

**HWS398**

GaAs DC-6 GHz SPDT Switch

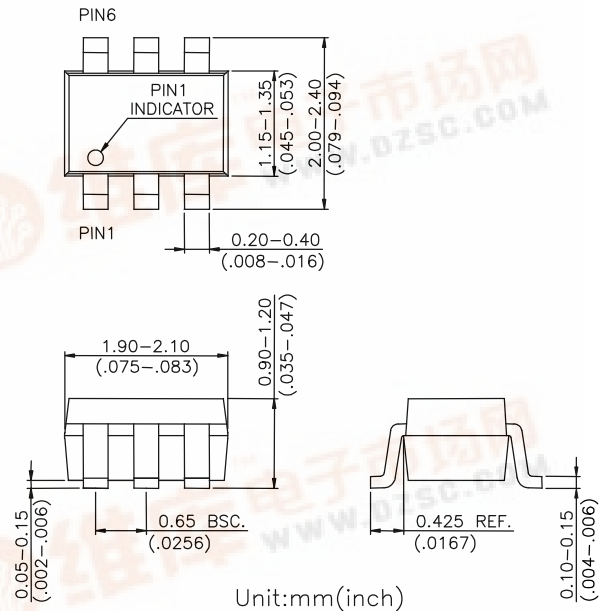
July 2004 V1

Features

- **Low Insertion Loss:** 0.4 dB @ 2.5 GHz
0.8 dB @ 5.8 GHz
- **Isolation:** 26 dB @ 2.5 GHz
16 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Low Cost SOT-363 Plastic Package**

Description

The HWS398 is a GaAs SPDT switch operating at DC-6 GHz in a low cost SOT-363 plastic package. The HWS398 features low insertion loss 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.

SOT-363**Electrical Specifications at 25°C with 0, +3V Control Voltages**

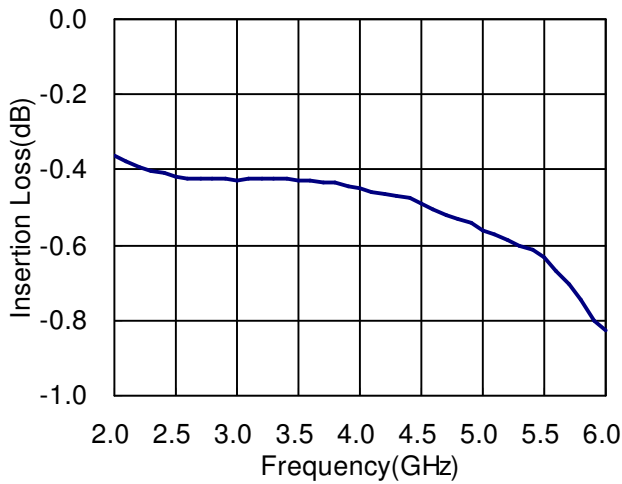
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.1-6.0 GHz		0.8		dB
	2.4-2.5 GHz		0.4		dB
	4.9-5.8 GHz		0.8	1.1	dB
Isolation 1 (RF1-RF2)	0.1-6.0 GHz		16		dB
	2.4-2.5 GHz		28		dB
	4.9-5.8 GHz	14	17		dB
Isolation 2 (RFC-RF1, RFC-RF2)	0.1-6.0 GHz		15		dB
	2.4-2.5 GHz		26		dB
	4.9-5.8 GHz	13	16		dB
Return Loss	0.1-6.0 GHz		20		dB
Input Power for One dB Compression	2.0-6.0 GHz		30		dBm
Control Current			5	100	uA

Note: All measurements made in a 50 ohm system with 0/+3V control voltages, unless otherwise specified.

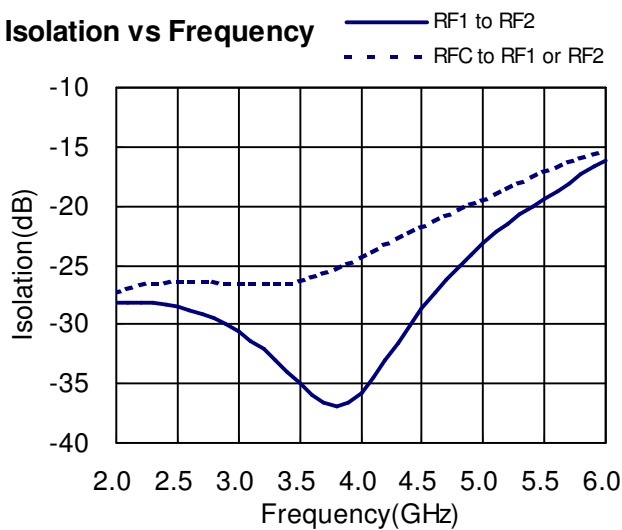


Typical Performance Data @ +25 °C

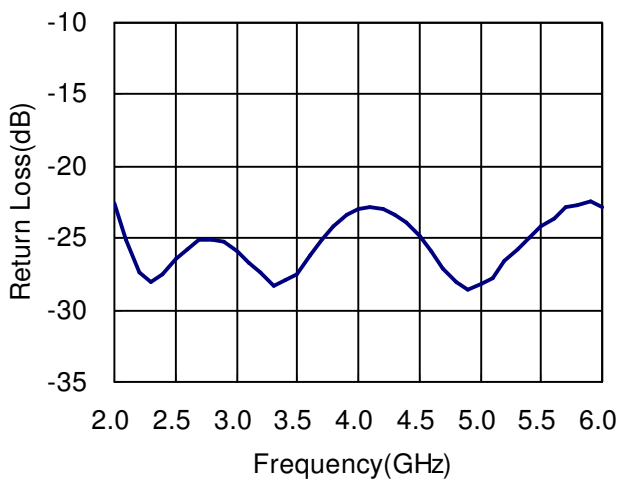
Insertion Loss vs Frequency



Isolation vs Frequency



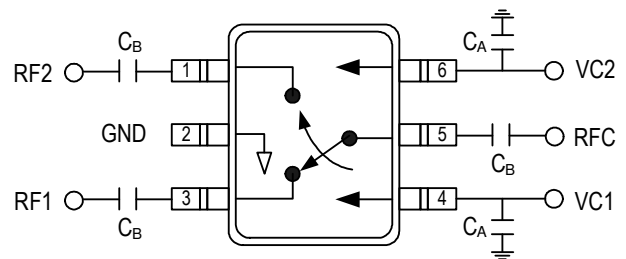
Return Loss vs Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power 0.5-2.5 GHz	+34 dBm
Control Voltage	+6V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C

Pin Out (Top View)



DC blocking capacitors $C_B = 8\text{pF}$ and by-pass capacitors $C_A = 8\text{pF}$ are required on all RF ports and control lines.

Logic Table for Switch On-Path

VC1	VC2	RFC-RF1	RFC-RF2
1	0	Isolation	Insertion Loss
0	1	Insertion Loss	Isolation

'1' = +3V to +5V

'0' = 0V to +0.2V