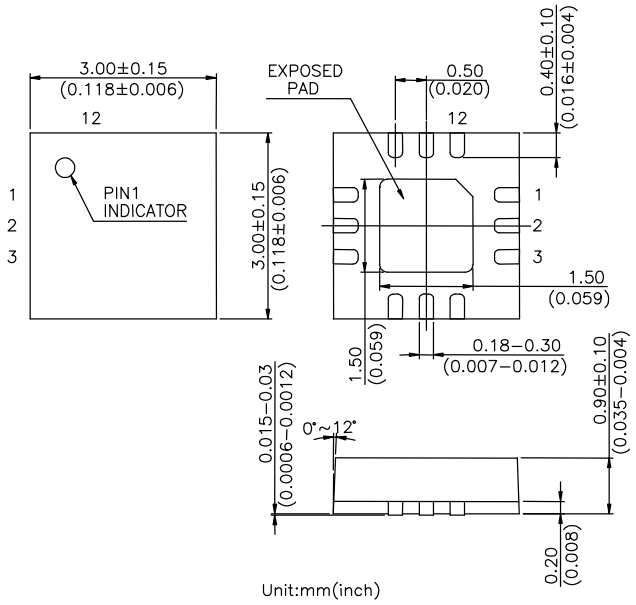
## Features

- **Low Insertion Loss :** 0.8 dB @ 2.50 GHz
  1.0 dB @ 5.85 GHz
- **Isolation:** 29.5 dB @ 2.50 GHz
  20.5 dB @ 5.85 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Package**
- **PHEMT process**

## QFN12L (3 x 3 mm)




## Description

The HWS383 is a GaAs PHEMT MMIC DPDT switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic package. The HWS383 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in IEEE 802.11a/b/g WLAN systems for combination of transmit/receive and antenna diversity functions.

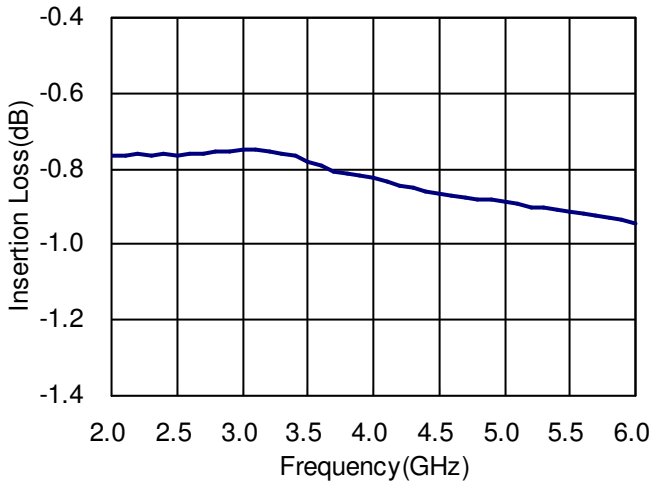
## Electrical Specifications at 25℃ with 0, +3V Control Voltages

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Insertion Loss | 0.10-6.00 GHz<br>2.40-2.50 GHz<br>5.15-5.85 GHz | | 1.0<br>0.8<br>1.0 | <br>1.0<br>1.3 | dB<br>dB<br>dB |
| Isolation | 0.10-6.00 GHz<br>2.40-2.50 GHz<br>5.15-5.85 GHz | <br>27.0<br>18.0 | 20.0<br>29.5<br>20.5 | | dB<br>dB<br>dB |
| Return Loss | 0.10-6.00 GHz<br>2.40-2.50 GHz<br>5.15-5.85 GHz | | 15<br>20<br>18 | | dB<br>dB<br>dB |
| Input Power for One dB Compression | 2.00-6.00 GHz | | 33 | | dBm |
| Input Third Order Intermodulation Intercept Point | 20 dBm Per Tone @ 2.50 GHz<br>22 dBm Per Tone @ 5.85 GHz | | 52<br>52 | | dBm<br>dBm |
| Control Current | | | 5 | 200 | uA |

