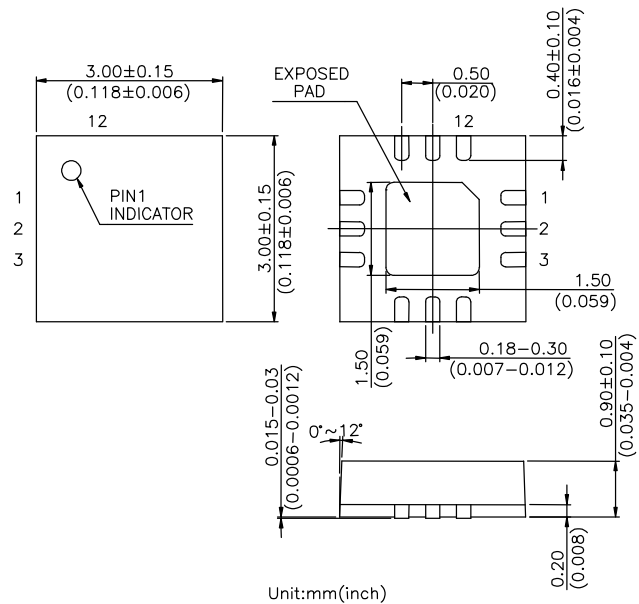


Features

- **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**

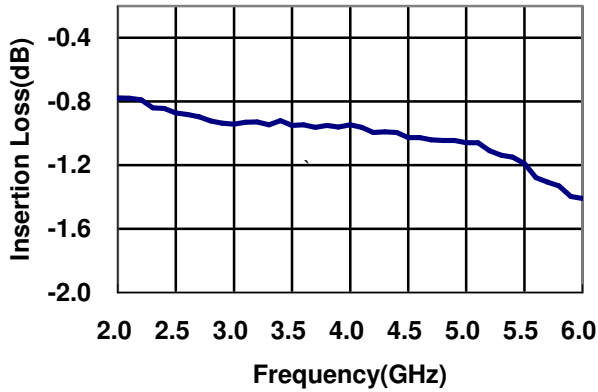
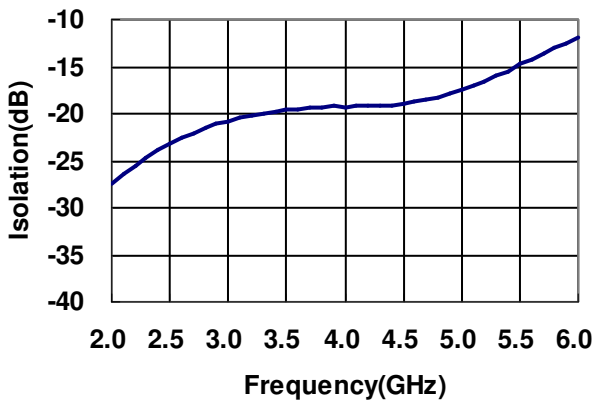
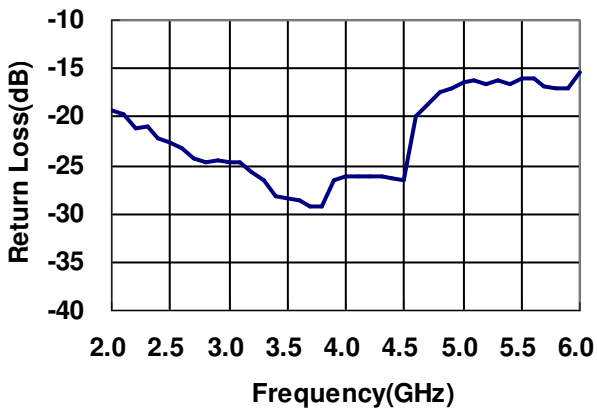
QFN12L (3 x 3 mm)

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.

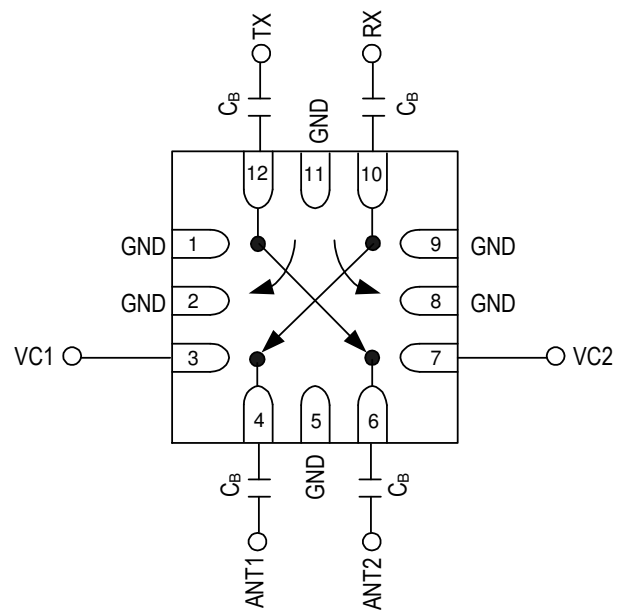
Electrical Specifications at 25°C with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	2.30-2.70 GHz		0.9	1.1	dB
	3.30-3.90GHz		1.0	1.3	dB
Isolation (on-off or off-on)	2.30-2.70 GHz	20.0	22		dB
	3.30-3.90 GHz	17.0	20		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 °C
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 °C to +85 °C
Storage Temperature	-65 °C to +150 °C

Pin Out (Top View)

Note:

- DC blocking capacitors $C_B=8\text{pF}$ are required on all RF ports.
- Exposed pad in the bottom must be connected to ground by via holes.
- 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