

**HWS447**

GaAs DC-6 GHz SPDT Terminated Switch

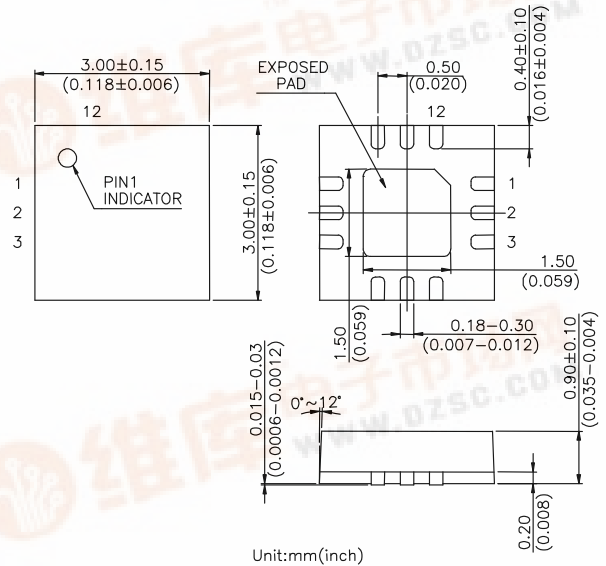
August 2007 V5

Features

- **Low Insertion Loss** : 0.50 dB @ 2.7 GHz
0.60 dB @ 5.8 GHz
- **Isolation**: 29 dB @ 2.7 GHz
22 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package, RoHS Compliant**
- **PHEMT process**

Description

The HWS447 is a GaAs PHEMT MMIC SPDT switch operating at DC-6 GHz in a low cost miniature QFN12L (3 x 3 mm) plastic lead (Pb) free package. The HWS447 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in WiMAX or IEEE 802.11a/b/g WLAN PC card and access point applications as transmit/receive switch, antenna diversity switch, or band-selection switch.

QFN12L (3 x 3 mm)**Electrical Specifications at 25°C with 0, +3V Control Voltages**

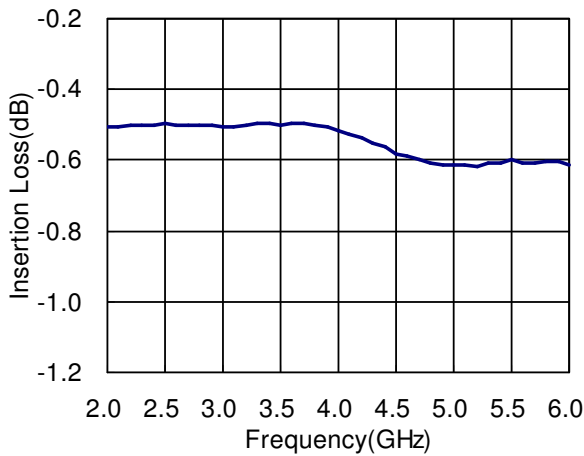
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.10-6.00 GHz		0.60		dB
	2.30-2.70 GHz		0.50	0.80	dB
	3.30-3.90 GHz		0.50	0.80	dB
	5.15-5.88 GHz		0.60	0.90	dB
Isolation (RFC Port to Off Port)	0.10-6.00 GHz		22		dB
	2.30-2.70 GHz	25	29		dB
	3.30-3.90 GHz	23	27		dB
	5.15-5.88 GHz	18	22		dB
Isolation (RF1 Port to RF2 Port)	0.10-6.00 GHz		18		dB
	2.30-2.70 GHz		24		dB
	3.30-3.90 GHz		21		dB
	5.15-5.88 GHz		18		dB
Return Loss (On Port)	0.10-6.00 GHz		20		dB
Return Loss (Off Port)	0.10-6.00 GHz		12		dB
Input Power for One dB Compression	2.00-6.00 GHz				
	@+3V @+5V		36 38		dBm dBm
Control Current	No RF Power Input		3	10	uA

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

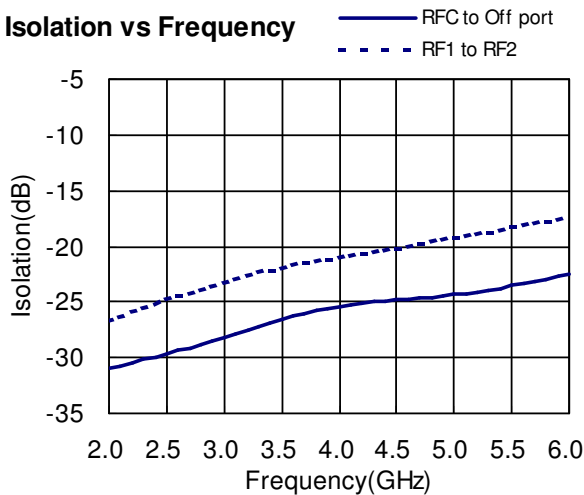


Typical Performance Data with 8pF Capacitors @ +25 °C

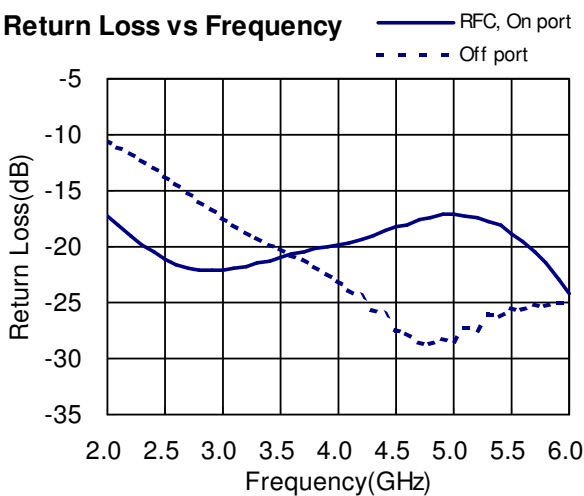
Insertion Loss vs Frequency



Isolation vs Frequency



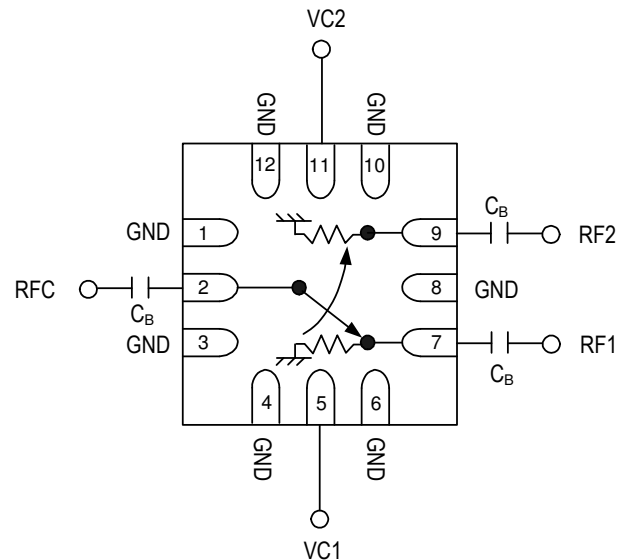
Return Loss vs Frequency



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.

Logic Table for Switch On-Path

VC1	VC2	RFC-RF1	RFC-RF2
1	0	On	Off
0	1	Off	On

'1' = +2.7V to +5V

'0' = 0V to +0.2V