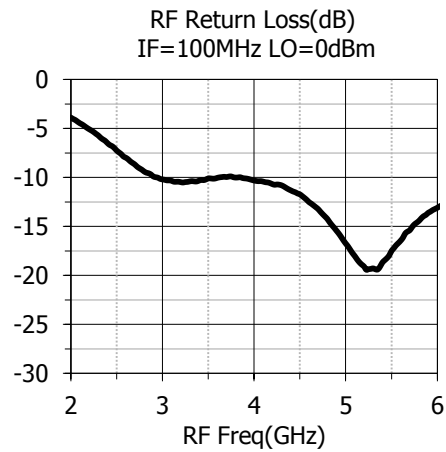
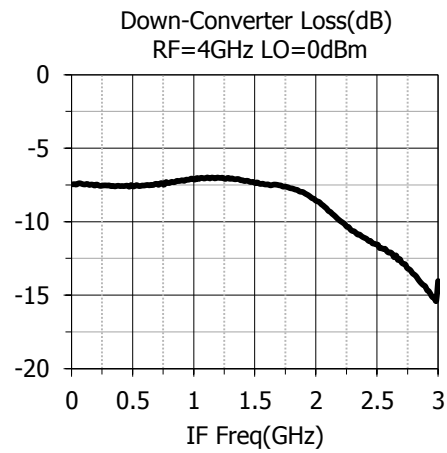
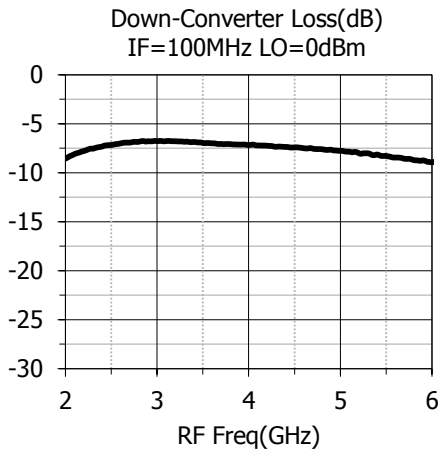
Absolute Maximum Ratings

Maximum RF Input	+20dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	+10dBm		
Maximum Input Voltage	+8V	Storage Temperature	-65°C~+150°C

Typical Performance Curve (Up-Converter Performance)



Typical Performance Curve (Down-Converter Performance)

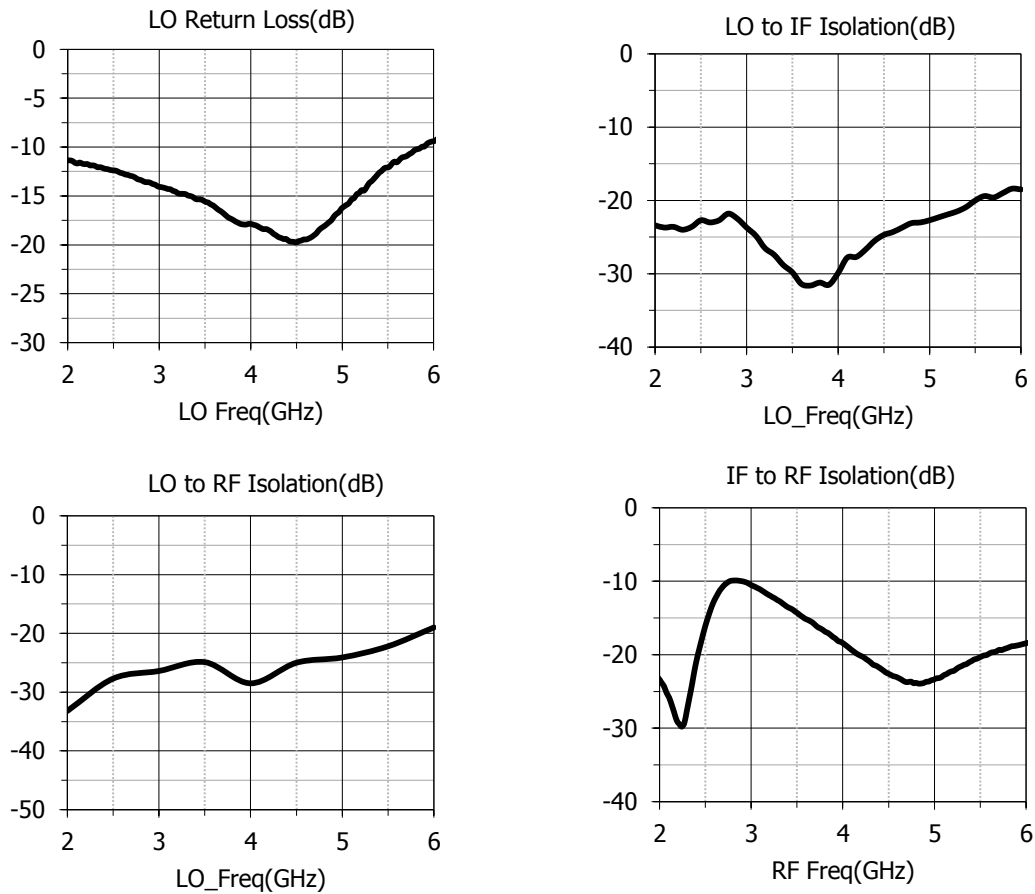


SAC3508

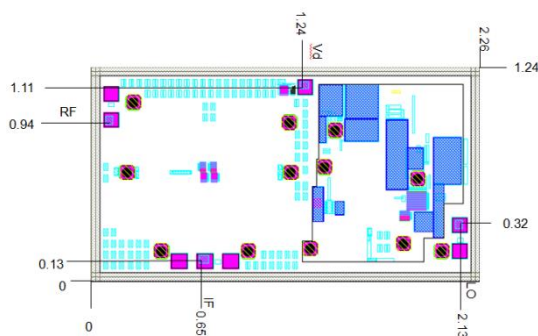
GaAs MMIC Double Balanced Mixer
2.0~6.0GHz

Rev 2.1

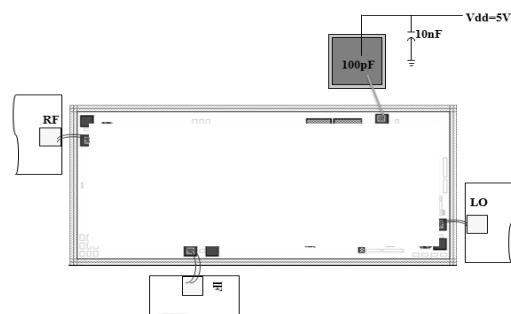
Typical Performance Curve (Isolation)



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.