

SAC3507A

GaAs MMIC Double Balanced Mixer
0.9~3GHz

Rev 2.1

Features

- RF/LO Frequency Range: 0.9GHz~3GHz
- IF Frequency Range: DC~0.8GHz
- Conversion Loss: 8dB
- LO Power: +0dBm
- Die Size: 1.24mm×2.66mm×0.1mm

General Description

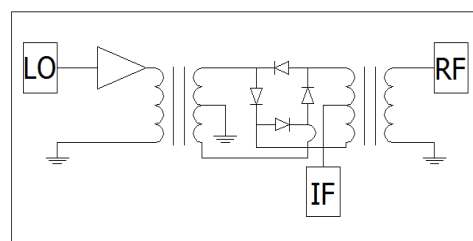
SAC3507A is general-purpose double balanced mixer. This MMIC mixer is fabricated in a GaAs process and requires no external components or matching circuitry. The device can be used as both up-converter and down-converter.

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

Typical Applications

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

Functional Diagram



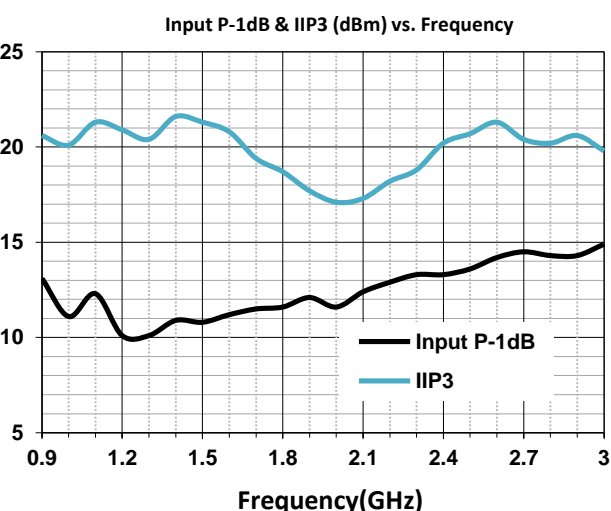
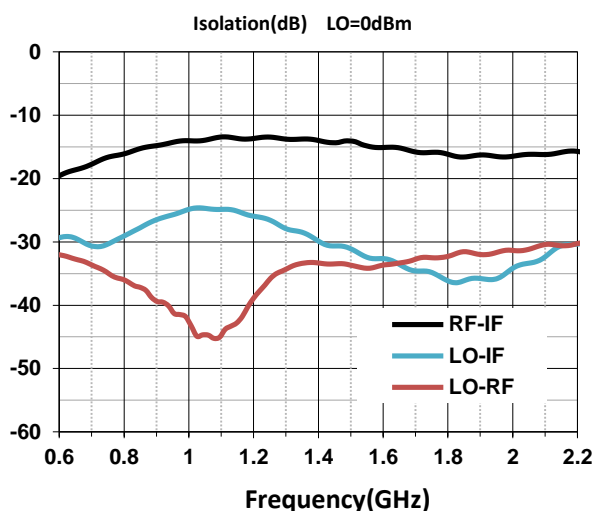
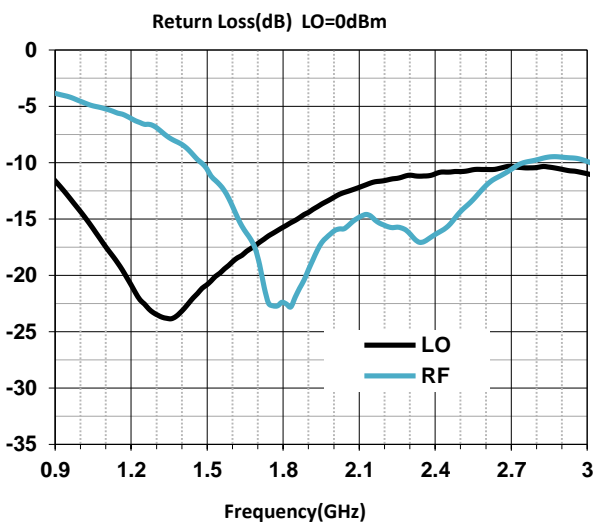
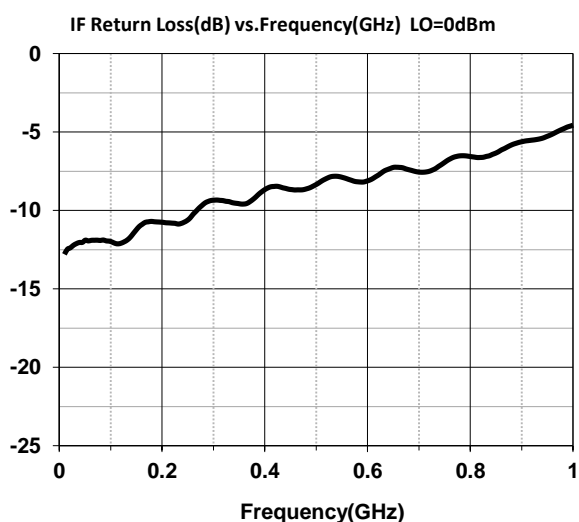
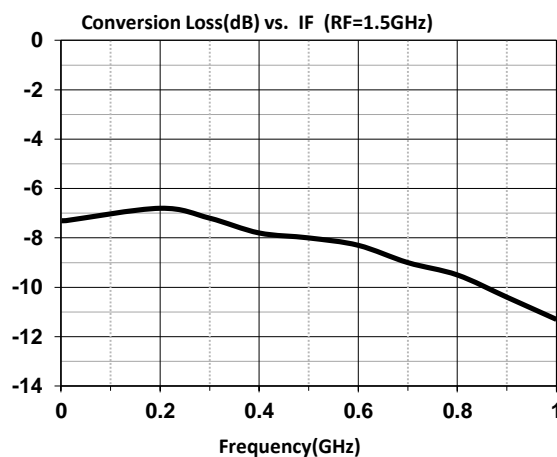
