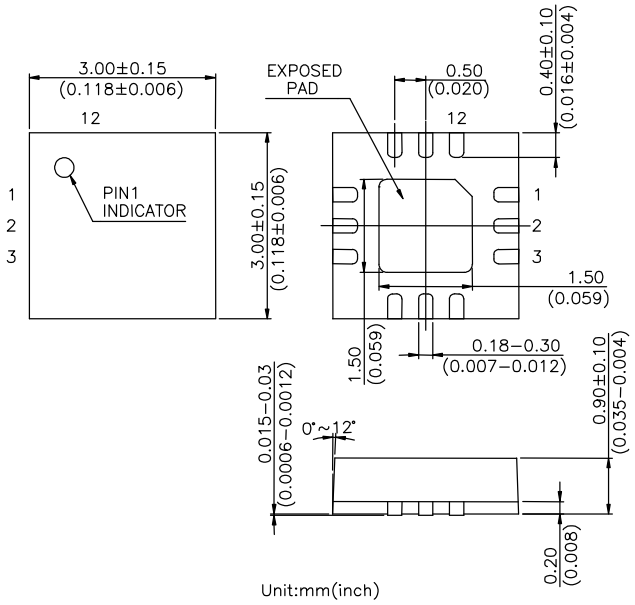
Features

- **Low Insertion Loss :** 0.9 dB @ 2.50 GHz
  1.0 dB @ 3.5 GHz
- **Isolation:** 22 dB @ 2.50 GHz
  20 dB @ 3.5GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package, RoHS Compliant**
- **PHEMT process**

QFN12L (3 x 3 mm)



Description

The HWS499 is a GaAs PHEMT MMIC DPDT switch operating at DC-4 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic lead (Pb) free package. The HWS499 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in WiMAX or IEEE 802.11b/g WLAN systems for combination of transmit/receive and antenna diversity functions.

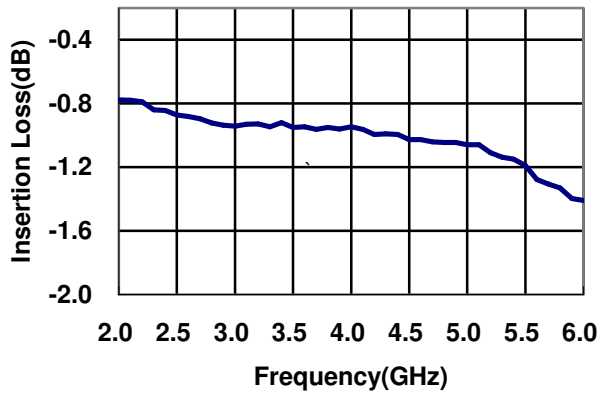
Electrical Specifications at 25℃ with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	2.30-2.70 GHz 3.30-3.90GHz		0.9 1.0	1.1 1.3	dB dB dB
Isolation (on-off or off-on)	2.30-2.70 GHz 3.30-3.90 GHz	20.0 17.0	22 20		dB dB dB
Input Power for 1 dB Compression	2.00-4.00 GHz	37	38		dBm
Control Current			5	200	uA

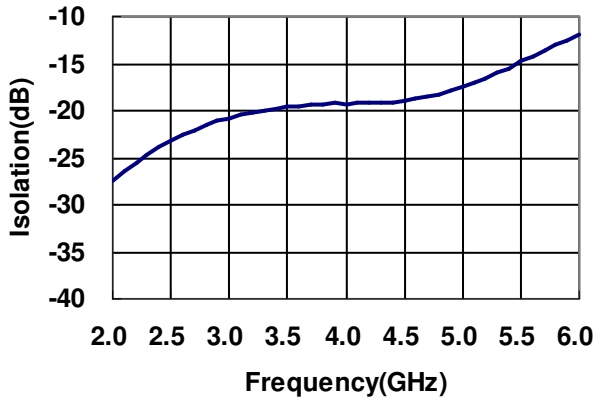
Note: All measurements made in a 50 Ohm system with 0/+3.0V control voltages, unless otherwise specified.

Typical Performance Data with 8pF Capacitors @ +25℃

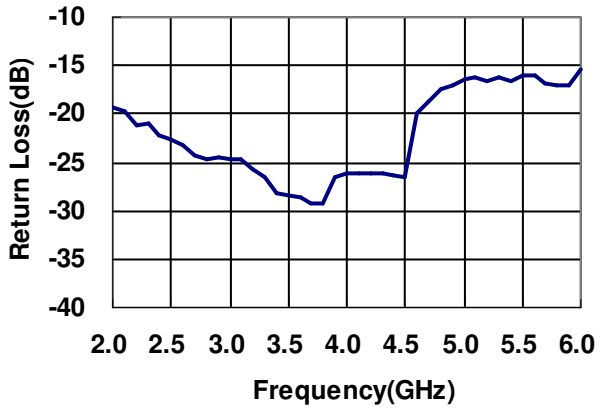
Insertion Loss vs Frequency



Isolation vs Frequency



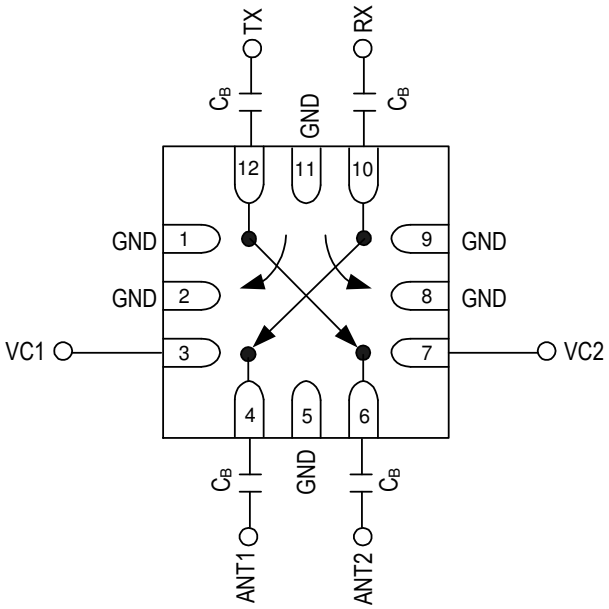
Return Loss vs Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+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. 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-RX	ANT1-TX	ANT2-TX	ANT2-RX
1	0	On	Off	On	Off
0	1	Off	On	Off	On
1	1	Off	Off	Off	Off
0	0	Off	Off	Off	Off

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