

Features

- Frequency Range: DC~12GHz
- Isolation: >40dB@12GHz
- Insertion Loss: 2.0dB@12GHz
- Non-reflective
- Die Size: 1.21mm×1.32mm×0.1mm

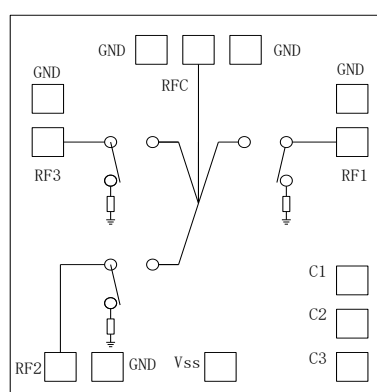
General Description

SAC3229 is a general-purpose broadband high isolation GaAs pHEMT SP3T switch in bare die. The switch offers over 40dB isolation and less than 2.0dB insertion loss over operation frequency. Its fast switching and compact size make this SP3T ideal for many critical applications. The switch operates using complementary positive control voltage logic lines of 0/+5V.

Typical Applications

- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

Functional Diagram



Electrical Performance (T_A=25°C, Voltage=0/+5V, 50Ω)

Parameter	Freq.	Min.	Typ.	Max.	Units
Insertion Loss	DC~12GHz	-	1.5	2.0	dB
Isolation	DC~12GHz	40	50	-	dB
VSWR RFC, RF1, RF2, RF3(ON)	DC~12GHz	-	1.2	-	:1
VSWR RF1, RF2, RF3(OFF)	DC~12GHz	-	1.1	-	:1
Input P _{1dB}	DC~12GHz	-	20	-	dBm
Switching Speed	DC~12GHz	-	30	-	ns

Absolute Maximum Ratings

Maximum Input Power(0.5~12GHz)	+30dBm	Operating Temperature	-55°C~+85°C
Control Voltage Range	+0~5.5V	Storage Temperature	-65°C~+150°C
ESD Sensitivity (HBM)	Class1A	Channel Temperature	150°C

Control Voltage

State	Bias Condition
Low	0~0.2V
High	3.3~5V

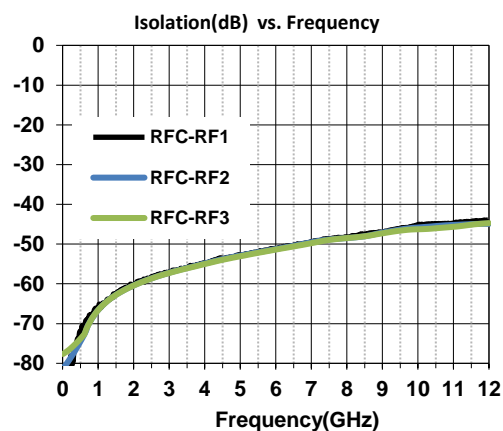
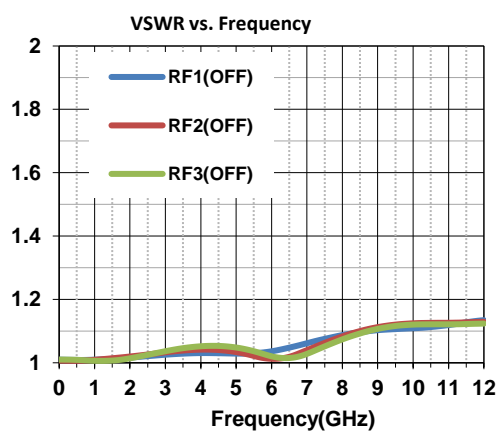
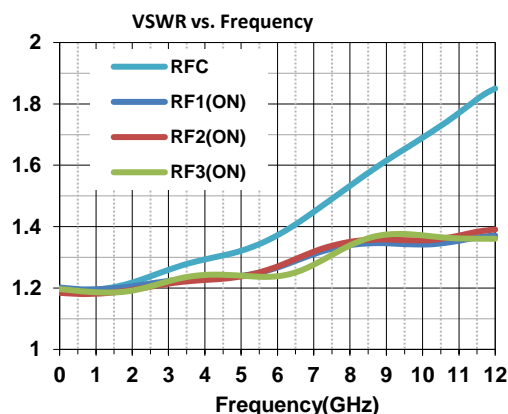
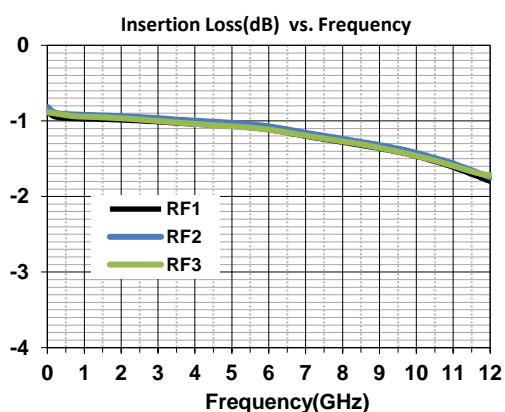
Bias Voltage & Current

V _{SS}	I _{SS}
-5V	4mA

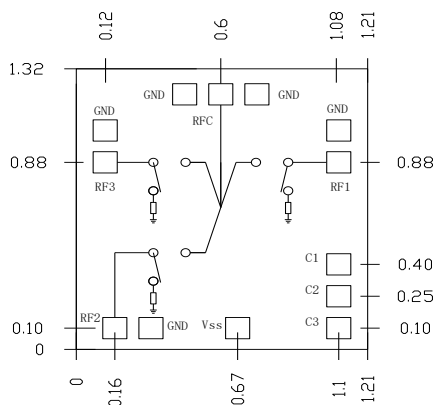
Truth Table

Control Input			Signal Path State		
C1	C2	C3	RFC-RF1	RFC-RF2	RFC-RF3
High	High	High	OFF	OFF	OFF
Low	High	High	ON	OFF	OFF
High	Low	High	OFF	ON	OFF
High	High	Low	OFF	OFF	ON

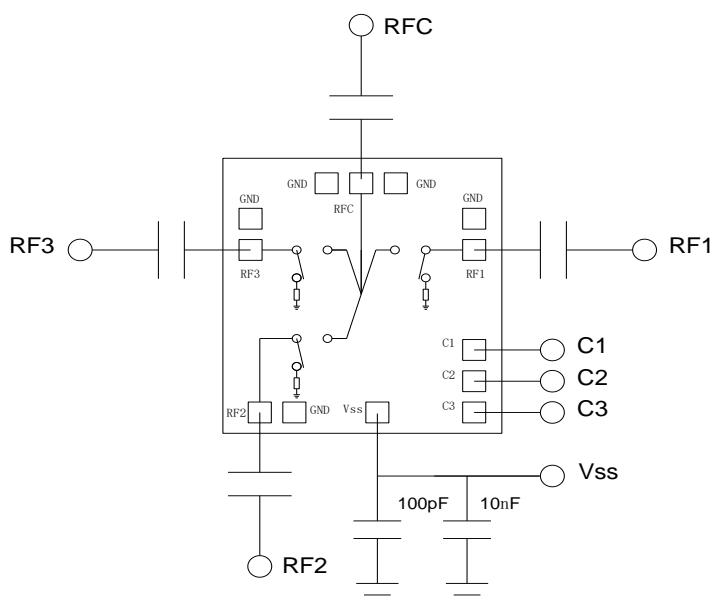
Typical Performance Curve



Die Outline (All dimensions in mm)



Assembly Diagram



Attention:

1. The device is sensitive to static electricity. Pay attention to anti-static during storage and use.
2. RF port requires additional DC isolation capacitor.