SAC3205AQP3

GaAs MMIC SPDT Switch
DC~20GHz

Rev 1.0

Features

- Frequency Range：DC ~ 20GHz
- Isolation： > 33dB@20GHz
- Insertion Loss：1.8dB@20GHz
- Control Voltage：0/+5V
- Nanosecond Switch
- Size：3mm×3mm×0.7mm

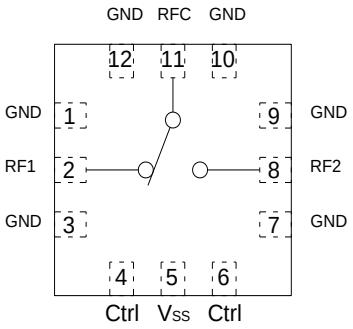
Typical Applications

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

General Description

SAC3205AQP3 is a general-purpose broadband high isolation reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 33 dB isolation and less than 1.8dB insertion loss over operation frequency. Its fast switching and compact size make this absorptive SPDT ideal for many critical applications. The switch operates using complementary positive control voltage logic lines of 0/+5V.

Functional Diagram



Electrical Performance

(T_A=25℃, Control Voltage=0/+5V, 50Ω)

Parameter	Fre.	Min.	Typ.	Max.	Units
Insertion Loss	DC~20GHz	—	1.5	—	dB
Isolation	DC~20GHz	33	40	—	dB
VSWR RFC	DC~20GHz	—	1.3	1.6	:1
VSWR RF1,RF2（ON）	DC~20GHz	—	1.3	1.6	:1
Input P_{-1}dB	DC~20GHz	—	20	—	dBm
Input IP_3	DC~20GHz	—	35	—	dBm
Switching Speed	DC~20GHz	—	30	—	ns

SuperApex, LLC
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Control Voltages

State	Bias Condition
Low	0~0.5V
High	3.0~5.5V

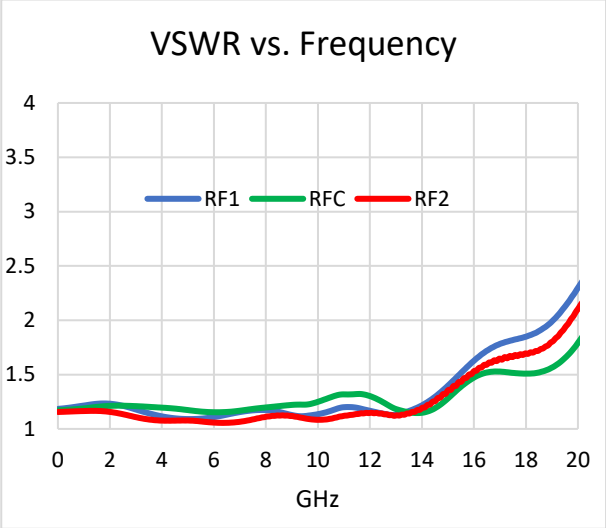
Truth Table

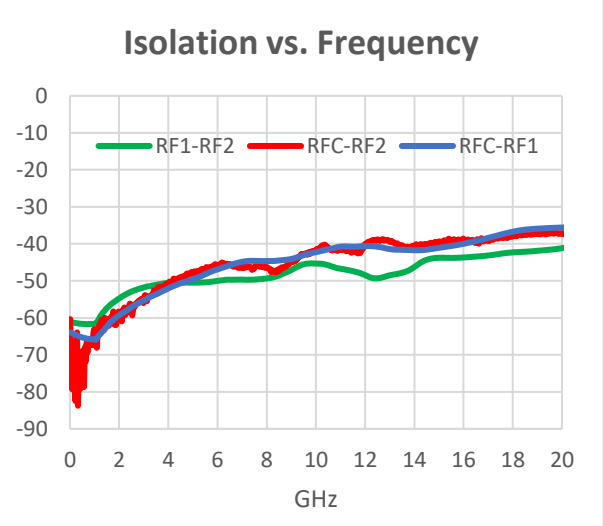
Control Input	Signal Path State	
Ctrl	RFC-RF1	RFC-RF2
Low	ON	OFF
High	OFF	ON

