

Features

- Frequency Range: DC~12GHz
- Isolation: >45dB@12GHz
- Insertion Loss: 1.1dB@12GHz
- Control Voltage: 0/+5V
- Nanosecond switch
- Die Size: 1.4mm×1.25mm×0.1mm

Typical Applications

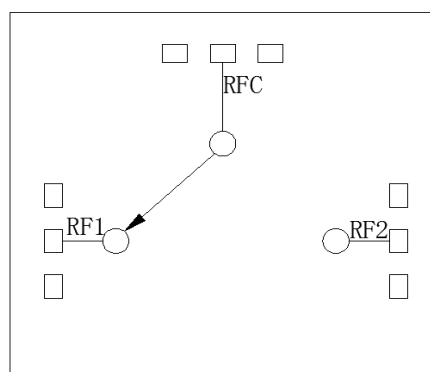
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

XT3203 is a general purpose broadband high isolation reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 45 dB isolation and less than 1.2 dB insertion loss over operation frequency. Its fast switching and compact size make this absorptive SPDT ideal for many applications.

The switch operates using complementary positive control voltage logic lines of 0/+5V.

Functional Diagram



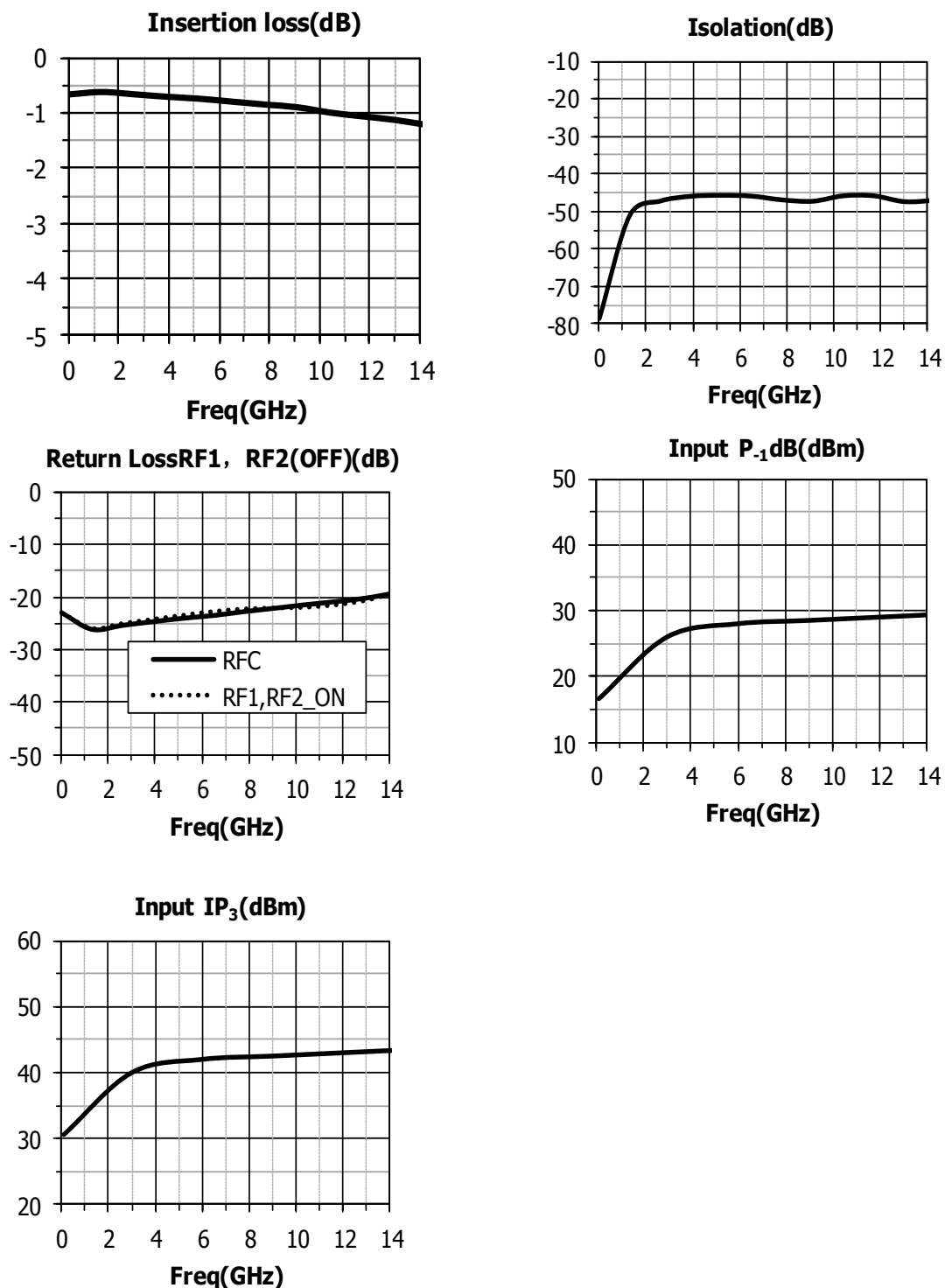
Electrical Performance ($T_A=+25^{\circ}\text{C}$, $V_D=-5\text{V}$, Control Voltage=0/+5V, $Z_0=50\Omega$)

