XT3207

GaAs MMIC SPST Switch
DC～12GHz

Rev 2.0

Features

- Frequency Range：DC～12GHz
- Isolation：＞37dB@12GHz
- Insertion Loss：0.9dB@12GHz
- Non-reflective Switch
- Nanosecond switch
- Die Size：1.24mm×1.16mm×0.1mm

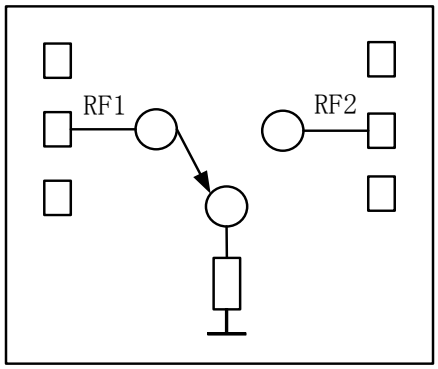
Typical Applications

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

General Description

XT3207 is a general purpose broadband high isolation non-reflective GaAs pHEMT SPST switch in bare die. The switch offers over 37 dB isolation and less than 0.9dB insertion loss over operation frequency. Its fast switching and compact size make this absorptive SPST ideal for many critical applications. The switch operates using complementary negative control voltage logic lines of 0/-5V.

Functional Diagram



Electrical Performance
(T_A=+25℃ , Control Voltage =0/-5V,Z_O=50Ω)

Parameter	Fre.	Min.	Typ.	Max.	Units
Insertion Loss	DC-12GHz	—	-0.9	—	dB
Isolation	DC-12GHz	—	-40	—	dB
Return Loss RF1,RF2（ON）	DC-12GHz	—	-20	—	dB
Return Loss RF1（OFF）	DC-12GHz	—	-15	—	dB
Input P_{-1}dB	DC-12GHz	—	27	—	dBm
Switching Speed	DC-12GHz	—	5	—	ns

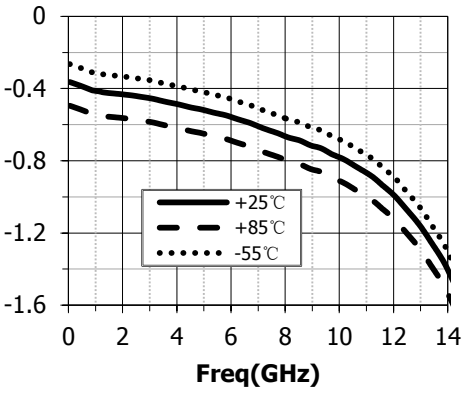
Absolute Maximum Ratings

Input power	27dBm	Control Voltage Range	0~7V
Channel Temperature	150℃	Storage Temperature	-65℃~ +150℃
Operating Temperature	-55℃~+85℃	ESD Sensitivity (HBM)	Class 1A

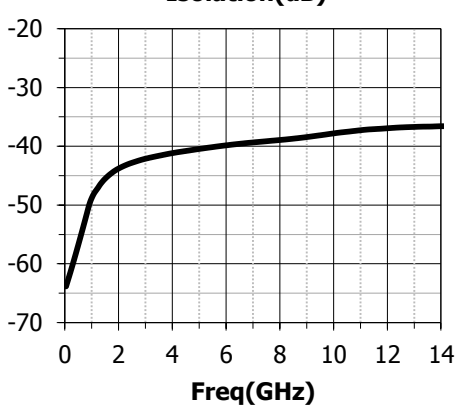
Chengdu Fairchild Technology Co., Ltd.
Add.: 4F, Block B, No.98 Tiancai road, Hi-Tech(West)Zone, Chengdu.
Cel.: 18381641733 Tel.: +86-28-8792 9948, +86-28-8793 2498 Fax: 028-8793 3348
E-mail: sales@fairchild-tech.com. Web.: www.fairchild-tech.com
WeChat: R18381641733.

