

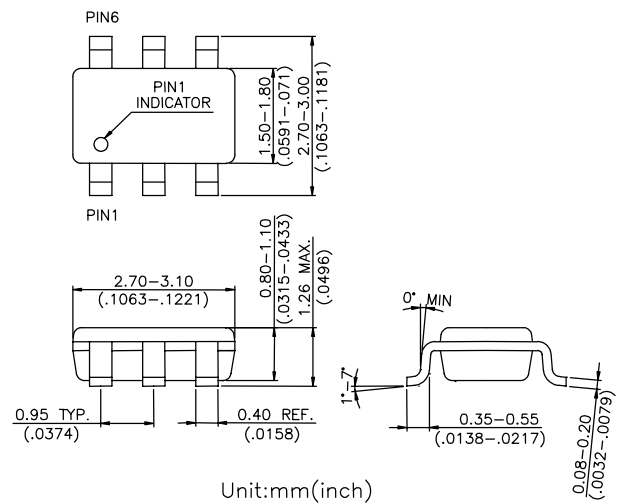
## Features

- **Low Insertion Loss:** 0.45dB @ 2GHz
- **P1dB:** +30dBm Typical @ +3V
- **IP3:** 45dBm
- **Low DC Power Consumption**
- **Low Cost SOT-26 Plastic Package**

## Description

The HWS311 is a GaAs MMIC SPDT switch in a low cost SOT-26 plastic package. The HWS311 features low insertion loss with very low DC power consumption. This general purpose switch can be used in analog and digital wireless communication systems.

## SOT-26



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

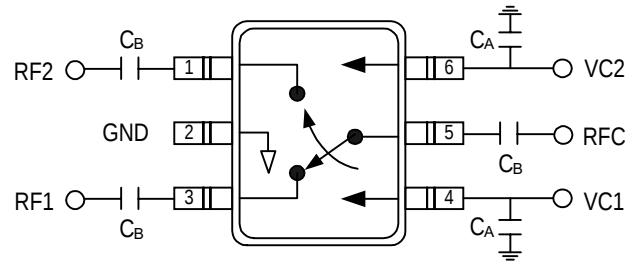
| Parameter                                       | Test Conditions                        | Min. | Typ.  | Max. | Unit |
|-------------------------------------------------|----------------------------------------|------|-------|------|------|
| Insertion Loss                                  | DC-1.0GHz                              |      | 0.40  | 0.60 | dB   |
|                                                 | DC-2.0GHz                              |      | 0.45  | 0.65 | dB   |
|                                                 | DC-2.5GHz                              |      | 0.50  | 0.70 | dB   |
| Isolation                                       | DC-2.0GHz                              | 23   | 26    |      | dB   |
|                                                 | DC-2.5GHz                              | 21   | 23    |      | dB   |
| VSWR                                            | DC-2.5GHz                              |      | 1.2:1 |      |      |
| Input Power for One dB Compression              | 0.5-2.5GHz                             |      |       |      |      |
|                                                 | 0/+3V                                  |      | 30    |      | dBm  |
|                                                 | 0/+5V                                  |      | 34    |      |      |
| 3rd Order Intermodulation Intercept Point (IP3) | 0.5-2.5GHz                             |      |       |      |      |
|                                                 | (for two-tone input power up to +5dBm) |      |       |      |      |
|                                                 | 0/+3V                                  |      | 45    |      | dBm  |
|                                                 | 0/+5V                                  |      | 50    |      |      |
| Switching Time                                  |                                        |      | 50    |      | ns   |
| Control Current                                 |                                        |      | 5     | 100  | μA   |

Note: All measurements made in a 50Ω system with 0/+3V control voltages, unless otherwise specified.

## Absolute Maximum Ratings

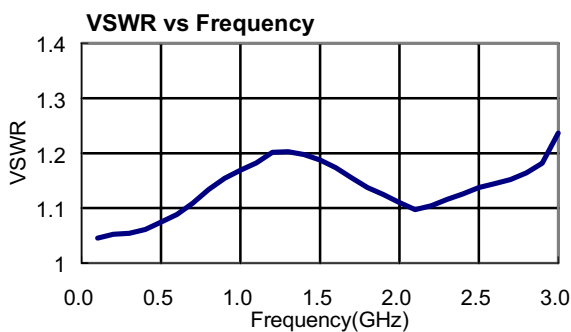
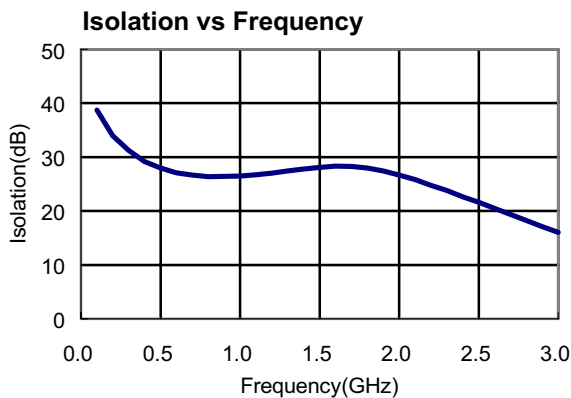
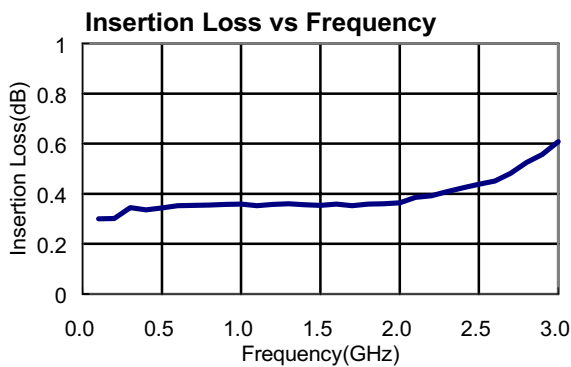
| Parameter                               | Absolute Maximum |
|-----------------------------------------|------------------|
| RF Input Power<br>0.05GHz<br>0.5-2.5GHz | +27dBm<br>+34dBm |
| Control Voltage                         | +8V              |
| Operating Temperature                   | -40°C to +85°C   |
| Storage Temperature                     | -65°C to +150°C  |

## Pin Out



DC blocking capacitors  $C_B$  are required on all RF ports.  
 $C_B = C_A = 51\text{pF}$  for operating frequency > 500MHz.

## Typical Performance at +25°C



## Truth Table

| VC1               | VC2               | RFC-RF1        | RFC-RF2        |
|-------------------|-------------------|----------------|----------------|
| $V_{\text{High}}$ | 0                 | Isolation      | Insertion Loss |
| 0                 | $V_{\text{High}}$ | Insertion Loss | Isolation      |

$V_{\text{High}} = +3\text{V to } +5\text{V}$