

Features

- Frequency Range: DC~20GHz
- Isolation: >40dB@20GHz
- Insertion Loss: 1.7dB@20GHz
- Control Voltage: 0/+5V
- Nanosecond switch
- Die Size: 1.4mm×1.25mm×0.1mm

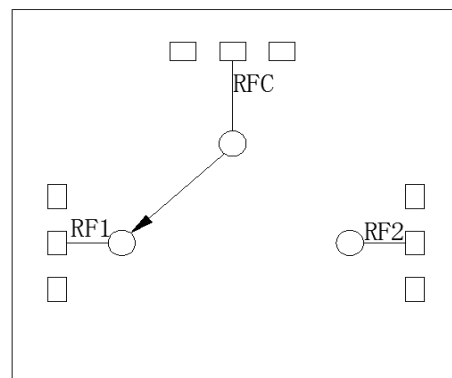
Typical Applications

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

General Description

XT3205 is a general purpose broadband high isolation reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 40 dB isolation and less than 1.7dB 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

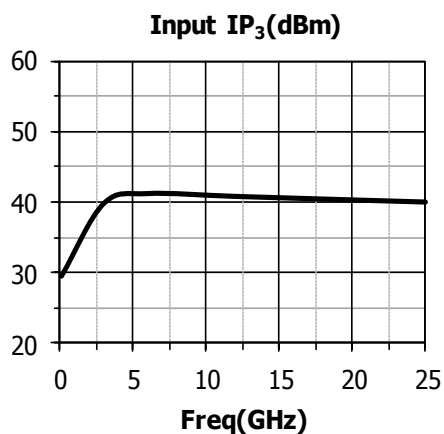
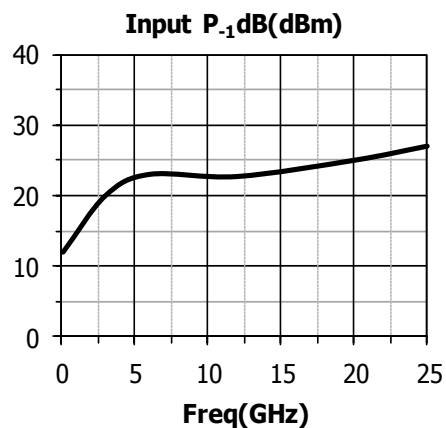
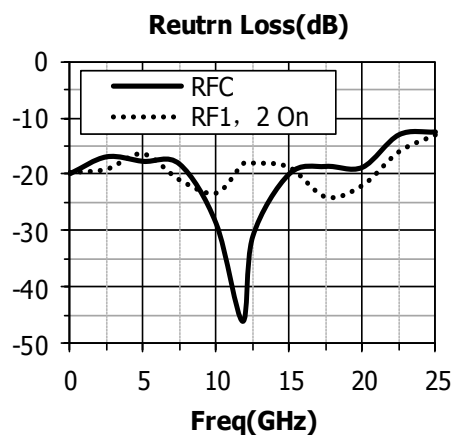
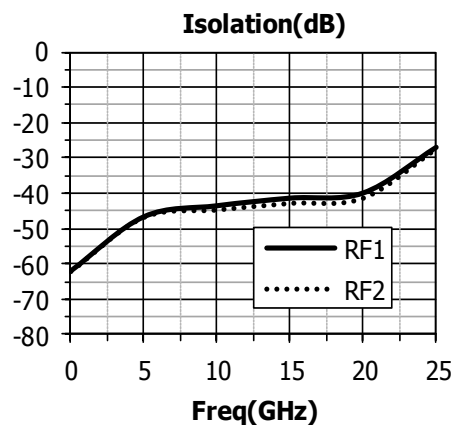
($T_A = +25^{\circ}\text{C}$, $V_D = -5\text{V}$, Control Voltage=0/+5V, $Z_0 = 50\Omega$)

Parameter	Fre.	Min.	Typ.	Max.	Units
Insertion Loss	DC~20GHz	—	-1.5	—	dB
Isolation	DC~20GHz	—	-40	—	dB
Return Loss RFC	DC~20GHz	—	-18	—	dB
Return Loss RF1,RF2 (ON)	DC~20GHz	—	-18	—	dB
Input $P_{-1\text{dB}}$	DC~20GHz	—	20	—	dBm
Input IP_3	DC~20GHz	—	35	—	dBm
Switching Speed	DC~20GHz	—	17	—	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



XT3205



GaAs MMIC SPDT Switch
DC~20GHz

Rev 2.0

Control Voltages

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

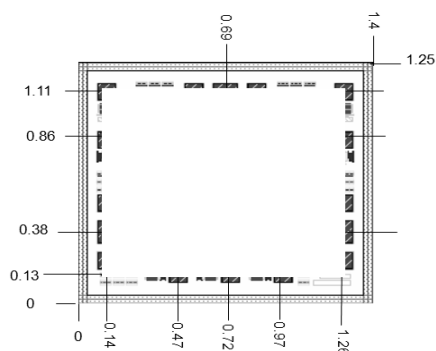
Truth Table

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

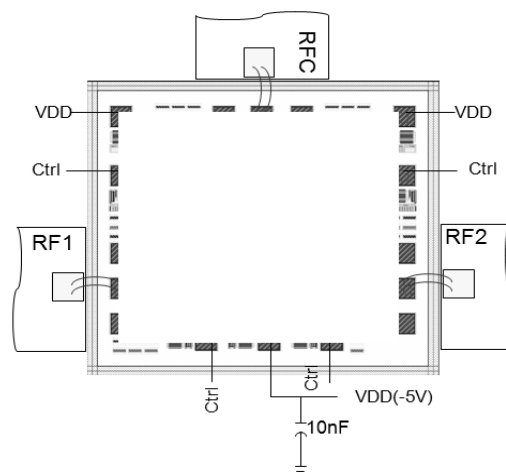
Bias Voltage & Current

V _D	I _D
-5V	1.5mA

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.