

XT3201



GaAs MMIC SPDT Switch
DC~20GHz

Rev 2.0

Features

- Frequency Range: DC~20GHz
- Isolation: >40dB@20GHz
- Insertion loss: 2.3dB@20GHz
- Non-reflective Switch
- Nanosecond switch
- Die Size: 1.4mm×1.25mm×0.1mm

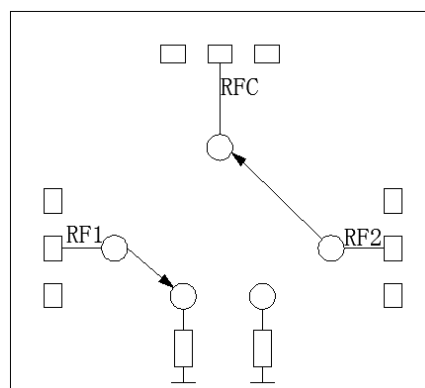
Typical Applications

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

General Description

XT3201 is a general purpose broadband high isolation non-reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 40dB isolation and less than 2.3 dB insertion loss over operation frequency. Fast switching and compact size make this absorptive SPDT ideal for a lot of critical applications. The switch operates using complementary negative control voltage logic lines of 0/-5V and requires no bias supply.

Functional Diagram



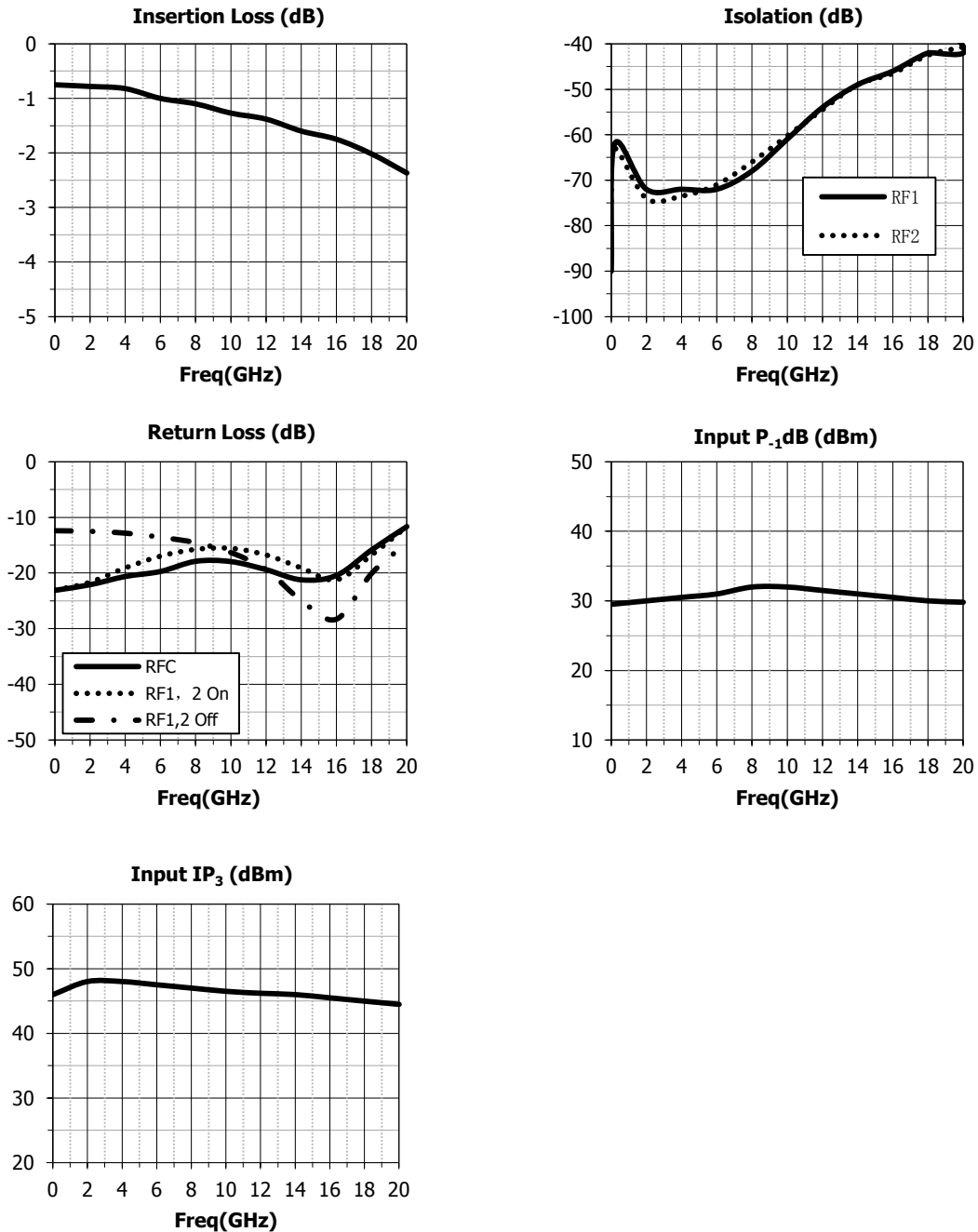
Electrical Performance ($T_A = +25^{\circ}\text{C}$, Control Voltage=0/-5V, $Z_0 = 50\Omega$)

Parameter	Freq.	Min.	Typ.	Max.	Units
Insertion loss	DC~20GHz	—	-2.3	—	dB
Isolation	DC~20GHz	—	-45	—	dB
Return Loss(RFC(ON))	DC~20GHz	—	-15	—	dB
Return Loss(RF1,RF2(OFF))	DC~20GHz	—	-15	—	dB
Input Power for P1dB Compression	DC~20GHz	—	30	—	dBm
Input IP_3	DC~20GHz	—	48	—	dBm
Switching Speed	DC~20GHz	—	15	—	ns

Absolute Maximum Ratings

RF Input Power	30dBm	Control Voltage Range	-3~0.2V
Channel Temperature	150°C	Storage Temperature	-65°C~+150°C
Operating Temperature	-55°C~+85°C	ESD Sensitivity (HBM)	Class 1A

Typical Performance Curve



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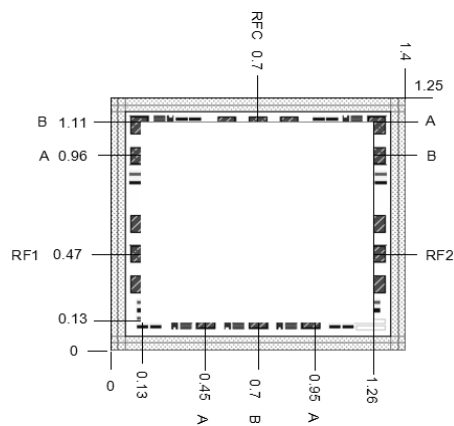
Control Voltages

State	Bias Condition
Low	0~0.2V
High	-3~-7V

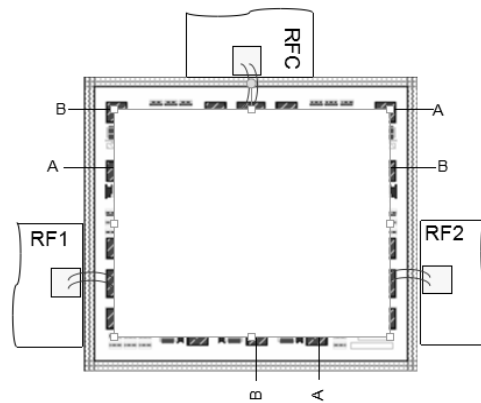
Truth Table

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

Die Outline (all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.