

Features

- Frequency Range: DC~20GHz
- Isolation: >35dB@20GHz
- Insertion Loss: 1.8dB@20GHz
- Control Voltage: 0/+5V
- Nanosecond Switch
- Size: 3mm×3mm×0.7mm

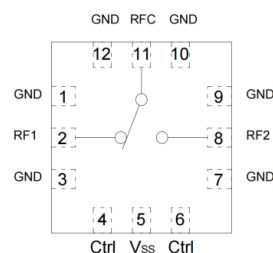
General Description

SAC3205BQP3 is a general-purpose broadband high isolation reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 35 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.

Typical Applications

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

Functional Diagram



Electrical Performance

$T_A=25^{\circ}\text{C}$, Control Voltage=0/+5V, 50Ω

Parameter	Fre.	Min.	Typ.	Max.	Units
Insertion Loss	DC~20GHz	—	1.5	—	dB
Isolation	DC~20GHz	35	40	—	dB
VSWR RFC	DC~20GHz	—	1.5	1.9	:1
VSWR RF1,RF2 (ON)	DC~20GHz	—	1.5	1.8	:1
Input P _{-1dB}	DC~20GHz	—	20	—	dBm
Input IP ₃	DC~20GHz	—	35	—	dBm
Switching Speed	DC~20GHz	—	30	—	ns

Control Voltages

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

Bias Voltage & Current

V _{SS}	I _{SS}
-5V	1.5mA

Truth Table

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

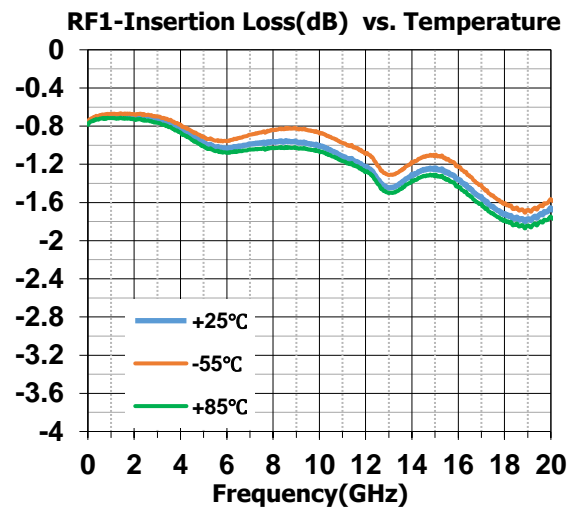
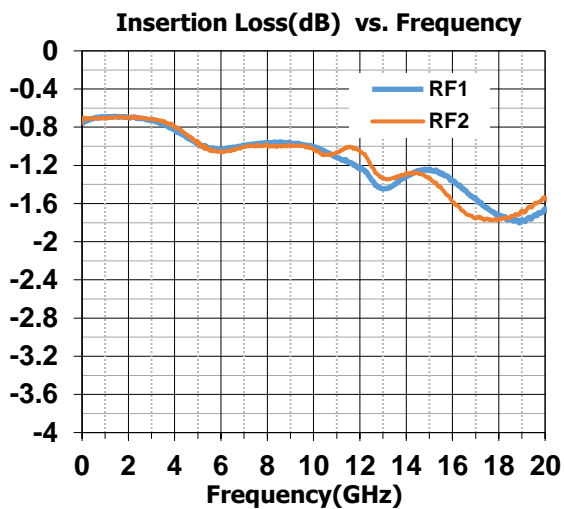
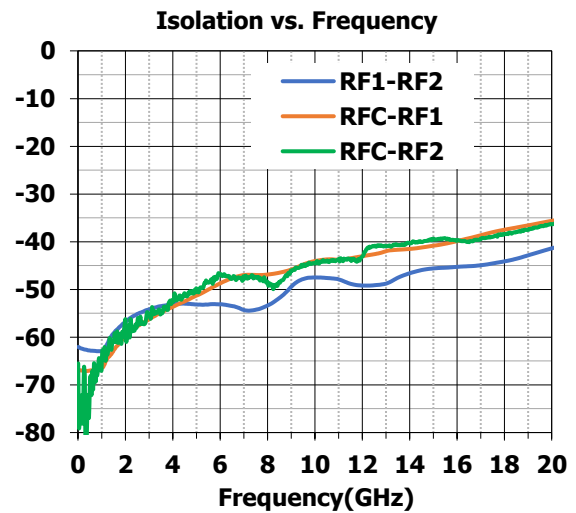
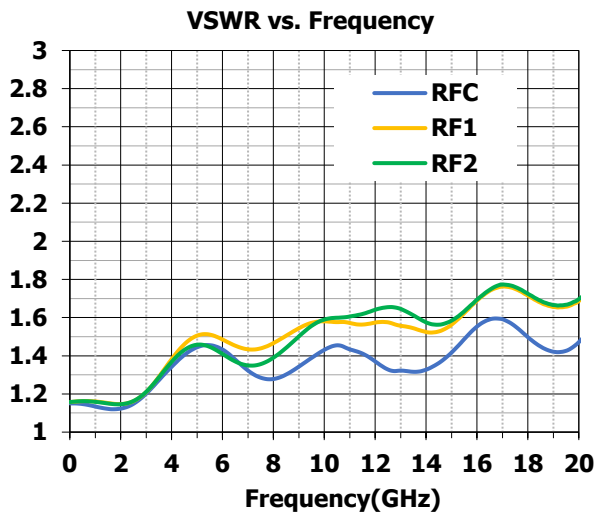
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GaAs MMIC SPDT Switch
DC~20GHz

