

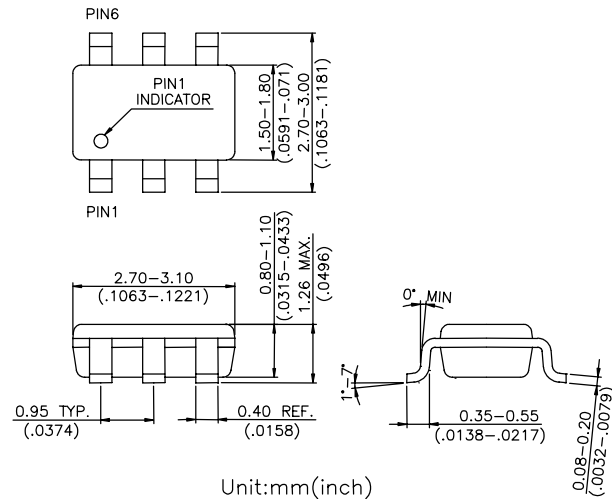
## Features

- **Low Insertion Loss:** 0.35dB @ 2GHz
- **Isolation:** 25dB @ 2GHz
- **P1dB:** +26dBm Typical @ +3V
- **IP3:** 43dBm
- **Low DC Power Consumption**
- **Low Cost SOT-26 Plastic Package**

## Description

The HWS301 is a GaAs MMIC SPDT switch in a low cost SOT-26 plastic package. The HWS301 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

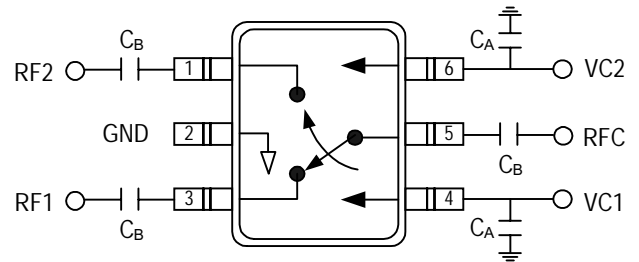
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	DC-2.0GHz		0.35	0.55	dB
	DC-2.5GHz		0.40	0.60	dB
Isolation	DC-1.0GHz	25	28		dB
	DC-2.0GHz	22	25		dB
	DC-2.5GHz	20	23		dB
VSWR	DC-2.5GHz		1.20:1		
Input Power for One dB Compression	0.5-2.5GHz 0/+3V		26		dBm
	0/+5V		30		
3rd Order Intermodulation Intercept Point (IP3)	0.5-2.5GHz (for two-tone input power up to +5dBm)				dBm
	0/+3V		43		
	0/+5V		48		
Switching Time			50		ns
Control Current			5	50	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 0.05GHz 0.5-2.5GHz	+24dBm +30dBm
Control Voltage	+8V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

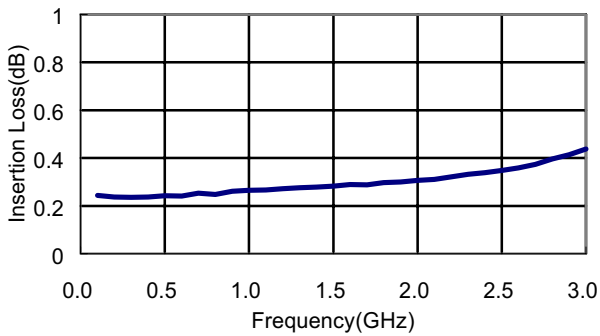
### Pin Out



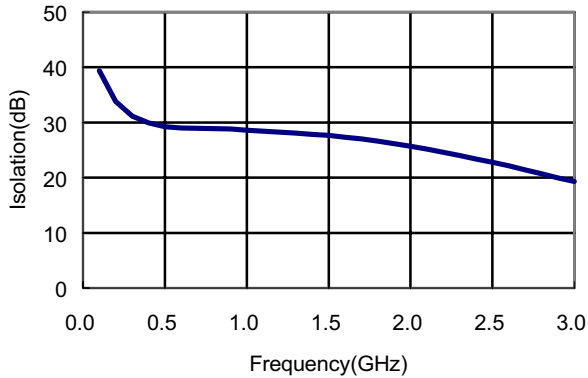
DC blocking capacitors  $C_B$  are required on all RF ports.  
 $C_B = C_A = 51\text{pF}$  for operating frequency > 500MHz.

### Typical Performance @ +25°C

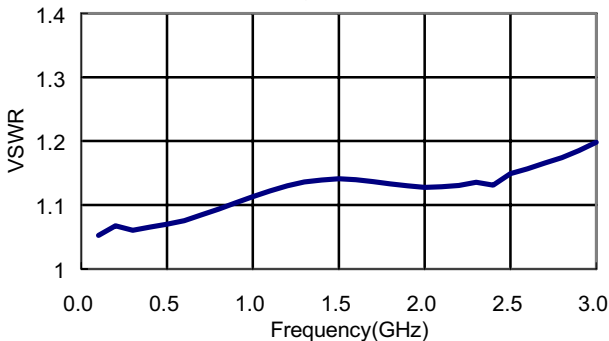
Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency



### Truth Table

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

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