SAC3607Q5

GaAs MMIC Multifunction Chip (Package)
8.0～12GHz

Rev 1.1

Features

- RF Frequency Range：8.0～12GHz
- LO Frequency Range：10.8～14.8GHz
- IF Frequency Range：2.8GHz
- Converter Gain：4.5dB
- OutputP_{-1}dB：18dBm
- LO Power：-3dBm
- Supply Voltage：5V@110mA
- Package Size: 5mm X 5mm X 1.2mm

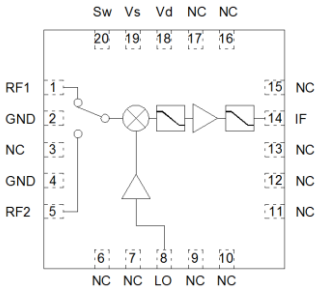
Typical Applications

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

General Description

SAC3607Q5 is a multifunctional chip which integrates switch, mixer, low pass filter, amplifier. With fixed 2.8GHz IF frequency, 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_{-1}dB. With typical -3dBm LO input power, it has less than 110mA DC current consumption.

Functional Diagram



Electrical Performance (T_A=+25℃, 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	—	4.5	—	dB
OutputP_{-1}dB	—	18	—	dBm
RF Return Loss	—	-17	—	dB
IF Return Loss	—	-12	—	dB
LO to RF Isolation	—	-30	—	dB
LO to IF Isolation	—	-50	—	dB
RF to IF Isolation	—	-55	—	dB
RF to LO Isolation	—	-50	—	dB
RF1-RF2 Isolation	—	-42	—	dB
LO Return Loss	—	-14	—	dB
Supply Current(I_D)	—	110	—	mA

Absolute Maximum Ratings

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

RoHS

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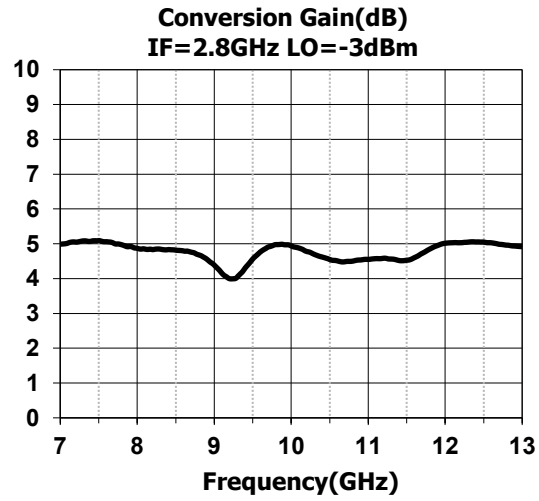
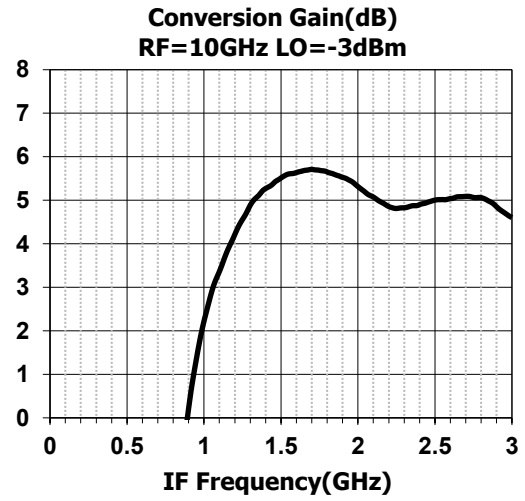
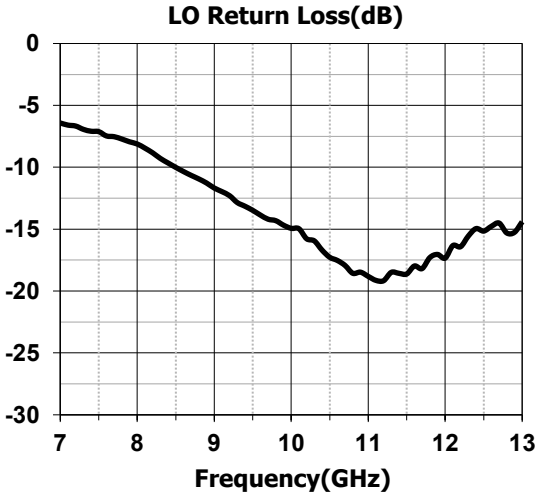
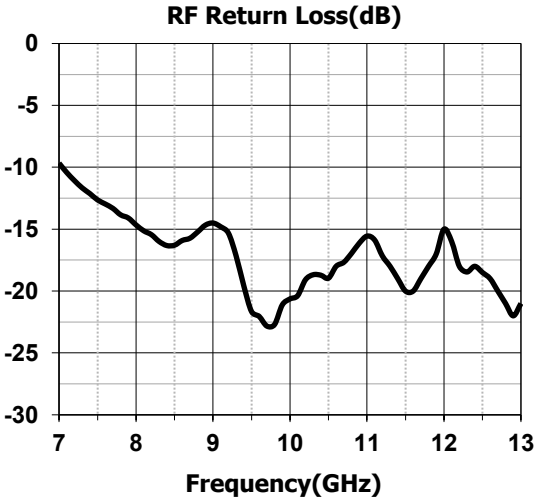
Typical Performance Curve

