

Features

- Frequency Range: DC~4GHz
- Isolation: >55dB@4GHz
- Insertion Loss: 1.5dB@4GHz
- Non-reflective Switch
- Nanosecond switch
- Die Size: 1.4mm×1.25mm×0.1mm

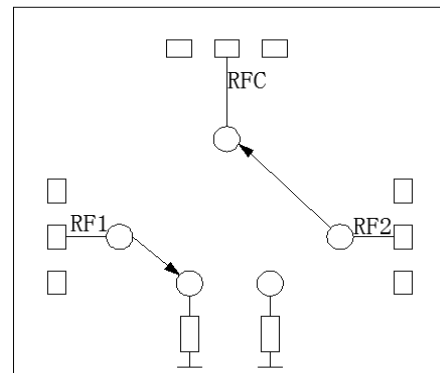
Typical Applications

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

General Description

XT3204 is a general purpose broadband high isolation non-reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 55 dB isolation and less than 1.5dB 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.

Functional Diagram



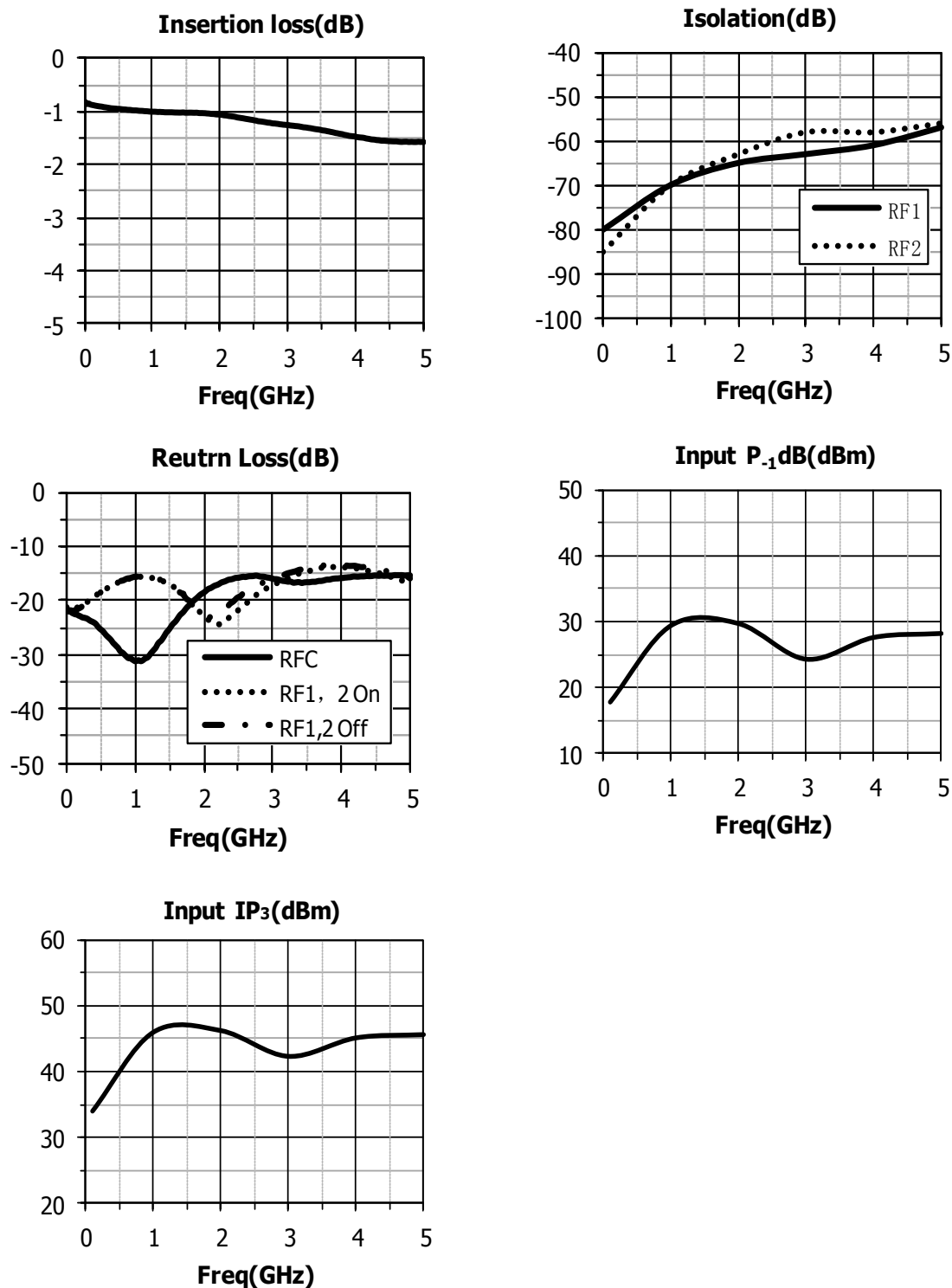
Electrical Performance ($T_A=+25^{\circ}\text{C}$, $V_D=+5\text{V}$, Control Voltage=0/+5V, $Z_0=50\Omega$)

Parameter	Freq.	Min.	Typ.	Max.	Units
Insertion Loss	DC~4GHz	—	-1.2	—	dB
Isolation	DC~4GHz	—	-70	—	dB
Return Loss RFC(ON)	DC~4GHz	—	-15	—	dB
Return Loss RF1,RF2 (OFF)	DC~4GHz	—	-15	—	dB
Input $P_{1\text{dB}}$	DC~4GHz	—	30	—	dBm
Input IP_3	DC~4GHz	—	45	—	dBm
Switching Speed	DC~4GHz	—	70	—	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 Voltage

State	Bias Condition
Low	0~0.2V
High	4~5.5V

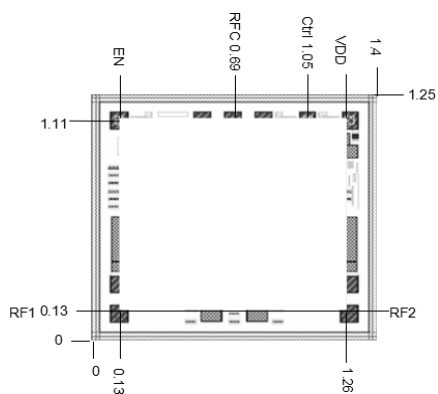
Bias Voltage&Current

V _D	I _D
5V	1.5mA

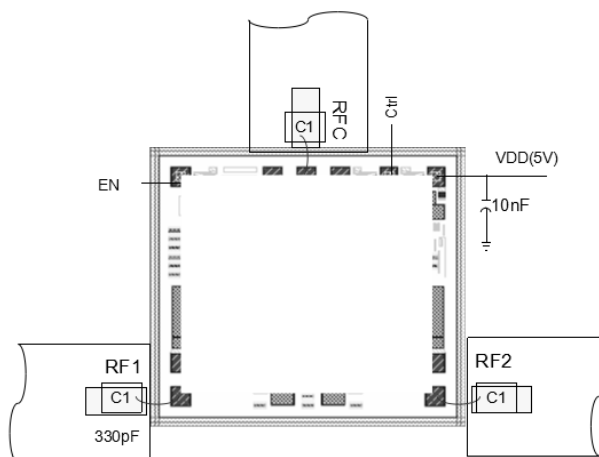
Truth Table

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

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.