

## Features

- Frequency Range: DC~20GHz
- Isolation: >40dB@20GHz
- Insertion Loss: 2.4dB@20GHz
- Non-reflective Switch
- Nanosecond switch
- Size: 3mm×3mm×1.2mm

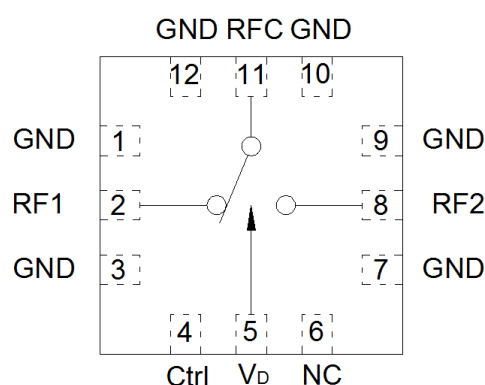
## Typical Applications

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

## General Description

XT3206Q3 is a general purpose broadband high isolation non-reflective GaAs pHEMT SPDT switch in bare die. The switch offers over 40 dB isolation and less than 2.4dB 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

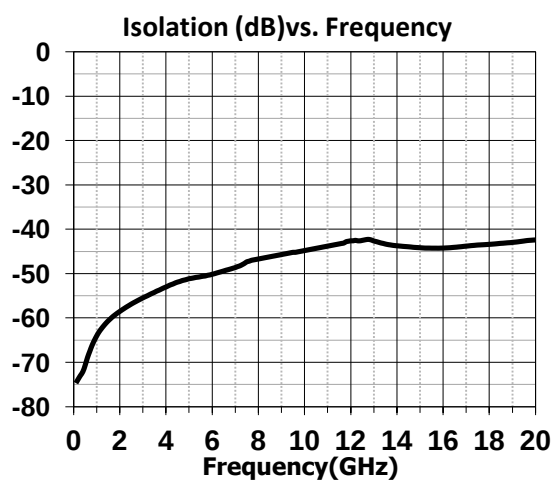
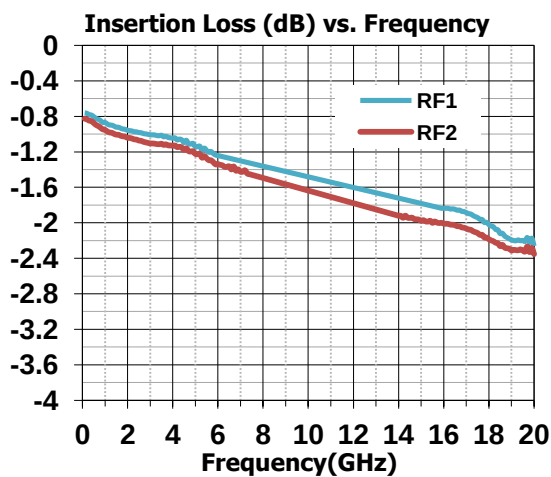
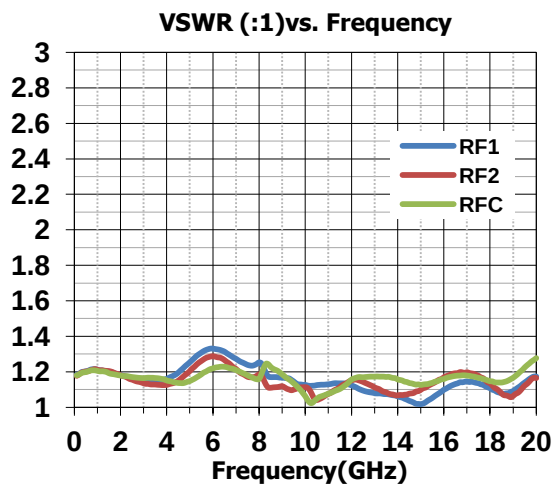
( T<sub>A</sub>=+25°C , Control Voltage =0/+5V,Z<sub>0</sub>=50Ω )

| Parameter               | Fre.     | Min. | Typ. | Max. | Units |
|-------------------------|----------|------|------|------|-------|
| Insertion Loss          | DC~20GHz | —    | -2.3 | —    | dB    |
| Isolation               | DC~20GHz | —    | -45  | —    | dB    |
| VSWR RFC                | DC~20GHz | —    | 1.2  | 1.5  | —     |
| VSWR RF1,RF2            | DC~20GHz | —    | 1.2  | 1.5  | —     |
| Input P <sub>1</sub> dB | DC~20GHz | —    | 30   | —    | dBm   |
| Input IP <sub>3</sub>   | DC~20GHz | —    | 48   | —    | dBm   |
| Switching Speed         | DC~20GHz | —    | 15   | —    | ns    |

## Absolute Maximum Ratings

|                       |             |                       |              |
|-----------------------|-------------|-----------------------|--------------|
| Input power           | 30dBm       | Control Voltage Range | 0~7V         |
| 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   | 0~0.2V         |
| High  | 3~7V           |

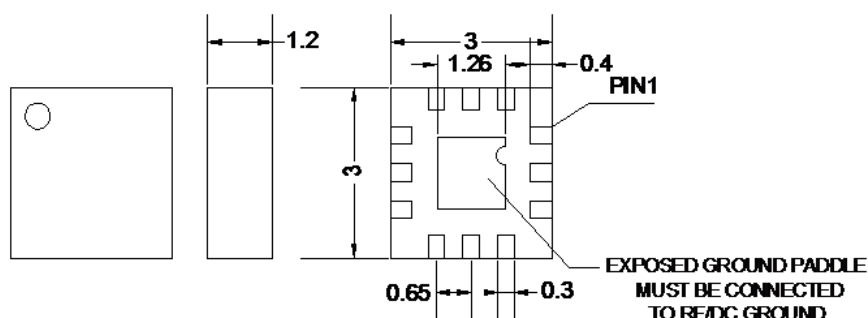
## Truth Table

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

## Bias Voltage & Current

| V <sub>D</sub> | I <sub>D</sub> |
|----------------|----------------|
| -5V            | 1mA            |

## Outline Drawing (all dimensions in mm)



## Attention:

1. The moisture resistant grade of products is 2A, the storage environment  $\leq 30^{\circ}\text{C}/60\%\text{RH}$ , The surrounding workshop Life is 4 weeks.
2. After un-packing, It is necessary to bake the parts for 6 hours in  $125\pm 5$  degree environment before soldering.