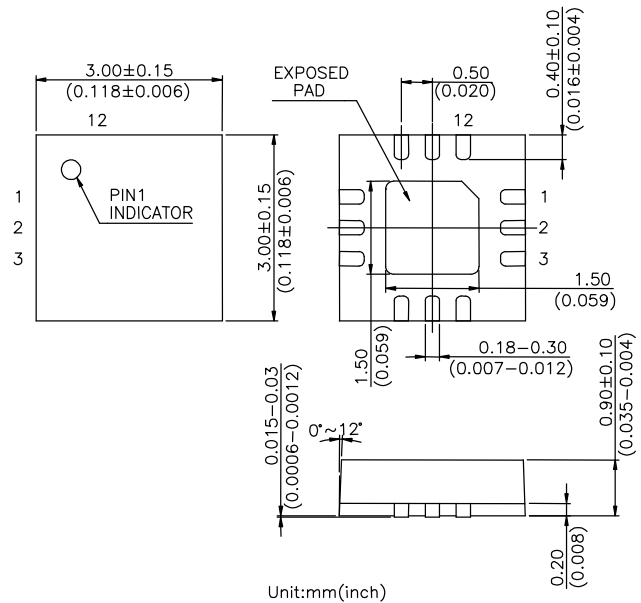


**Features**

- **Low Insertion Loss :** 0.7 dB @ 2.5 GHz  
0.9 dB @ 4.9 to 6.0 GHz
- **Isolation:** 25 dB @ 2.5 GHz  
30 dB @ 4.9 to 6.0 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Package**
- **PHEMT process**

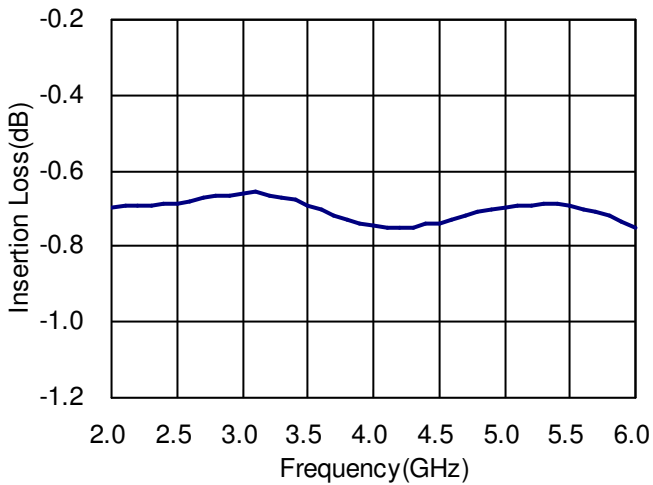
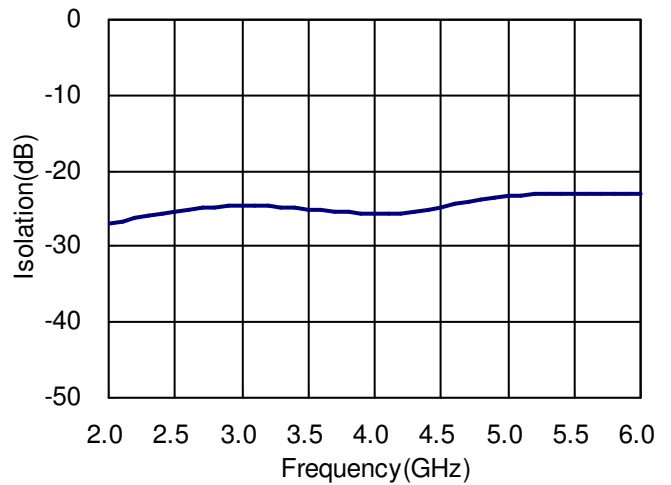
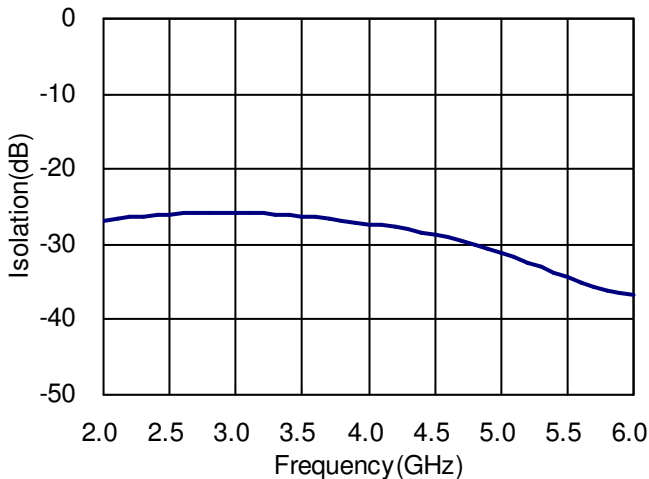
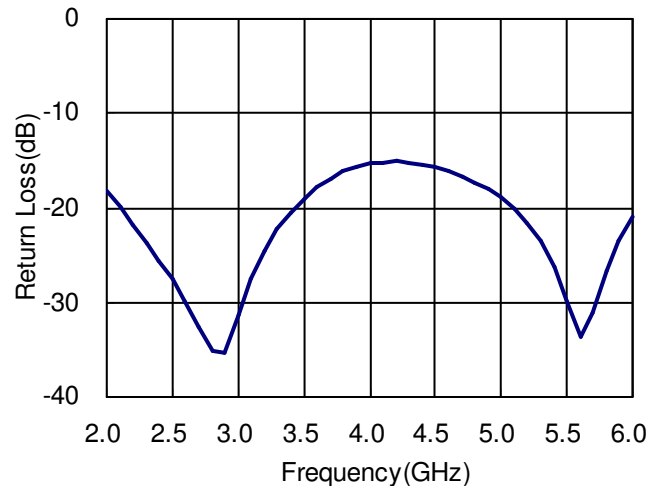
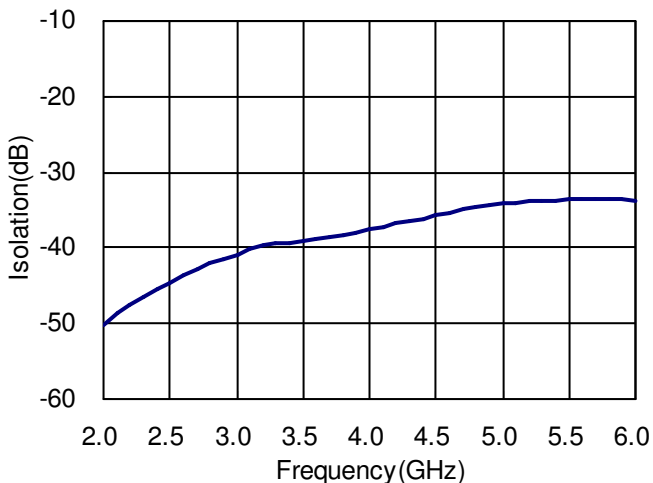
**QFN12L (3 x 3 mm)**