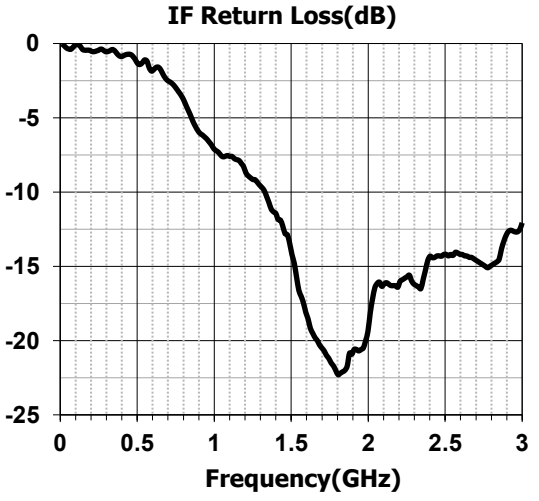
（T_A=+25℃，LO=-3dBm，IF=2.8GHz，V_D=+5V，Vs=-5V）

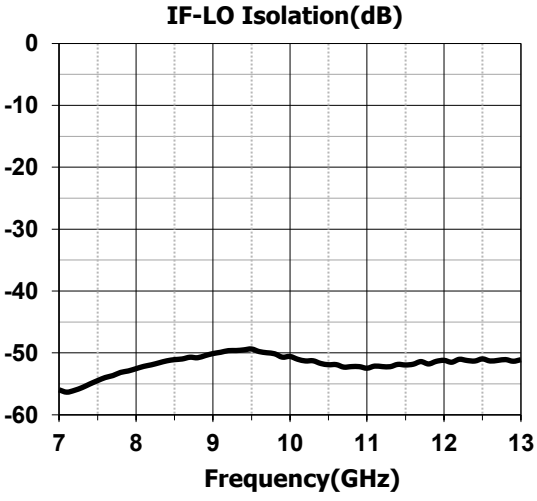












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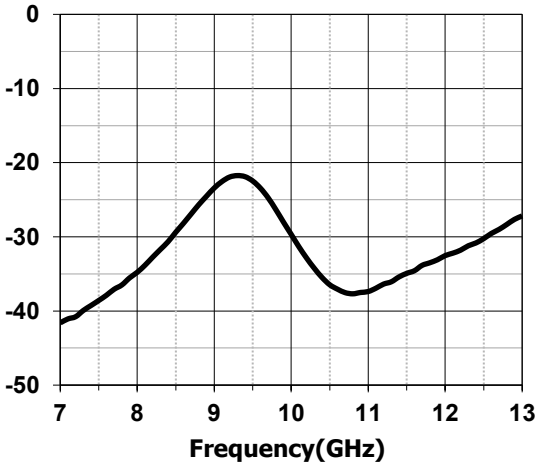
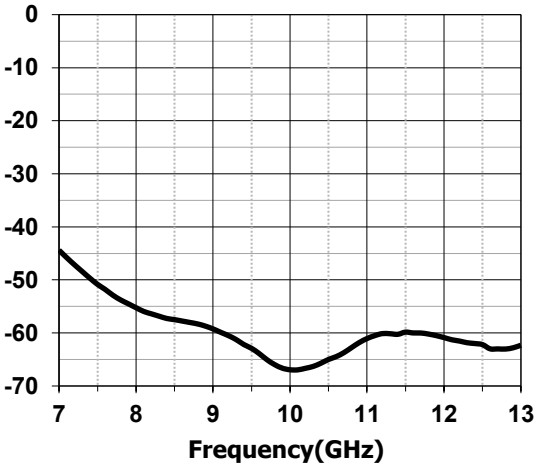
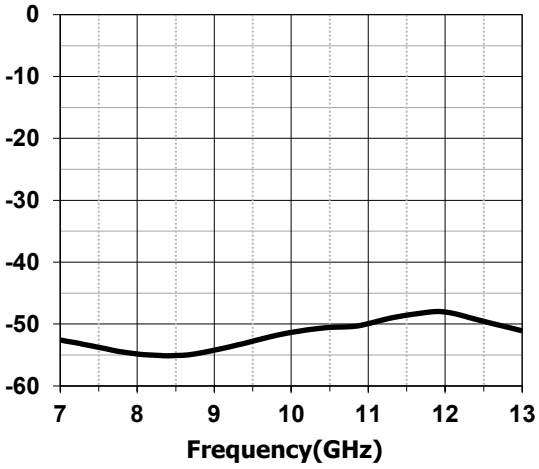
RF-LO Isolation(dB)



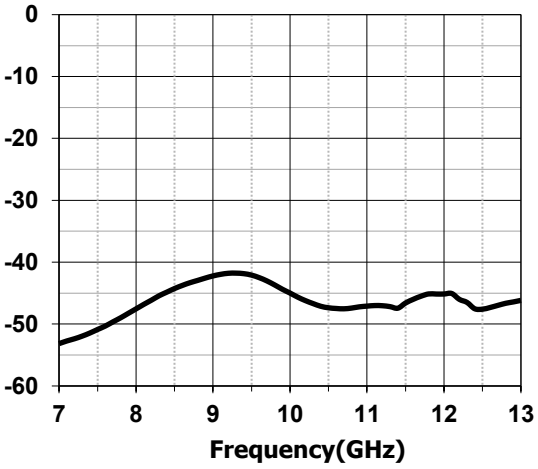
IF-RF Isolation(dB)



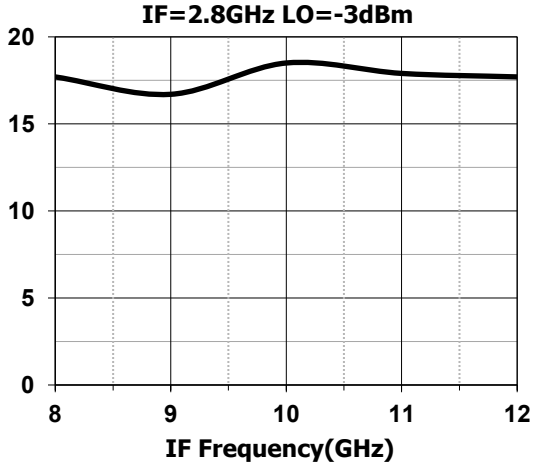
LO-RF Isolation(dB)



RF1-RF2 Isolation(dB)



OP_{-1}dB(dBm)
IF=2.8GHz LO=-3dBm



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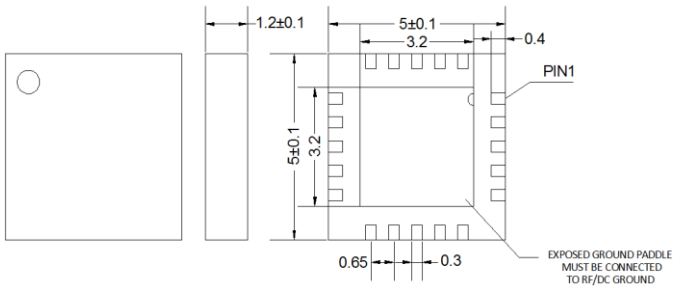
Outline Drawing

(All dimensions in mm)



Attention:

1. The moisture resistant grade of products is 2A, the storage environment ≤30° C/60% RH，The surrounding workshop Life is 4 weeks. 2. After un-packing, It is necessary to bake the parts for 6 hours in 125+/-5 degree environment before soldering.

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