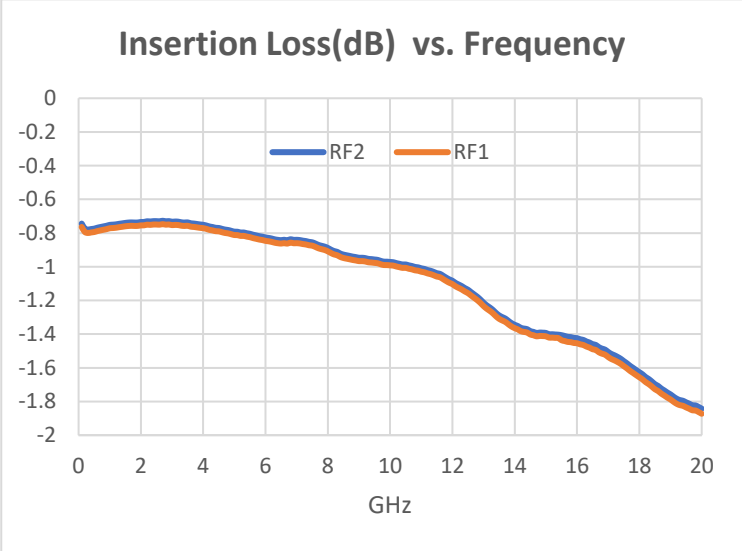
Bias Voltage & Current

V_{ss}	I_{ss}
-5V	1.5mA

Typical Performance Curve







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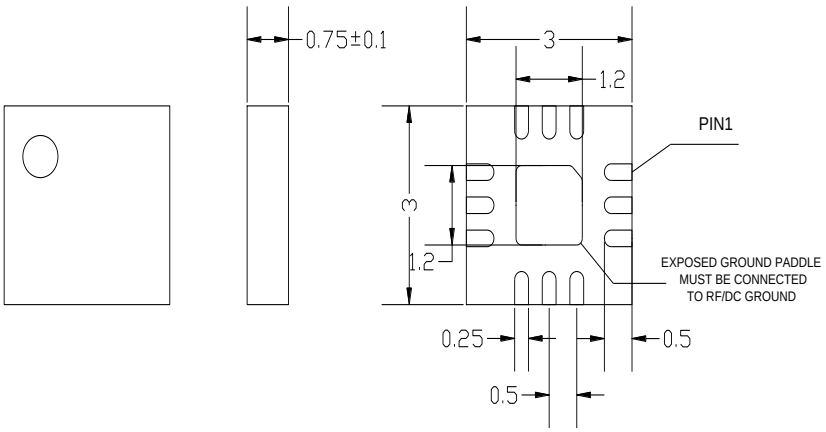
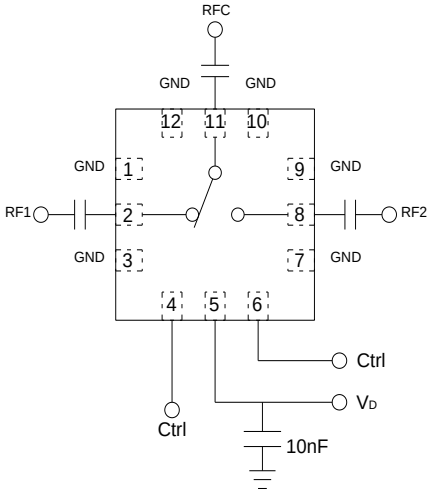
Outline
(All dimensions in mm)



Assembly Diagram



The two Ctrl ends are connected internally, and any Ctrl can be connected.

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+/-5degree environment before soldering.