**Description**

The HWS407 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 HWS407 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		0.9		dB
	0.1-1.0 GHz		0.6		dB
	2.4-2.5 GHz		0.7		dB
	4.9-6.0 GHz		0.9	1.2	dB
Isolation (on port to off port)	0.1-6.0 GHz		25		dB
	2.4-2.5 GHz		25		dB
	4.9-6.0 GHz	27	30		dB
Isolation (off port to off port)	0.1-6.0 GHz		33		dB
	2.4-2.5 GHz		43		dB
	4.9-6.0 GHz		33		dB
Isolation (TX to RX or ANT1 to ANT2)	0.1-6.0 GHz		22		dB
	2.4-2.5 GHz		25		dB
	4.9-6.0 GHz		22		dB
Return Loss	0.1-6.0 GHz		15		dB
Input Power for One dB Compression	2.0-6.0 GHz		30		dBm
Control Current			20	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(TX port to RX port) vs Frequency**

**Isolation(on port to off port) vs Frequency**

**Return Loss vs Frequency**

**Isolation(off port to off port) vs Frequency**


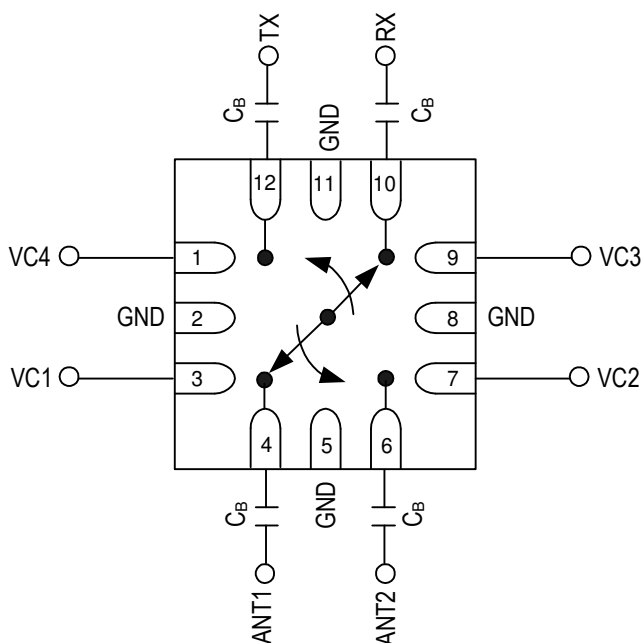
### Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+32 dBm @ +3V
Control Voltage	+6V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

### Logic Table for Switch On-Path

VC1	VC2	VC3	VC4	On-Path
0	1	0	1	ANT1-RX
0	1	1	0	ANT1-TX
1	0	0	1	ANT2-RX
1	0	1	0	ANT2-TX

### Pin Out (Top View)



Note:

- '1' = +3V to +5V, '0' = 0V to +0.2V
- VC1 and VC2 are used for antenna selection, while VC3 and VC4 are used for TX/RX selection.

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.