

SAC3220Q3



GaAs MMIC SP4T Switch
DC~20GHz

Rev 1.9

Features

- Frequency Range: DC~20GHz
- Isolation: 50dB(Typ.)
- Insertion Loss: 2.5dB(Typ.)
- Nanosecond Switch
- Size: 3mm×3mm×1.2mm
- RoHS Compliant

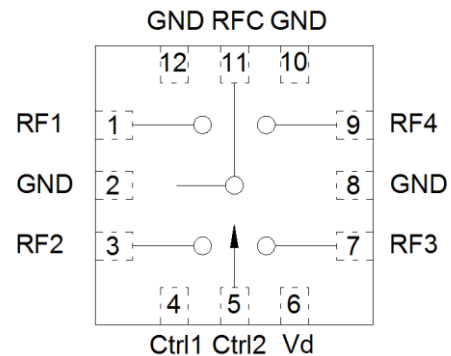
Typical Applications

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

General Description

SAC3220Q3 is a general purpose broadband high isolation GaAs pHEMT SP4T switch in leadless 3x3mm surface mount package. The switch offers 50dB(Typ.) isolation and 2.5dB(Typ.) insertion loss over operation frequency. It's fast switching and compact size make this SP4T ideal for many critical applications. The switch operates using complementary positive control voltage logic lines of 0/5V.

Functional Diagram



Electrical Performance ($T_A=+25^{\circ}\text{C}$, Voltage=0/+5V, $Z_0=50\Omega$)

Parameter	Min.	Typ.	Max.	Units
Insertion Loss	—	-2.5	-4.0	dB
Isolation	-30	-50	—	dB
Return Loss RFC	—	-16	—	dB
Return Loss RF1,2,3,4(ON)	—	-16	—	dB
Switching Speed	—	50	—	ns
Input IP3	—	30	—	dBm

Absolute Maximum Ratings

Input Power	+28dBm	Operating Temperature	-55~+85°C
Channel Temperature	150°C	Storage Temperature	-65~+150°C
Control Voltage Range	0~5V	ESD Sensitivity (HBM)	Class 1A



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

SAC3220Q3



GaAs MMIC SP4T Switch
DC~20GHz

Rev 1.9

Control Voltage

State	Bias Condition
Low	0~1V
High	4~5V

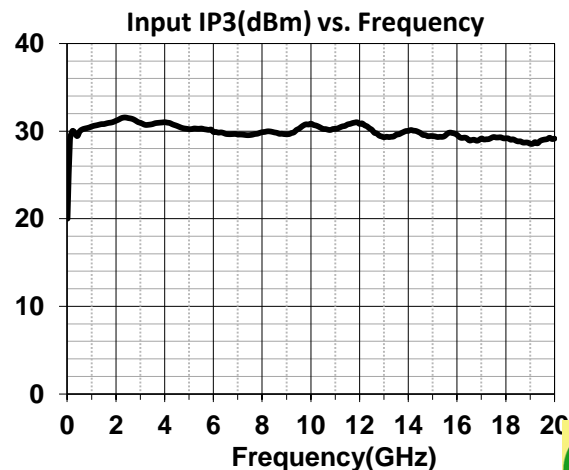
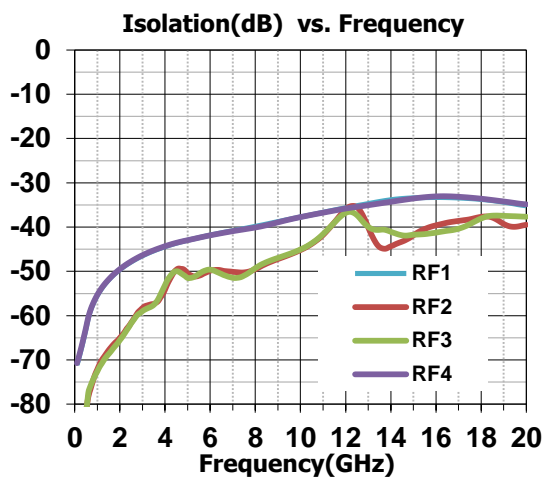
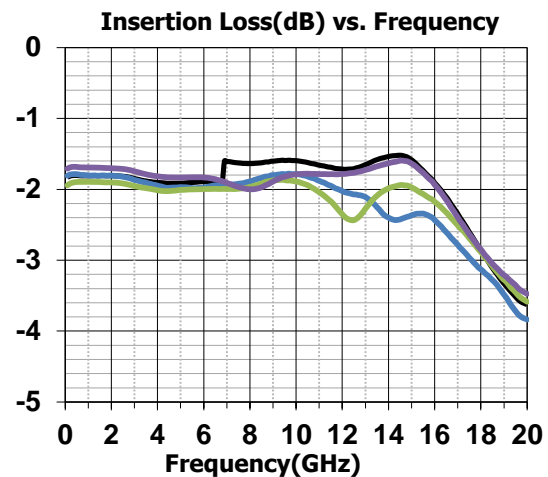
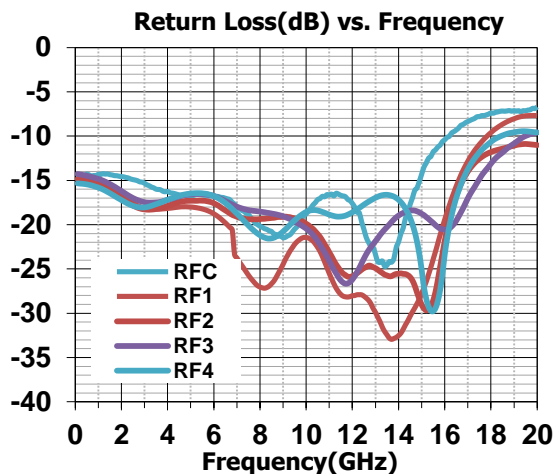
Bias Voltage & Current

