

# SAC3606Q4



GaAs MMIC Multifunction Up-converter Chip (Package)  
8.0~12GHz/10.8~14.8GHz

Rev 1.3

## Features

- RF Frequency Range: 8.0~12GHz
- LO Frequency Range: 10.8~14.8GHz
- IF Frequency Range: 2.8GHz
- Convert Loss: 9dB
- Input P<sub>-1dB</sub>: 18dBm
- LO Power: -3dBm
- Supply Voltage: 70mA@5V
- Package Size: 4mmx4mmx1.2mm

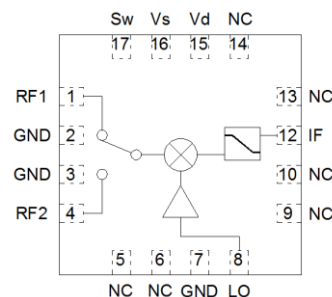
## Typical Applications

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

## General Description

SAC3606Q4 is a multifunctional chip (package) which integrates switch, mixer, low pass filter function. 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 8.5dB conversion loss and better than 18dBm Input P<sub>-1dB</sub>. With typical -3dBm of LO input power, it has less than 70mA DC current consumption.

## Functional Diagram



## Electrical Performance

(T<sub>A</sub>=+25°C, LO=-3dBm, IF= 2.8GHz, V<sub>D</sub>=+5V, V<sub>S</sub>=-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
Conversion Insertion Loss	—	-9	—	dB
Input P <sub>-1dB</sub>	—	18	—	dBm
RF Return Loss	—	-15	—	dB
IF Return Loss	—	-8	—	dB
LO to RF Isolation	—	-30	—	dB
LO to IF Isolation	—	-40	—	dB
RF to IF Isolation	—	-45	—	dB
RF to LO Isolation	—	-55	—	dB
RF1-RF2 Isolation	—	-42	—	dB
LO Return Loss	—	-14	—	dB
Supply Current(I <sub>D</sub> )	—	70	—	mA