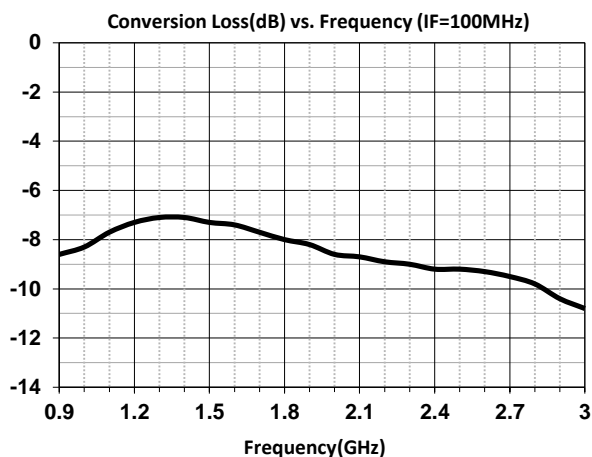
Electrical Performance ($T_A=25^{\circ}\text{C}$, LO= +0dBm , $V_D=+5\text{V}$, $I_D=38\text{mA}$)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	0.9 ~ 3.0			GHz
IF Frequency Range	DC~0.8			GHz
Conversion Loss	—	-8	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-15	—	dB
LO to RF Isolation	—	-35	—	dB
LO to IF Isolation	—	-30	—	dB
RF to IF Isolation	—	-18	—	dB

Absolute Maximum Ratings

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

Typical Performance Curve

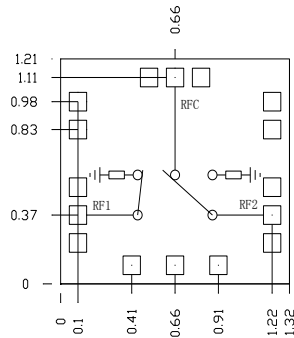


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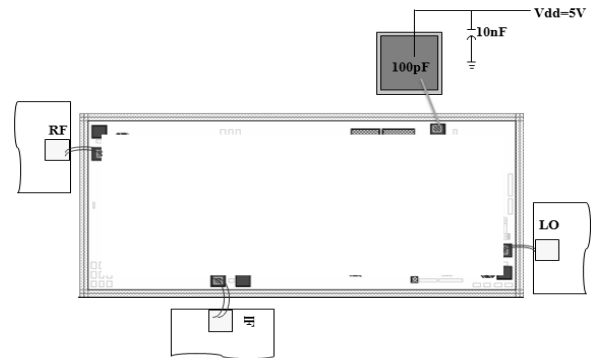
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Die Outline (All dimensions in mm)



Assembly Diagram



Attention:

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