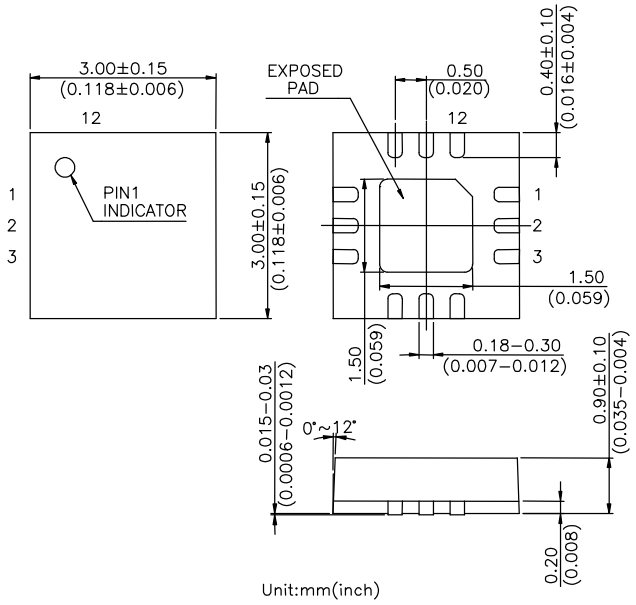
Features

- **Low Insertion Loss :** 0.50 dB @ 2.7 GHz
  0.65 dB @ 5.8 GHz
- **Isolation:** 25.5 dB @ 2.7 GHz
  27.5 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package, RoHS Compliant**
- **PHEMT process**

QFN12L (3 x 3 mm)



Description

The HWS450 is a GaAs PHEMT MMIC SPDT switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic lead (Pb) free package. The HWS450 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 as transmit/receive switch, antenna diversity switch, or band-selection switch.

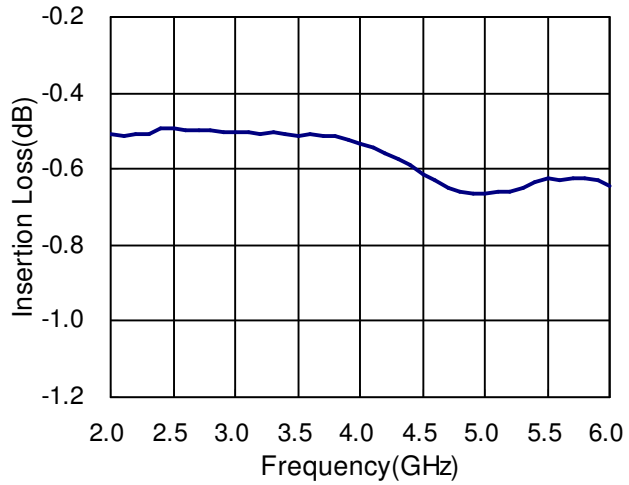
Electrical Specifications at 25℃ with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.10-6.00 GHz 2.30-2.70 GHz 3.30-3.90 GHz 5.15-5.88 GHz		0.65 0.50 0.55 0.65	 0.70 0.75 1.00	dB dB dB dB
Isolation	0.10-6.00 GHz 2.30-2.70 GHz 3.30-3.90 GHz 5.15-5.88 GHz	 20.0 20.0 22.0	25.0 25.5 25.0 27.5		dB dB dB dB
Return Loss	0.10-6.00 GHz		15		dB
Input Power for 0.1 dB Compression	2.00-6.00 GHz @+3V @+5V		 33 37		 dBm dBm
Second Harmonic	Pin=20 dBm		-75		dBc
Third Harmonic	Pin=20 dBm		-75		dBc
Input Third Order Intermodulation Intercept Point	25 dBm Per Tone, 3.80 GHz @+3V @+5V		 57 60		 dBm dBm
Control Current	@+3V		5	100	uA

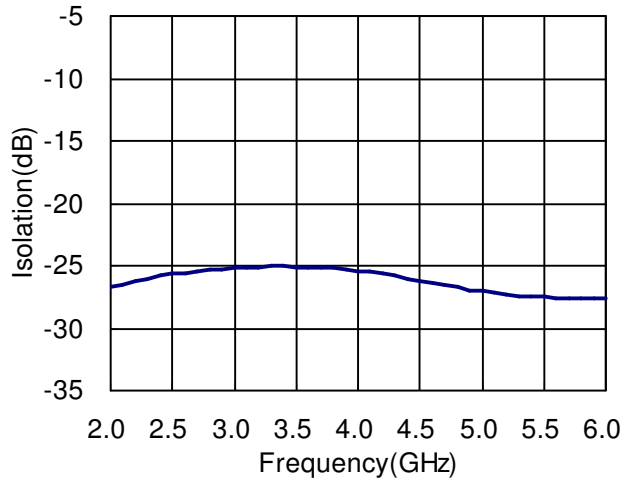
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

Typical Performance Data with 8pF Capacitors @ +25℃

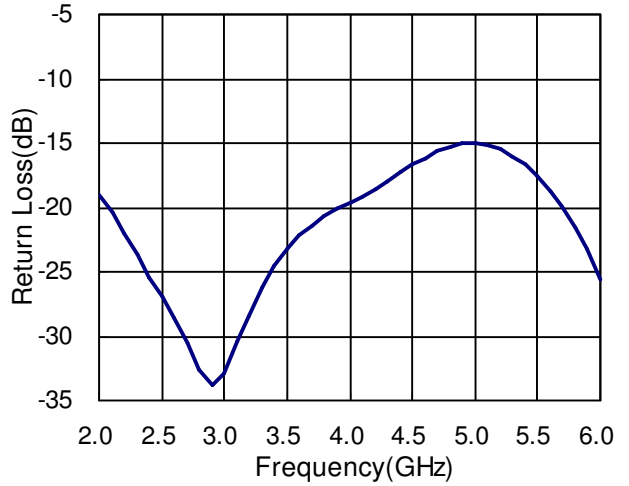
Insertion Loss vs Frequency



Isolation vs Frequency



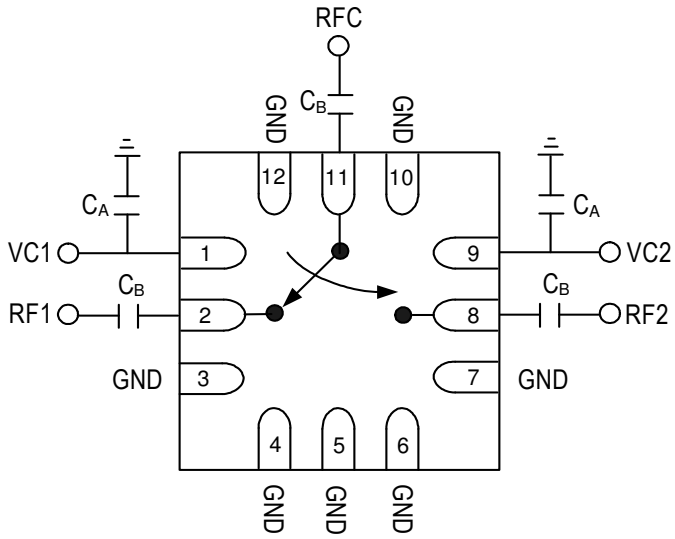
Return Loss vs Frequency



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	RFC-RF1	RFC-RF2
1	0	On	Off
0	1	Off	On

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