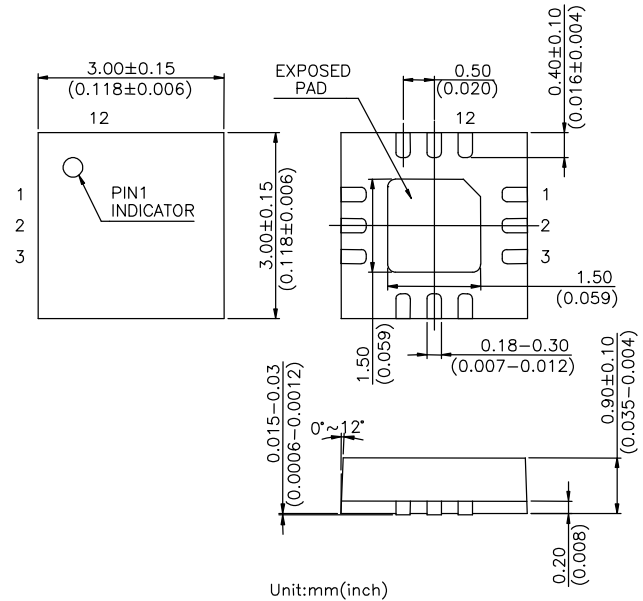


Features

- **Low Insertion Loss** : 0.8 dB @ 2.50 GHz
1.0 dB @ 5.85 GHz
- **Isolation**: 29.5 dB @ 2.50 GHz
20.5 dB @ 5.85 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package**
- **PHEMT process**
- **Lead Free and RoHS Compliant Version of HWS383**

QFN12L (3 x 3 mm)



Description

The HWS410 is a GaAs PHEMT MMIC DPDT switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic lead (Pb) free package. The HWS410 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in IEEE 802.11a/b/g WLAN systems for combination of transmit/receive and antenna diversity functions.

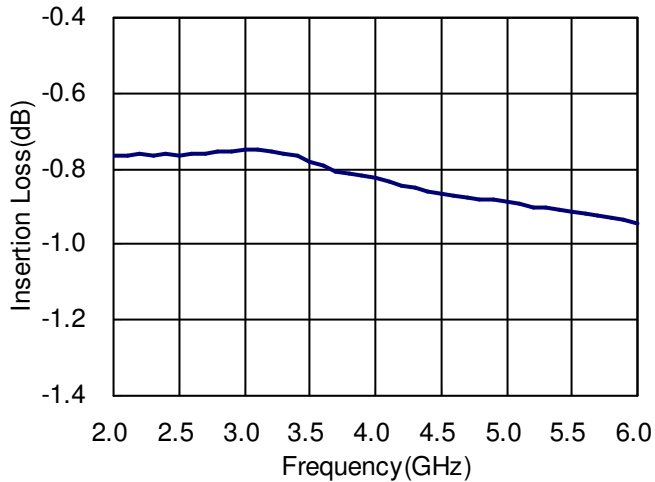
Electrical Specifications at 25°C with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.10-6.00 GHz		1.0		dB
	2.40-2.50 GHz		0.8	1.0	dB
	5.15-5.85 GHz		1.0	1.3	dB
Isolation	0.10-6.00 GHz		20.0		dB
	2.40-2.50 GHz	27.0	29.5		dB
	5.15-5.85 GHz	18.0	20.5		dB
Return Loss	0.10-6.00 GHz		15		dB
	2.40-2.50 GHz		20		dB
	5.15-5.85 GHz		18		dB
Input Power for One dB Compression	2.00-6.00 GHz		33		dBm
Input Third Order Intermodulation Intercept Point	20 dBm Per Tone @ 2.50 GHz		52		dBm
	22 dBm Per Tone @ 5.85 GHz		52		dBm
Control Current			5	200	uA

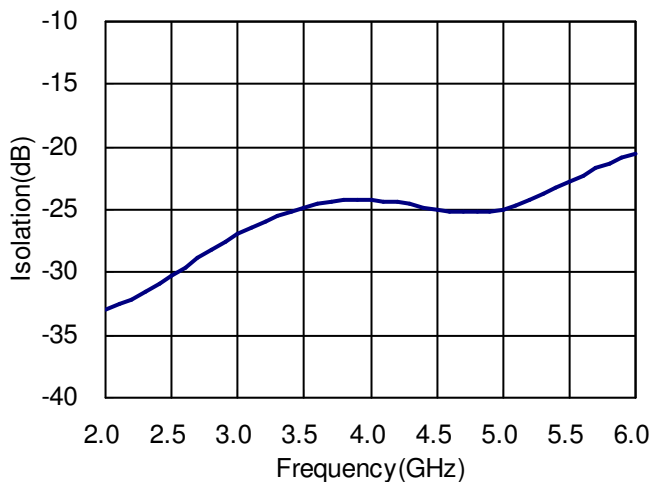
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

Typical Performance Data with 8pF Capacitors @ +25°C

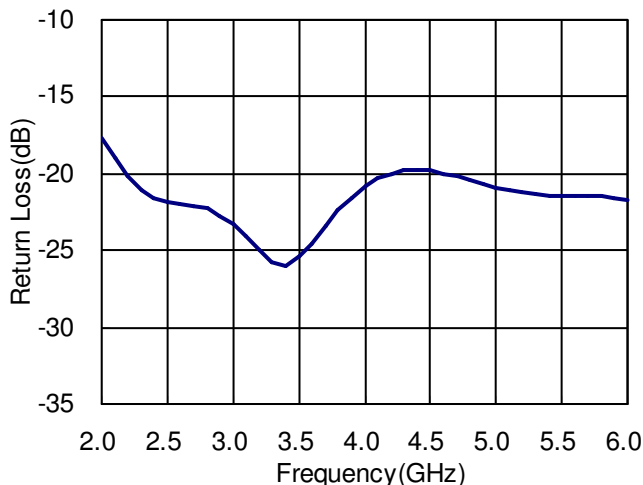
Insertion Loss vs Frequency



Isolation vs Frequency



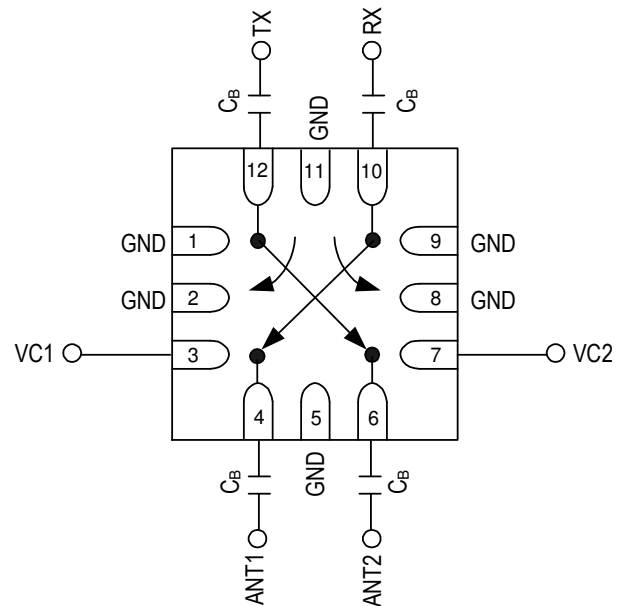
Return Loss vs Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+34 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

State	VC1	VC2	ANT1	ANT2
1	0	1	TX	RX
2	1	0	RX	TX

'1' = +3V to +5V

'0' = 0V to +0.2V