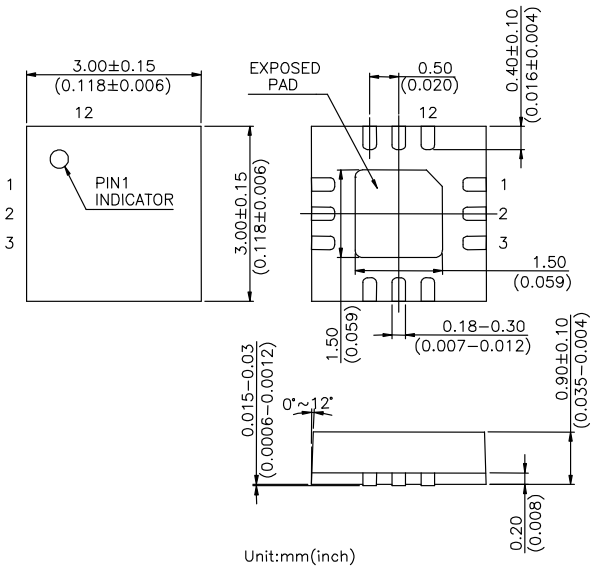
Features

- **Low Insertion Loss :** 0.95 dB @ 2.5 GHz
  1.25 dB @ 5.8 GHz
- **Isolation:** 26 dB @ 2.5 GHz
  18 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package**
- **PHEMT process**

QFN12L (3 x 3 mm)



Description

The HWS451 is a GaAs PHEMT MMIC SP4T switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic lead (Pb) free package. The HWS451 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in WiMAX or IEEE 802.11a/b/g WLAN PC card and access point applications.

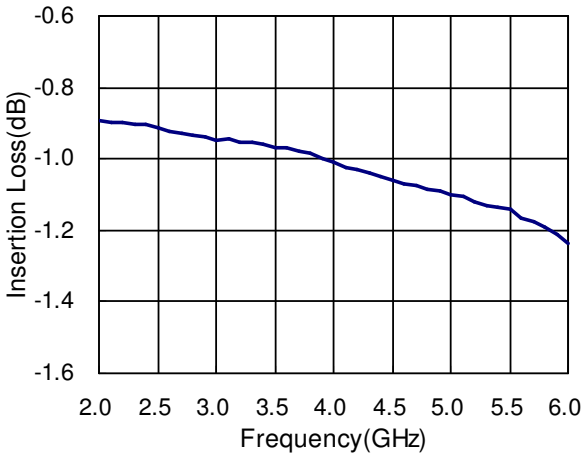
Electrical Specifications at 25℃ with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.10-6.00 GHz 2.40-2.50 GHz 3.30-3.90 GHz 4.90-5.85 GHz		1.30 0.95 1.00 1.25	1.20	dB dB dB dB
Isolation	0.10-6.00 GHz 2.40-2.50 GHz 3.30-3.90 GHz 4.90-5.85 GHz	21	18 26 22 18		dB dB dB dB
Return Loss	0.10-6.00 GHz 2.40-2.50 GHz 3.30-3.90 GHz 4.90-5.85 GHz		15 20 18 15		dB dB dB dB
Input Power for One dB Compression	2.00-6.00 GHz		36		dBm
Control Current			10	200	uA

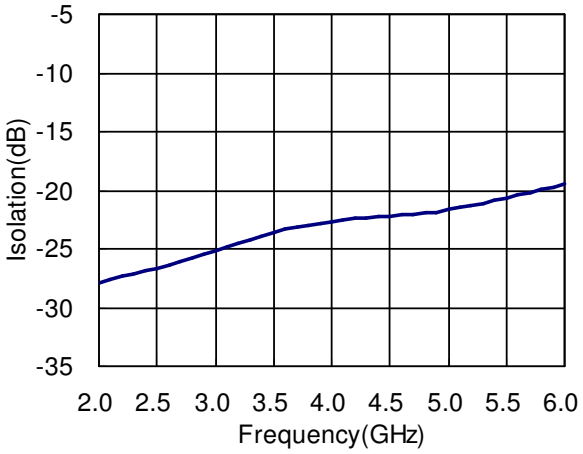
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

Typical Performance Data with 8pF Capacitors @ +25℃

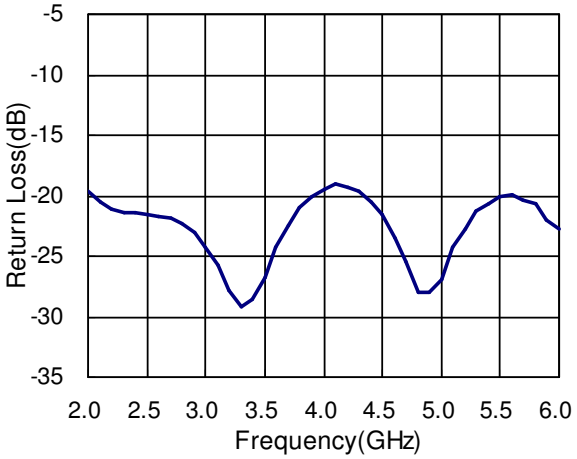
Insertion Loss vs Frequency



Isolation vs Frequency



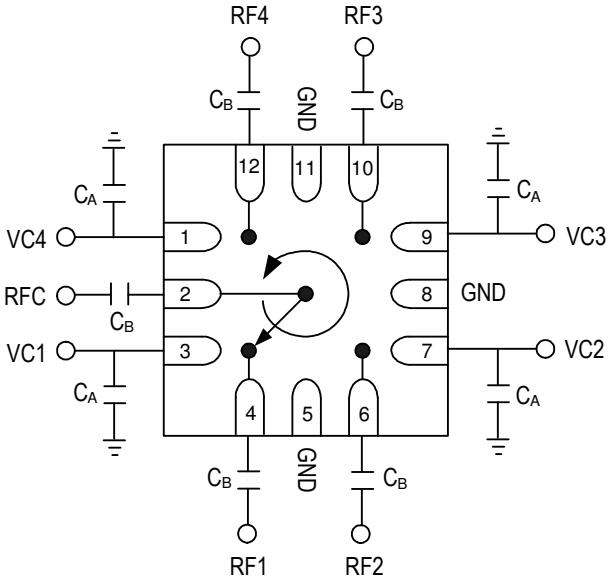
Return Loss vs Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+36 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. RF by-pass capacitors C_A=8pF.
3. Exposed pad in the bottom must be connected to ground by via holes.

Logic Table for Switch On-Path

VC1	VC2	VC3	VC4	RFC
1	0	0	0	RF1
0	1	0	0	RF2
0	0	1	0	RF3
0	0	0	1	RF4

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