

Features

- RF Frequency Range: 8.0~12GHz
- LO Frequency Range: 10.8~14.8GHz
- IF Frequency Range: 2.8GHz
- Converter Gain: 5dB
- OutputP_{-1dB}: 18dBm
- LO Power: -3dBm
- Supply Voltage: 5V@110mA

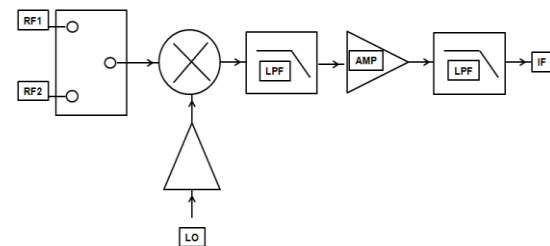
Typical Applications

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

General Description

SAC3607 is a multifunctional chip which integrates switch, mixer, low pass filter, amplifier. RF can vary from 8GHz to 12GHz, and LO varies from 10.8GHz to 14.8GHz. Biased at 5V, it delivers 5dB conversion gain and better than 18dBm IF OutputP_{-1dB}. With typical -3dBm LO input power, it has less than 110mA DC current consumption.

Functional Diagram



Electrical Performance (T_A=+25°C, LO=-3dBm, IF=2.8GHz, V_D=+5V, V_S=-5V)

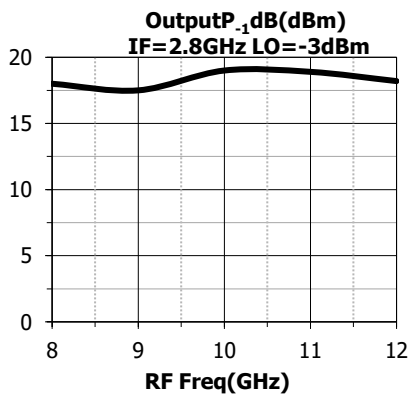
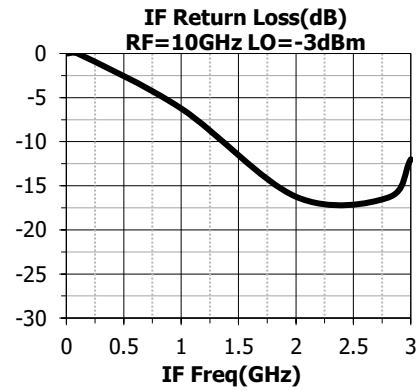
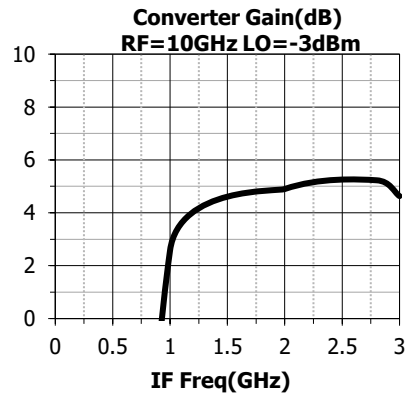
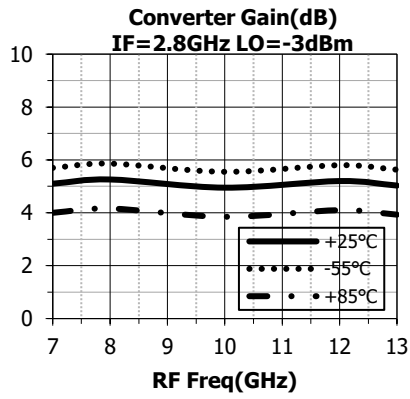
Parameter	Min.	Typ.	Max.	Units
RF Frequency Range	8.0~12			GHz
LO Frequency Range	10.8~14.8			GHz
IF Frequency Range	2.8			GHz
Converter Gain	—	5	—	dB
OutputP _{-1dB}	—	18	—	dBm
RF Return Loss	—	-17	—	dB
IF Return Loss	—	-22	—	dB
LO to RF Isolation	-14	—	—	dB
LO to IF Isolation	-48	—	—	dB
RF to IF Isolation	-57	—	—	dB
RF to LO Isolation	-52	—	—	dB
RF1-RF2 Isolation	—	-42	—	dB
LO Return Loss	—	-15	—	dB
Supply Current (I _b)	—	110	—	mA

Absolute Maximum Ratings

Maximum RF Input Power	+10dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input Power	+10dBm	Storage Temperature	-65°C~+150°C
LO Input	-4~-2dBm	Maximum Input Voltage	+8V

