SAC3219A

GaAs MMIC SPDT Switch
1~4GHz

Rev 1.1

Features

- Frequency Range: 1~4GHz
- Isolation: 47dB
- Insertion Loss: 0.7dB
- Supply Voltage: +5V
- Control Voltage: 0/+5V
- Nanosecond switch
- Die Size: 1.73mm×1.21mm×0.1mm

Typical Applications

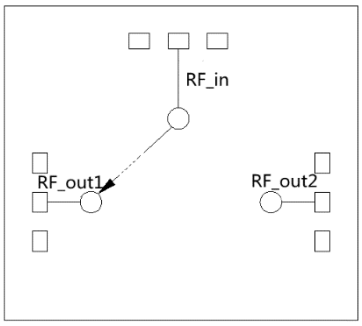
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

SAC3219A is a GaAs pHEMT SPDT MMIC chip with a frequency of 1~4.0GHz. The chip use GaAs 0.25 μm pHEMT process production, integrated control driver function, using +5V single power supply, CMOS level control.

The back of the chip is metallized, which is suitable for eutectic sintering or conductive adhesive bonding process.

Functional Diagram



Electrical Performance

T_A=+25℃, Control Voltage =0/+5V, VD=+5V, Z0=50Ω

Parameter	Freq.	Min.	Typ.	Max.	Units
Return loss(RF1,RF2,RFC)	1~4GHz	—	-16	—	dB
Insertion Loss	1~4GHz	—	0.7	—	dB
Isolation	1~4GHz	—	47	—	dB

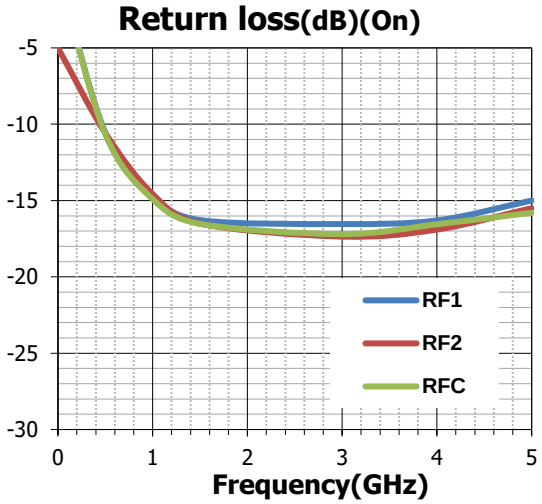
Absolute Maximum Ratings

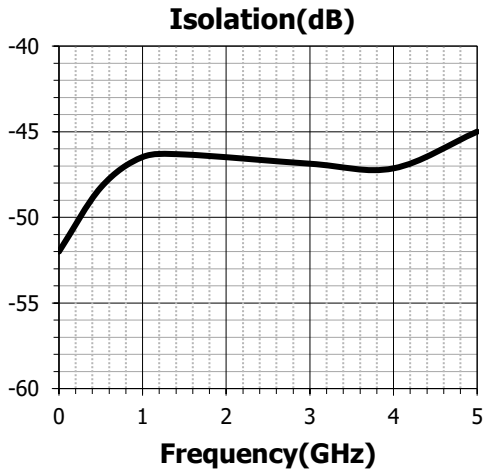
Input Power	+20dBm	Operating Temperature	-55℃~+85℃
Supply Voltage	+5.5V	Storage Temperature	-65℃~+150℃
Control Voltage Range	Low level：0~0.5V		High level:3.7~5.0V

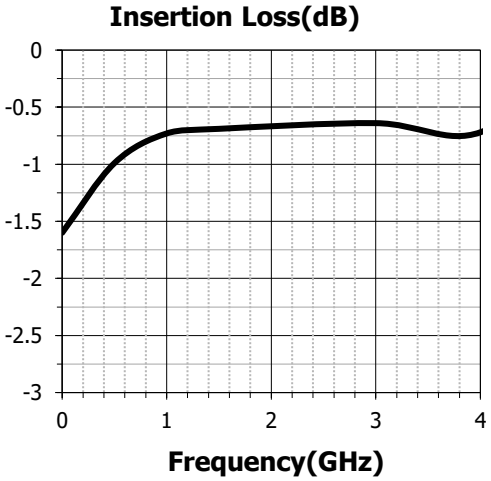
Control Input		Signal Path State		
V1	V2	RFC	RF1	RF2
0	0	Load	Off	Off
5	0		On	Off
0	5		Off	On
5	5	NA	NA	NA

SuperApex, LLC
1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

Typical Performance Curve

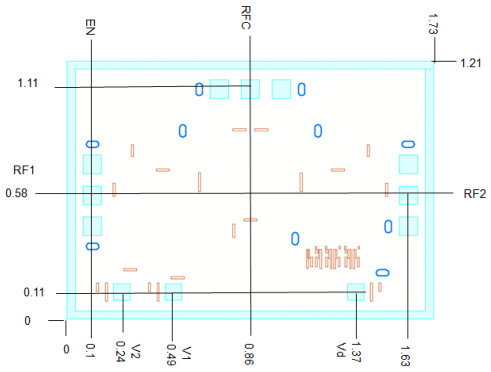




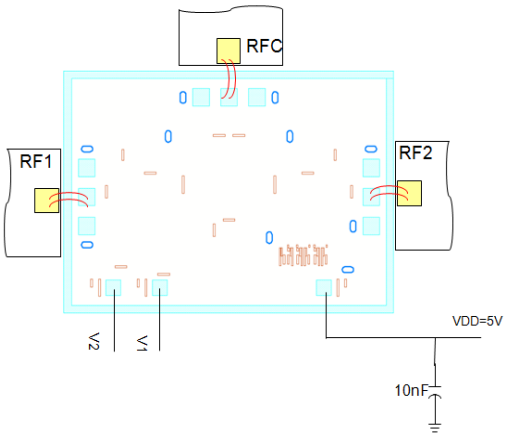


Die Outline

(All dimensions in mm)



Assembly Diagram



Attention:

1. The chip is stored in a dry and nitrogen environment and used in an ultra clean environment;
2. The GaAs material is brittle and cannot touch the chip surface. Be careful when using it;
3. The chip is sintered with conductive adhesive or alloy (the alloy temperature shall not exceed 300 ℃ and the time shall not exceed 30 seconds) to make it fully grounded;
4. The gap between the chip microwave port and the substrate shall not exceed 0.05mm Φ 25 μm Double gold wire bonding, recommended gold wire length is 250~400 μm；
5. The microwave terminal of the chip has a DC isolation capacitor;
6. The chip is sensitive to static electricity. Pay attention to anti-static during storage and use.