Typical Performance Curve

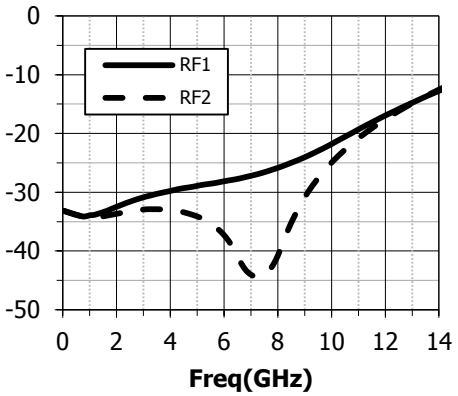
Insertion loss(dB)



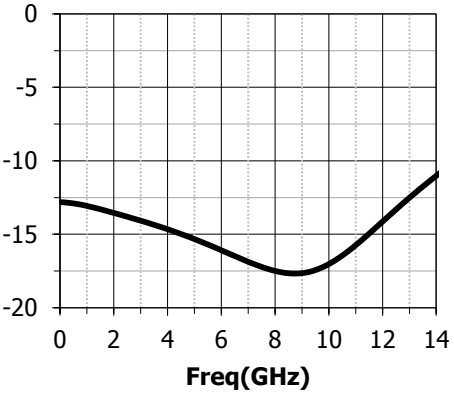
Isolation(dB)



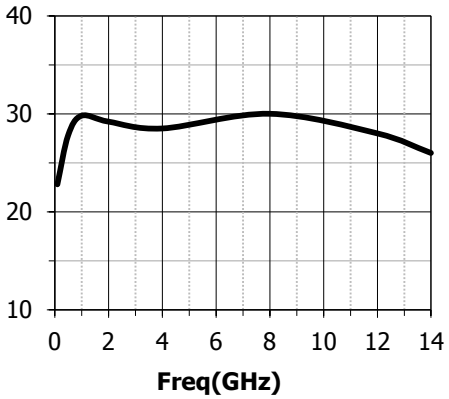
Return Loss(ON)(dB)



Return Loss(OFF)(dB)



Input P_{-1}dB(dBm)



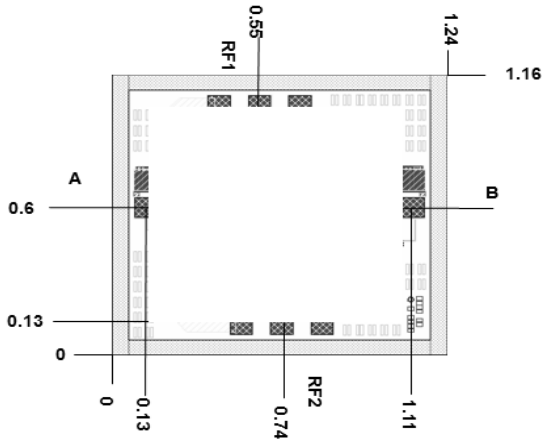
Control Voltages

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

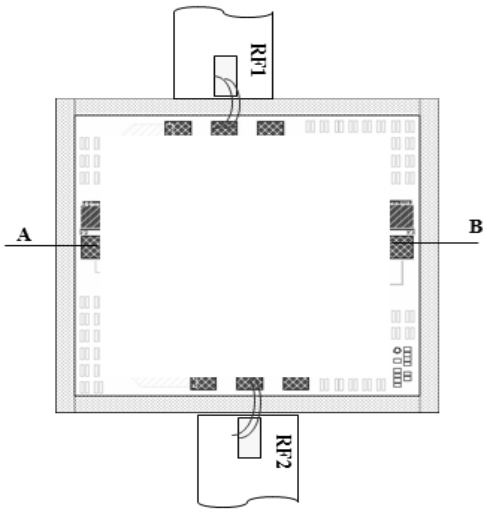
Truth Table

Control Input		Switch State
A	B	RF1-RF2
Low	High	ON
High	Low	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.

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