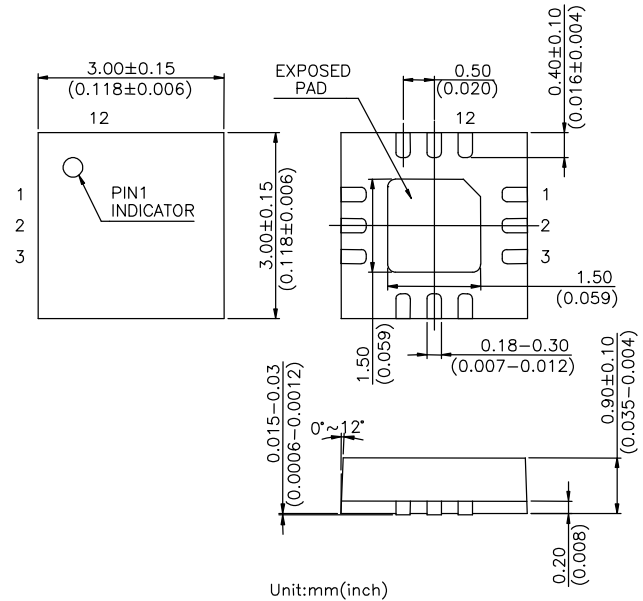


Features

- **Low Insertion Loss:** 0.7 dB @ 2.5 GHz
1.0 dB @ 4.9 to 6.0 GHz
- **Isolation:** 27 dB @ 2.5 GHz
20 dB @ 4.9 to 6.0 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Package, RoHS Compliant**
- **PHEMT process**
- **4 Control Lines version of HWS383**

QFN12L (3 x 3 mm)



Description

The HWS420 is a GaAs PHEMT MMIC DPDT switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic package. The HWS420 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.

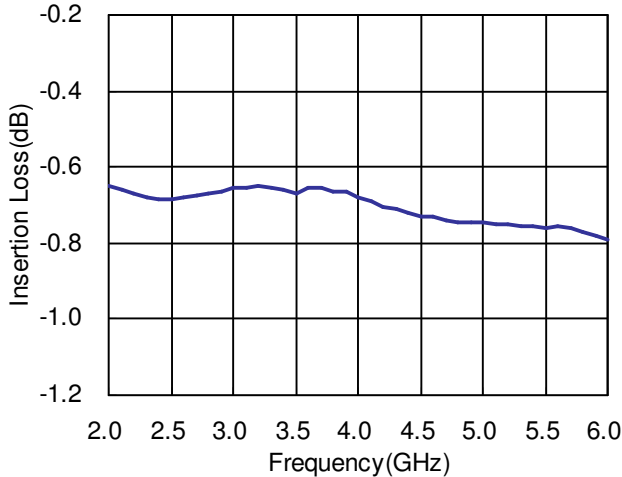
Electrical Specifications at 25 °C with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.1-6.0 GHz		1.0		dB
	2.4-2.5 GHz		0.7		dB
	4.9-6.0 GHz		1.0	1.3	dB
Isolation (ANT1-ANT2, TX-RX)	0.1-6.0 GHz		15		dB
	2.4-2.5 GHz		23		dB
	4.9-6.0 GHz	13	15		dB
Isolation (ANT1-TX, ANT1-RX, ANT2-TX, ANT2-RX)	0.1-6.0 GHz		20		dB
	2.4-2.5 GHz		27		dB
	4.9-6.0 GHz	15	20		dB
Return Loss	0.1-6.0 GHz		15		dB
Input Power for One dB Compression	2.0-6.0 GHz		33		dBm
Control Current			20		uA

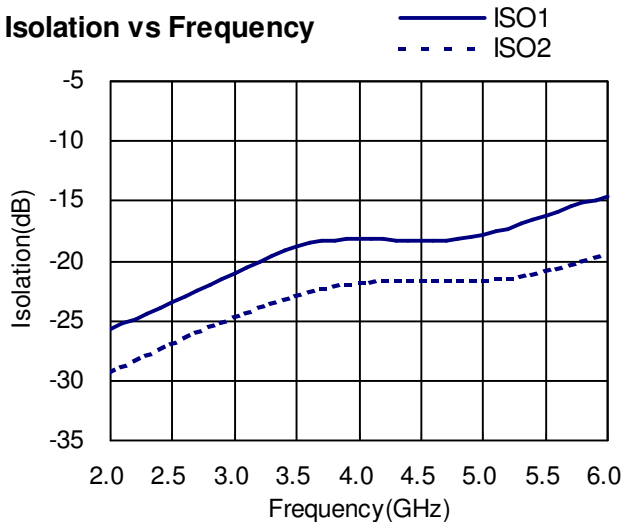
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

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

Insertion Loss vs Frequency

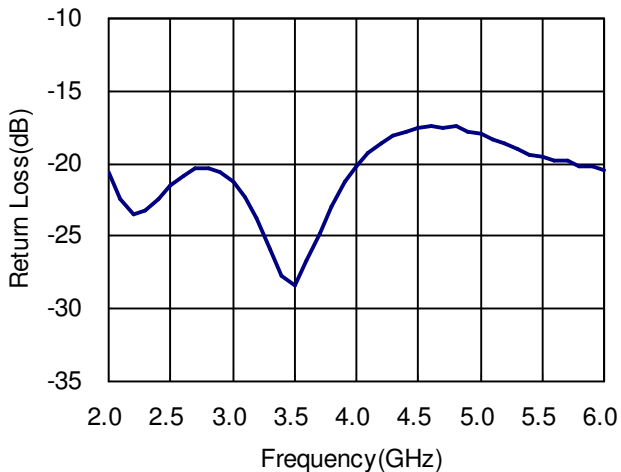


Isolation vs Frequency



Note: ISO1 for ANT1-ANT2 and TX-RX
ISO2 for ANT1-TX, ANT1-RX, ANT2-TX, and ANT2-RX

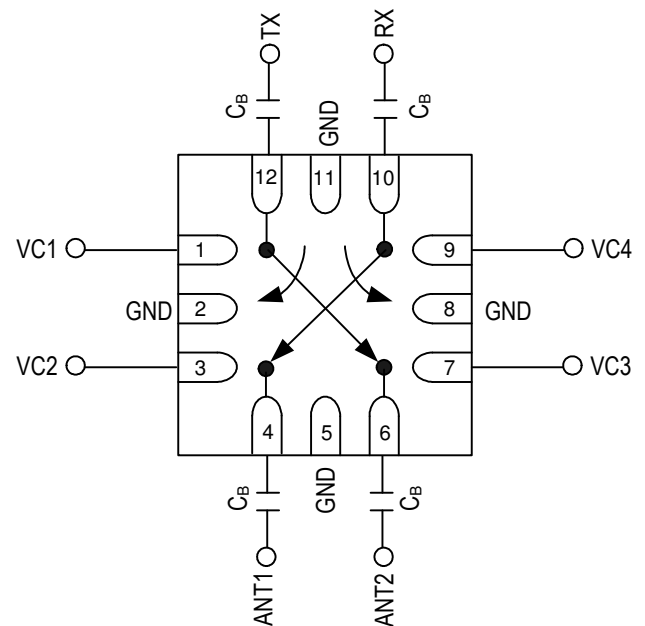
Return Loss vs Frequency



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:

1. DC blocking capacitors $C_B=8\text{pF}$ 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	VC3	VC4	On-Path
1	0	0	0	ANT2-RX
0	1	0	0	ANT1-TX
0	0	1	0	ANT1-RX
0	0	0	1	ANT2-TX

'1' = +3V to +5V

'0' = 0V to +0.2V