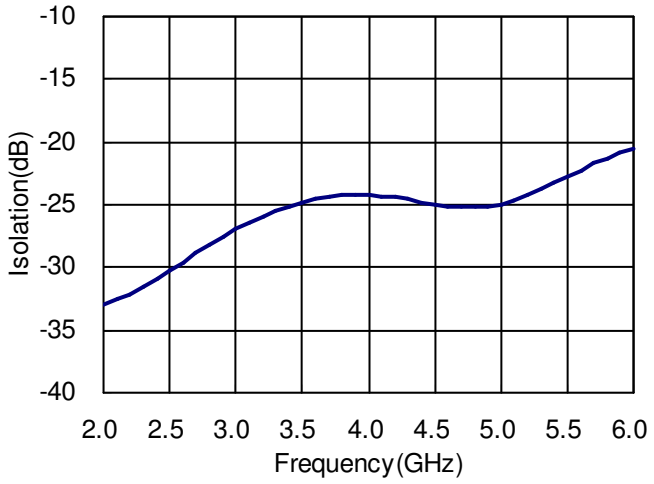
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

## Typical Performance Data with 8pF Capacitors @ +25℃

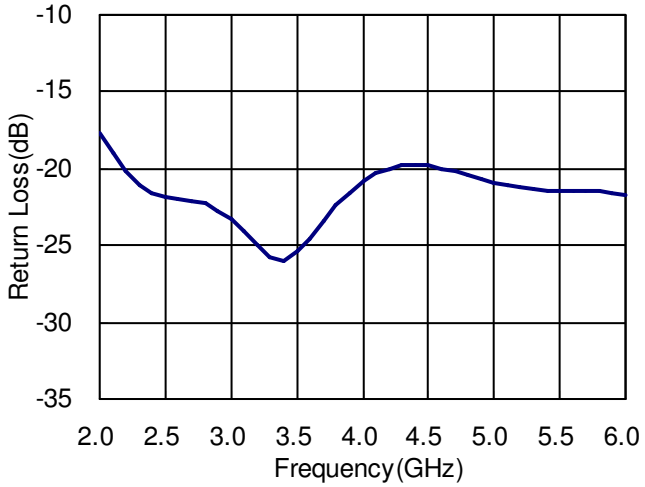
### Insertion Loss vs Frequency




### Isolation vs Frequency



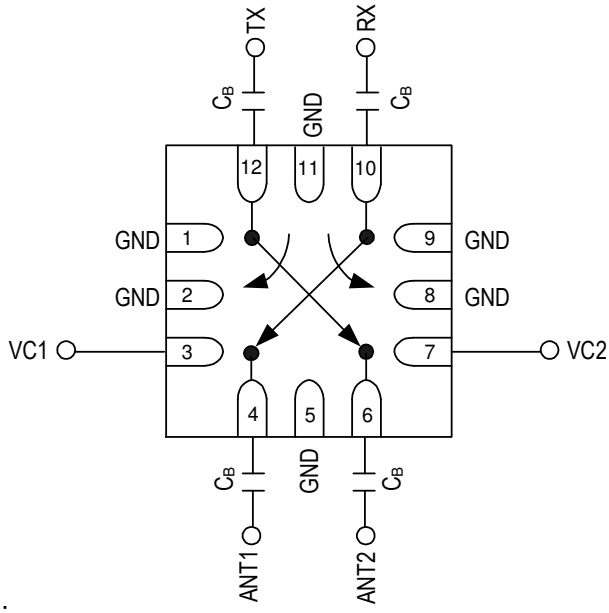

### Return Loss vs Frequency




## Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|---|
| RF Input Power | +34 dBm @ +3V |
| Control Voltage | +6V |
| Operating Temperature | -40℃ to +85℃ |
| Storage Temperature | -65℃ to +150℃ |

## Pin Out (Top View)




Note:
1. DC blocking capacitors $C_B$=8pF are required on all RF ports.
2. Exposed pad in the bottom must be connected to ground by via holes.
3. TX and RX ports can be used interchangeably.

## Logic Table for Switch On-Path

| VC1 | VC2 | ANT1 | ANT2 |
|---|---|---|---|
| 0 | 1 | TX | RX |
| 1 | 0 | RX | TX |

'1' = +3V to +5V
'0' = 0V to +0.2V