V_D	I_D
-5V	8mA

Truth Table

Control Input		Signal Path State			
Ctrl1	Ctrl2	RFC-RF1	RFC-RF2	RFC-RF3	RFC-RF4
1	1	ON	OFF	OFF	OFF
0	1	OFF	ON	OFF	OFF
1	0	OFF	OFF	ON	OFF
0	0	OFF	OFF	OFF	ON

Typical Performance Curve



SuperApex, LLC

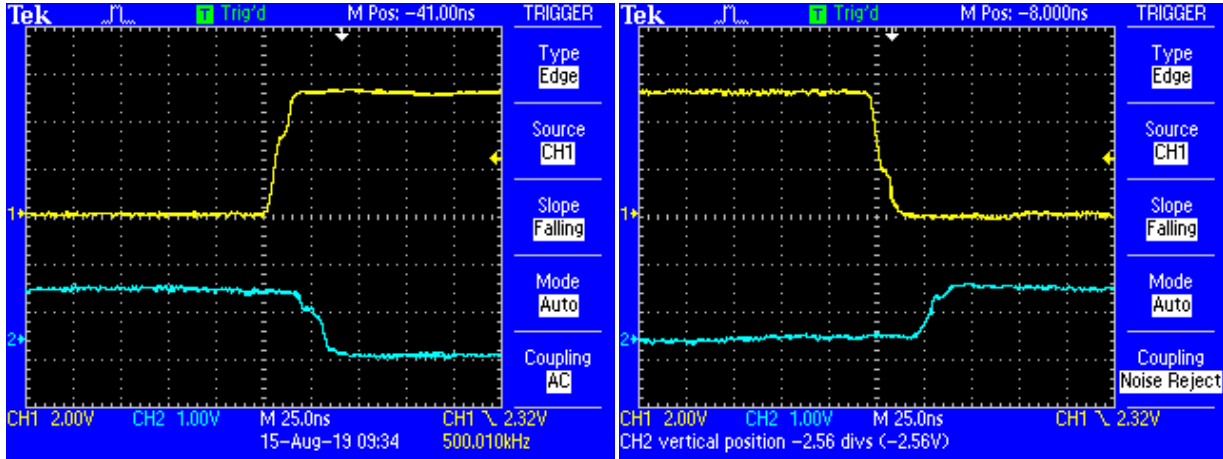
1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

SAC3220Q3

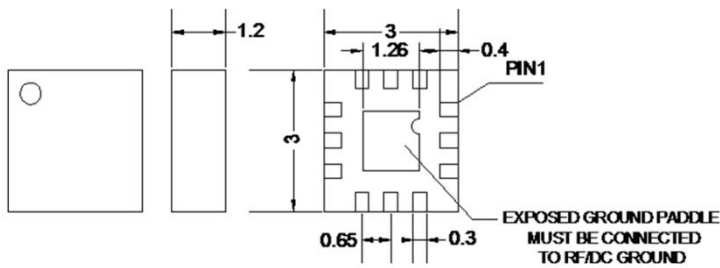
GaAs MMIC SP4T Switch
DC~20GHz

Rev 1.9

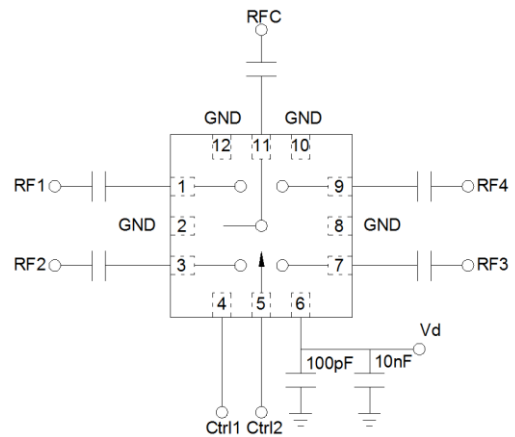
Switching Speed



Outline Drawing (All dimensions in mm)



Assembly Diagram



Attention:

1. The moisture resistant grade of products is 2A, the storage environment $\leq 30^{\circ}$ 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 ± 5 degree environment before soldering.

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