Parameter	Freq.	Min.	Typ.	Max.	Units
Insertion Loss	DC~12GHz	—	-1.2	—	dB
Isolation	DC~12GHz	—	-48	—	dB
Return Loss(RFC)	DC~12GHz	—	-20	—	dB
Return Loss(RF1,RF2(ON))	DC~12GHz	—	-20	—	dB
Input Power for 1dB Compression	DC~12GHz	—	25	—	dBm
Input IP_3	DC~12GHz	—	42	—	dBm
Switching Speed	DC~12GHz	—	18	—	ns

Absolute Maximum Ratings

Input power	30dBm	Control Voltage Range	+0~5.5V
Channel Temperature	150°C	Storage Temperature	-65°C~+150°C
Operating Temperature	-55°C~+85°C	ESD Sensitivity (HBM)	Class 1A

Typical Performance Curve



Control Voltages

State	Bias Condition
Low	0~0.5V
High	4.5~5.5V

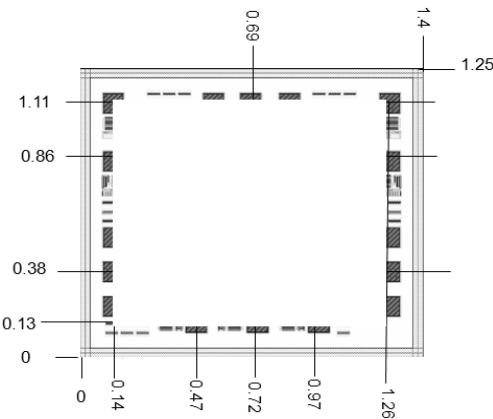
Truth Table

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

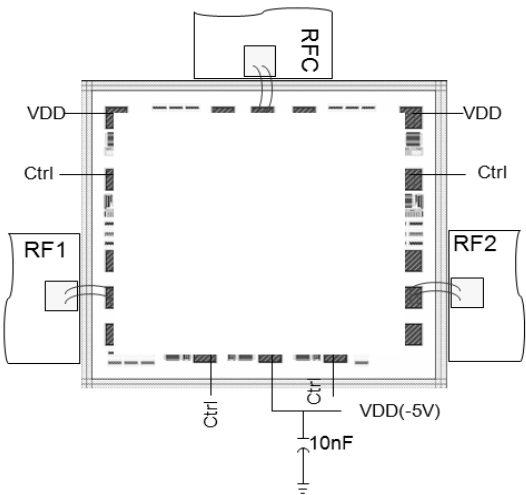
Bias Voltage & Current

V _D	I _D
-5V	1mA

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.