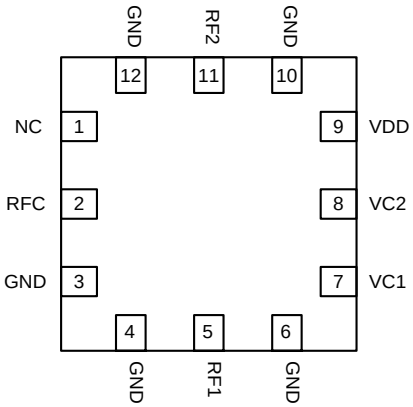
Features

- **Low Insertion Loss: 0.6 dB @ 2.5 GHz**
- **High Isolation: 28 dB @ 5.8 GHz**
- **Low control voltage: 1.3 to 3.3 V**
- **No external DC blocking capacitors required**
- **Small XQFN12L (2x2x0.55mm) package**

Top View



Description

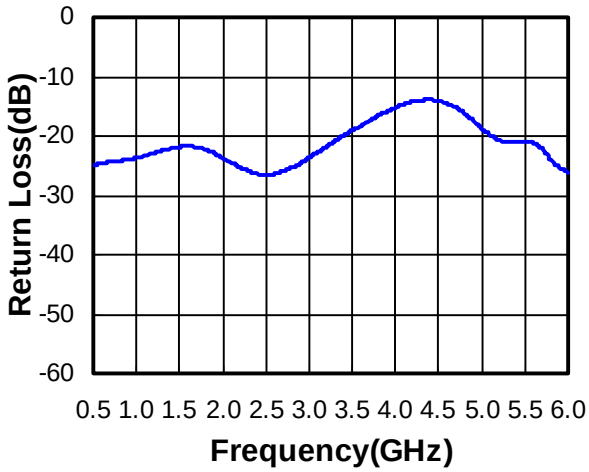
The HWS546 is a GaAs SPDT switch operating at 0.5-6.0 GHz in a XQFN12L (2x2x0.55mm) package. The HWS546 features low insertion loss with very low DC power consumption. This switch can be used in WLAN systems for transmit/receive or antenna diversity functions.

Electrical Specifications at 25°C with 0, +2.8V Control Voltages

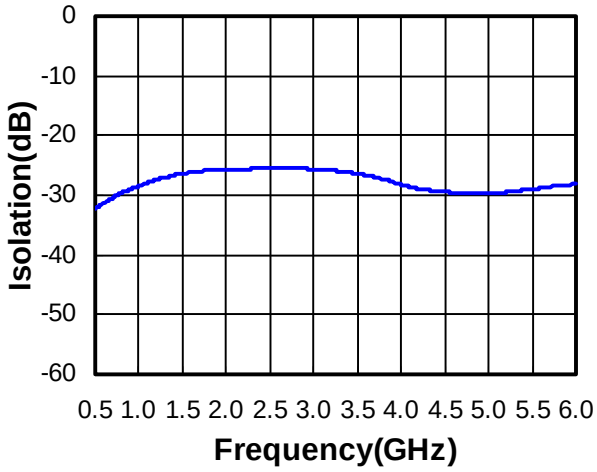
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
RF Specification						
Insertion Loss	IL	2.4-2.5 GHz 4.9-6.0 GHz		0.6 0.8	0.8 1.0	dB
Isolation	ISO	2.4-2.5 GHz 4.9-6.0 GHz	22 24	25 28		dB dB
Return Loss	RL	2.4-2.5 GHz 4.9-6.0 GHz		18 13		dB dB
Input Power for 0.1dB Compression	P0.1dB	2.5 GHz		39		dBm
2nd and 3rd Harmonics		Pin=+20dBm		-70		dBc
DC Specification						
Supply Voltage	V_{DD}		1.8	2.8	3.3	V
Supply Current	I_{DD}	V_{DD}=2.8V		90		uA
Shutdown Mode Supply Current	I_{OFF}	V_{DD}=2.8V VC1=VC2=0V		5		uA
Control Voltage High Low	Vc		 1.3 0		 V_{DD} 0.3	V
Control Current	Ic			0.5	2	uA
Switching Specification						
Switching Time		50% Vc to 90/10% RF 10% RF to 90% RF		1500 250		ns
Startup Time		Shutdown to RF State			50	us

Note: All measurements made in a 50 ohm system with 0/+2.8V control voltages, unless otherwise specified.

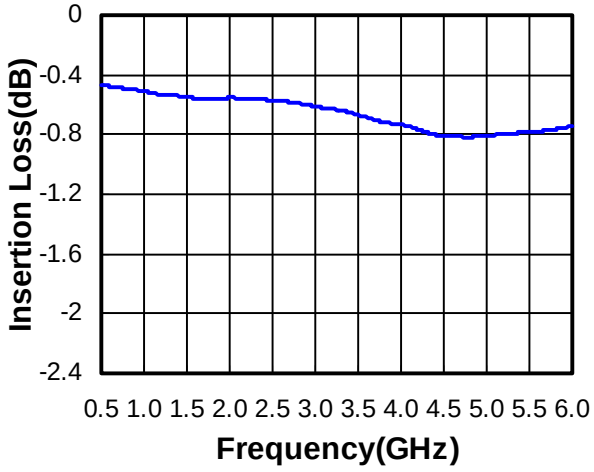
Return Loss vs. Frequency



Isolation vs. Frequency



Insertion Loss vs. Frequency



Logic Table for Switch On-Path

VC1	VC2	RFC-RF1	RFC-RF2
1	0	off	on
0	1	on	off
0	0	Shutdown	

'1' = +1.3V to V_{DD}
'0' = 0V to +0.3V

Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power 0.5-6.0 GHz	+39 dBm
Supply Voltage	+4.8V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

Chip Outline

Unit: mm