

## Features

- Frequency Range: DC~12GHz
- Isolation: >42dB@12GHz
- Insertion loss: 1.1dB@12GHz
- Control Voltage: 0/+5V
- Package Size: 3mm×3mm×1.2mm

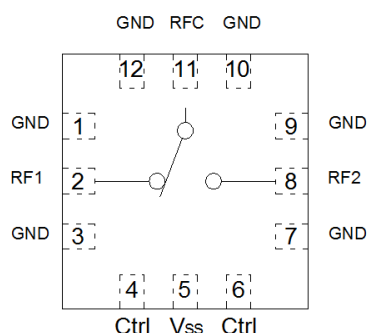
## General Description

SAC3203AQ3 is a general-purpose broadband high isolation reflective GaAs pHEMT SPDT switch in leadless 3×3mm surface mount package. The switch offers over 42 dB isolation and less than 1.4dB insertion loss over operation frequency. Its fast switching and compact size make this SPDT ideal for a lot of critical applications. The switch operates using complementary positive control voltage logic lines of 0/+5V.

## Typical Applications

- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## Functional Diagram



## Electrical Performance

$T_A = +25^\circ\text{C}$ ,  $V_{SS} = -5\text{V}$ , Control Voltage = 0/+5V,  $Z_0 = 50\Omega$

Parameter	Freq.	Min.	Typ.	Max.	Units
Insertion Loss	DC~12GHz	—	-1.1	-1.4	dB
Isolation	DC~12GHz	-42	-48	—	dB
Return Loss(RFC)	DC~12GHz	-15	-20	—	dB
Return Loss(RF1,RF2)	DC~12GHz	-15	-20	—	dB
Input P <sub>-1dB</sub>	DC~12GHz	—	25	—	dBm
Input IP <sub>3</sub>	DC~12GHz	—	42	—	dBm
Switching Speed	DC~12GHz	—	30	—	ns

## Absolute Maximum Ratings

Input power	30dBm	Control Voltage Range	0~5.5V
Channel Temperature	150°C	Storage Temperature	-65°C~+150°C
Operating Temperature	-55°C~+85°C	ESD Sensitivity (HBM)	Class 1A

## Control Voltages

State	Bias Condition
Low	0~ 0.5V
High	3~ 5.5V

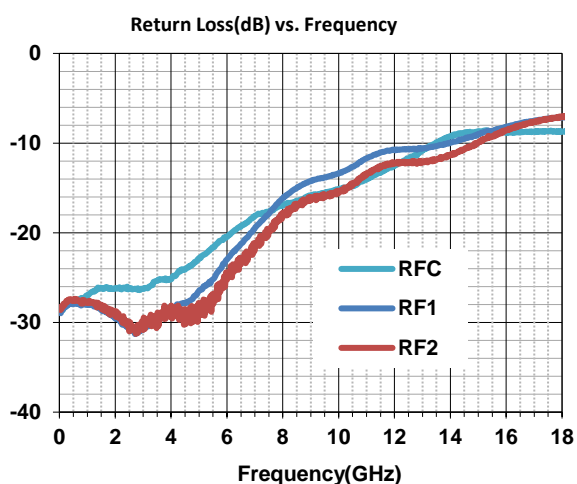
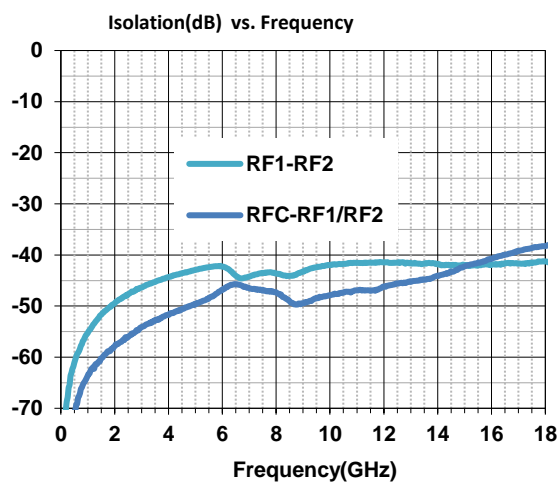
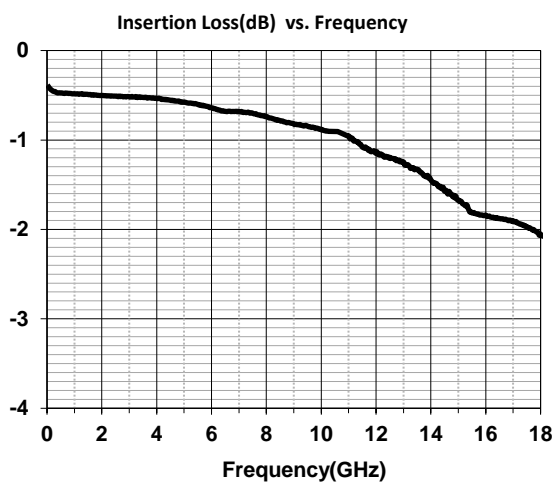
## Bias Voltage & Current

V <sub>SS</sub>	I <sub>DD</sub>
-5V	2mA

## Truth Table

Control Input	Signal Path State	
	RFC-RF1	RFC-RF2
Low	OFF	ON
High	ON	OFF

## Typical Performance Curve



# SAC3203AQ3

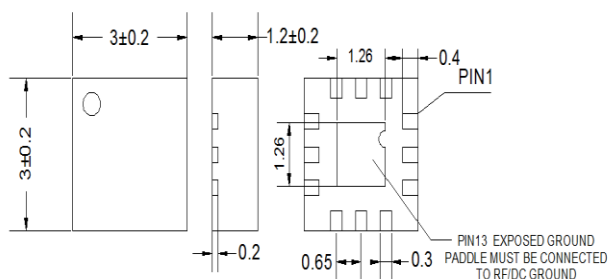


GaAs MMIC SPDT Switch  
DC~12GHz

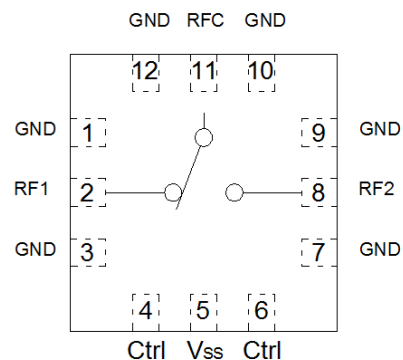
Rev 1.1

## Outline Drawing

(All dimensions in mm)



## Assembly Diagram



### Attention:

1. The moisture resistant grade of products is 2A, the storage environment  $\leq 30^{\circ}\text{C}/60\% \text{RH}$ , the surrounding workshop Life is 4 weeks.
2. After un-packing, it is necessary to bake the parts for 6 hours in  $125 \pm 5^{\circ}\text{C}$  environment before soldering.