## Absolute Maximum Ratings

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

## SuperApex, LLC

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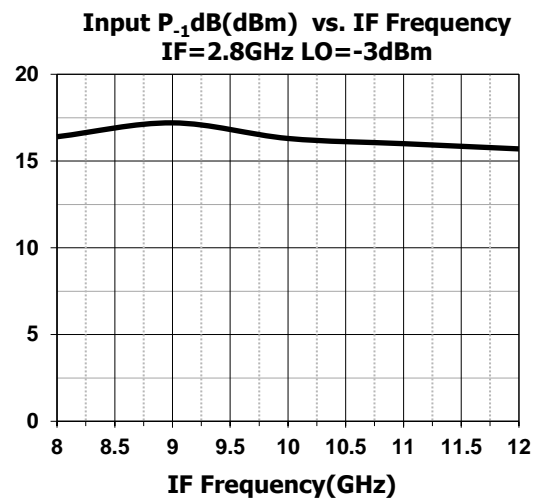
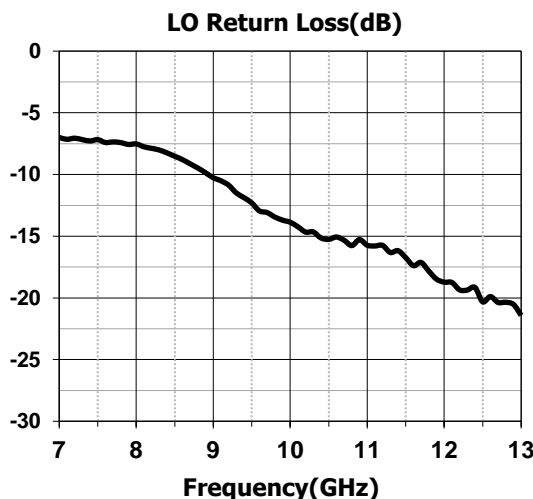
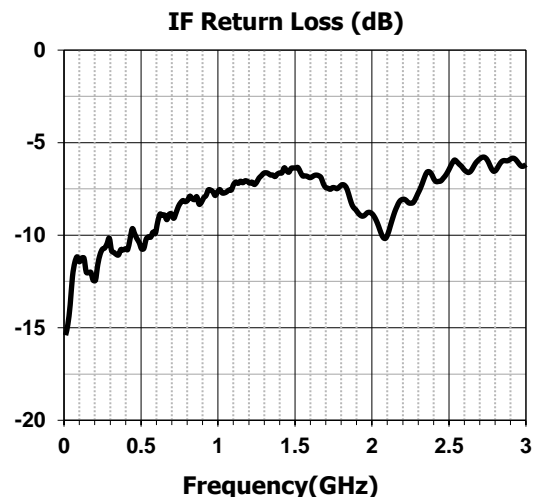
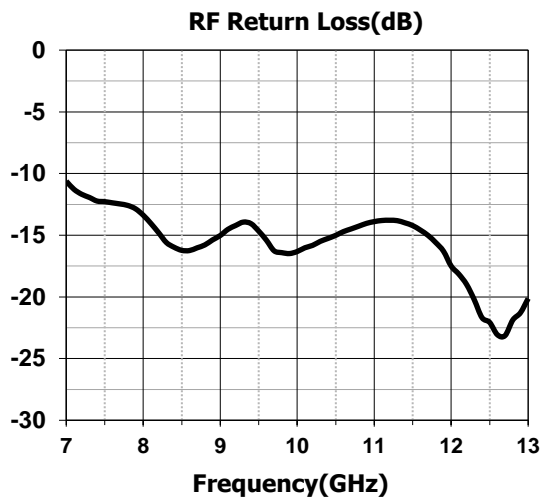
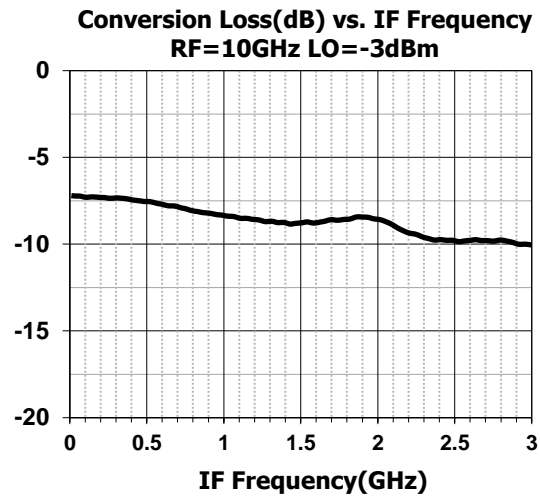
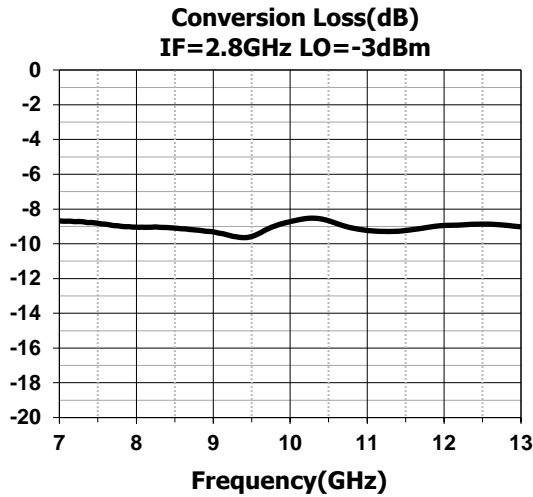


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## Typical Performance Curve