Typical Performance Curve

($T_A=+25^{\circ}\text{C}$, $\text{LO}=-3\text{dBm}$, $\text{IF}=2.8\text{GHz}$, $V_D=+5\text{V}$, $V_S=-5\text{V}$)

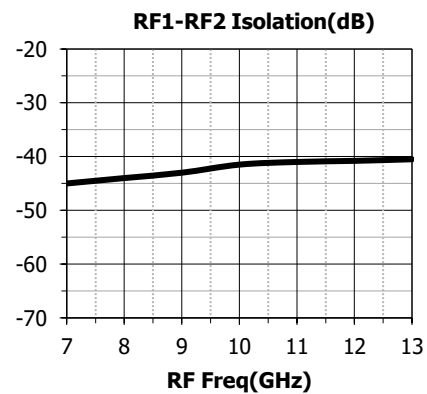
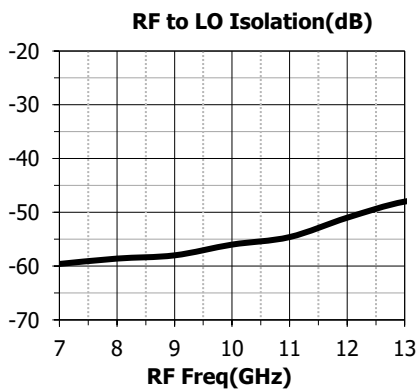
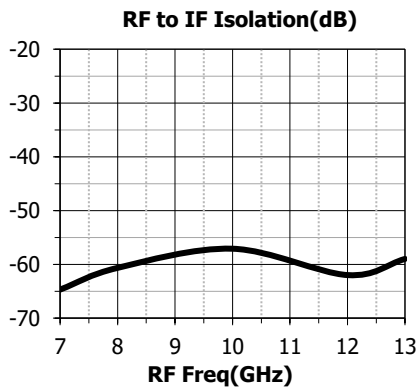
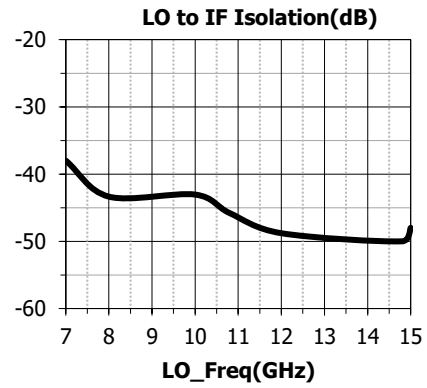
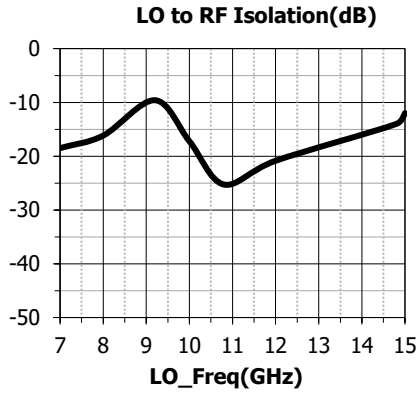


SAC3607



GaAs MMIC Multifunction Chip
8.0~12GHz

Rev 2.1



SuperApex, LLC

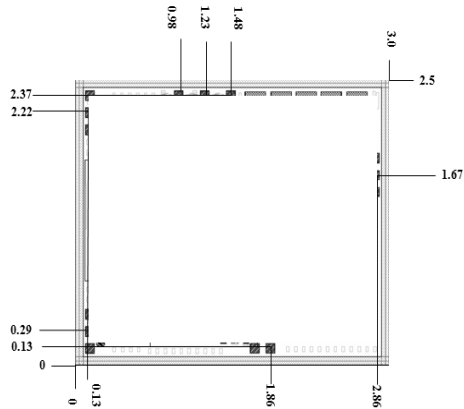
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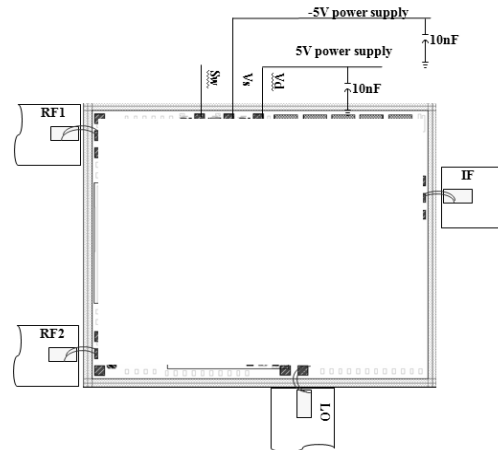
GaAs MMIC Multifunction Chip
8.0~12GHz

Rev 2.1

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.