Rev 1.0

Typical Performance Curve



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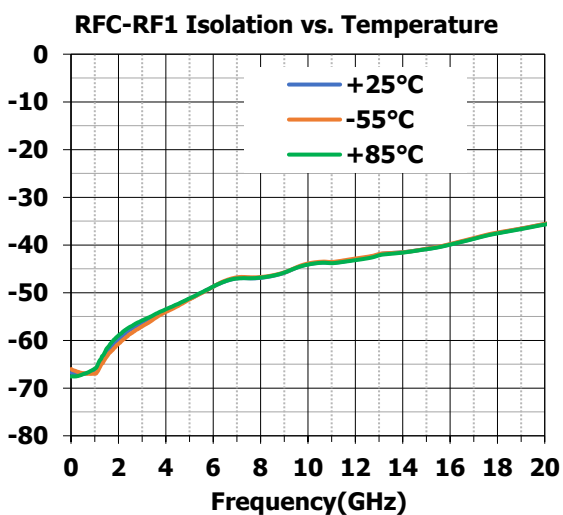
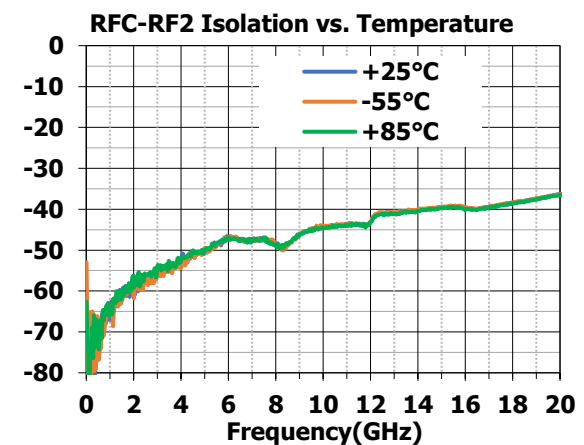
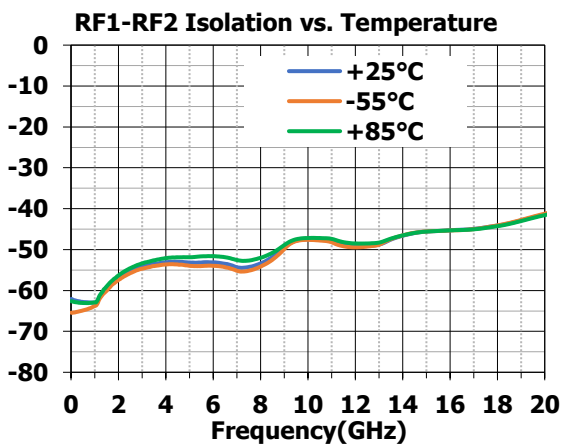
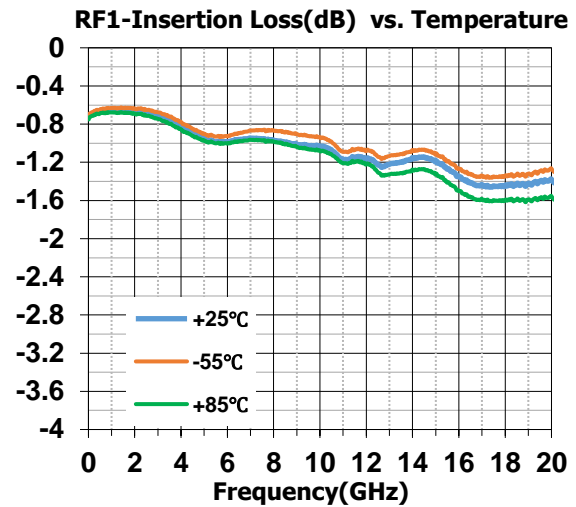
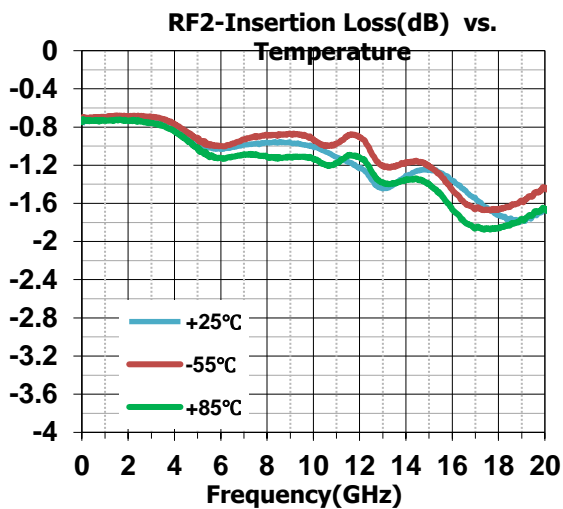
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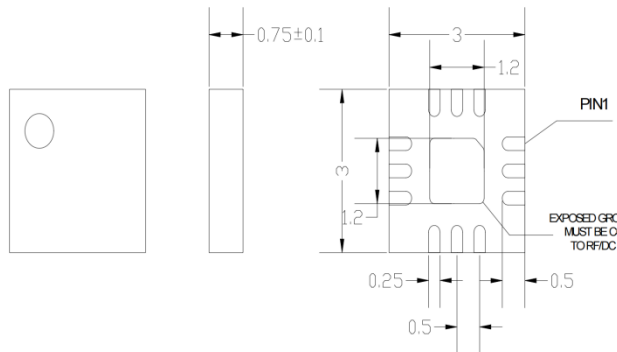
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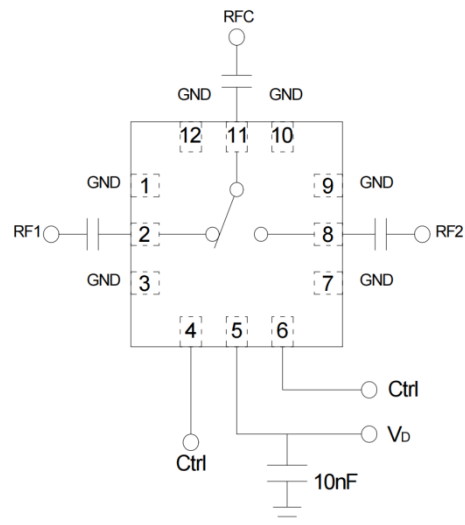
GaAs MMIC SPDT Switch
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Outline (All dimensions in mm)



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 $\leq 30^{\circ}\text{C}/60\% \text{RH}$, 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.