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



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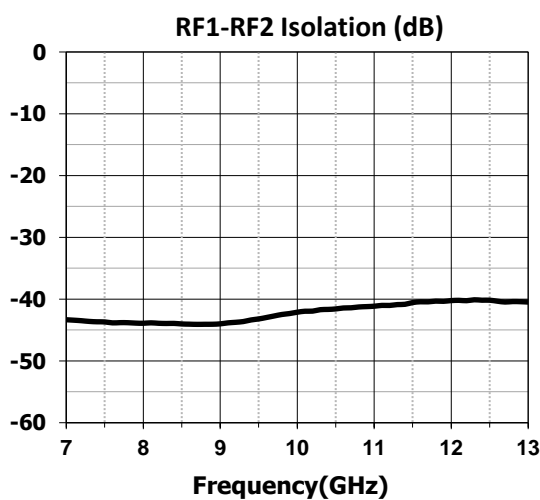
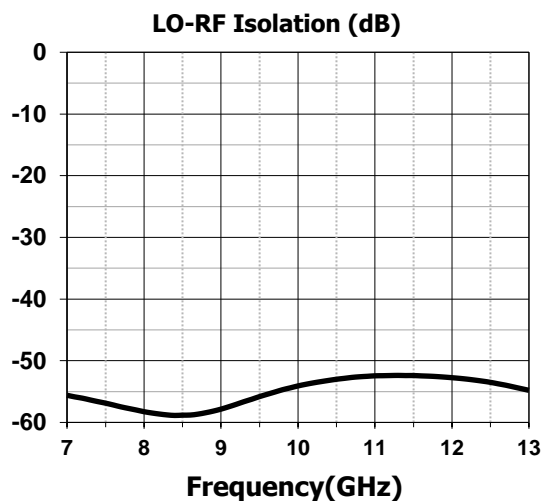
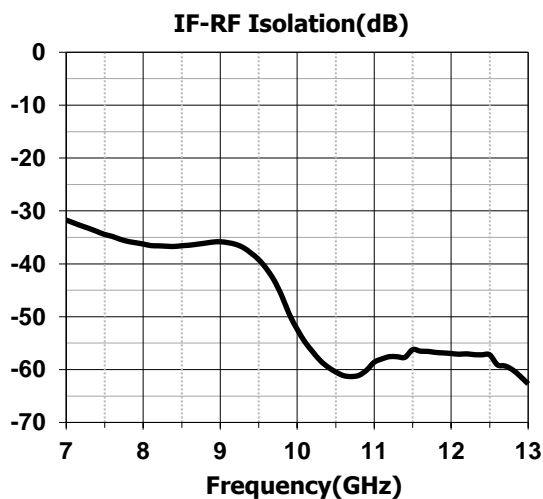
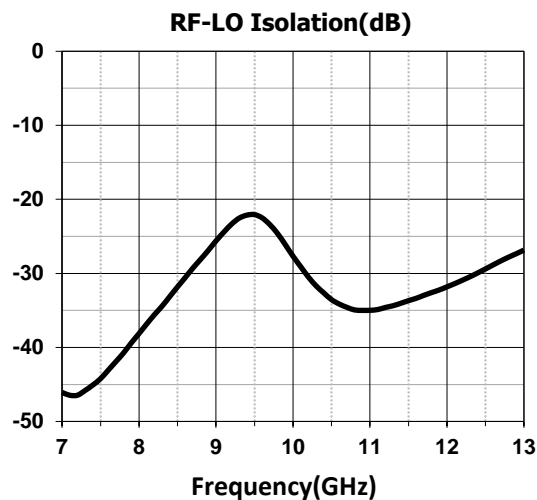
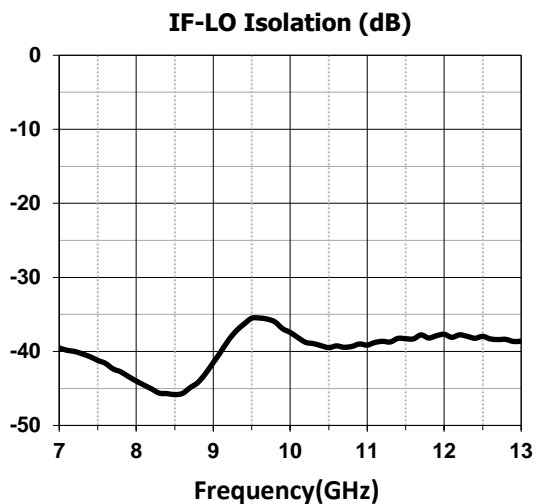
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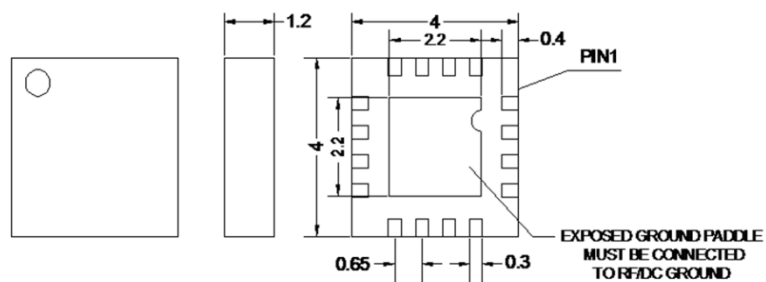
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## Outline Drawing

(All dimensions in mm)



### Attention:

1. The moisture resistant grade of products is 2A, the storage environment  $\leq 30^{\circ}$  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  $125 \pm 5$  degree environment before soldering.

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