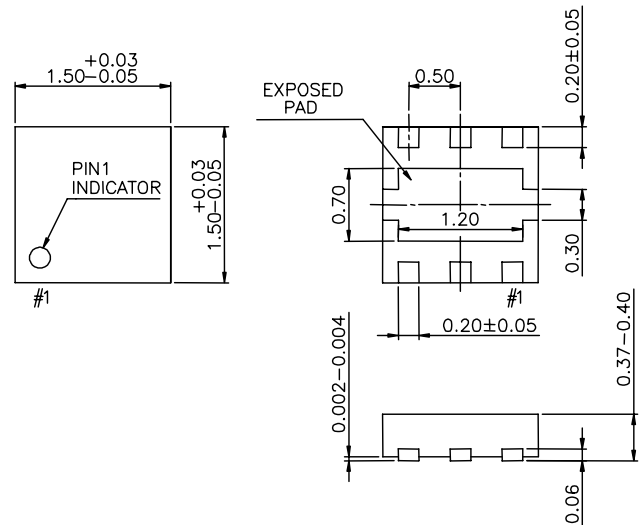


Features

- **Low Insertion Loss** : 0.6 dB @ 2.50 GHz
0.9 dB @ 5.85 GHz
- **Isolation**: 22.0 dB @ 2.50 GHz
17.0 dB @ 5.85 GHz
- **Low DC Power Consumption**
- **Miniature USON6L (1.5x1.5x0.4mm) Plastic Lead (Pb) Free and GP Compliant Package**
- **PHEMT process**

USON6L (1.5x1.5)



Unit:mm

Description

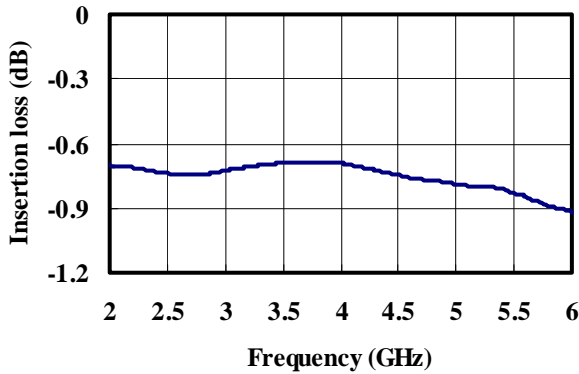
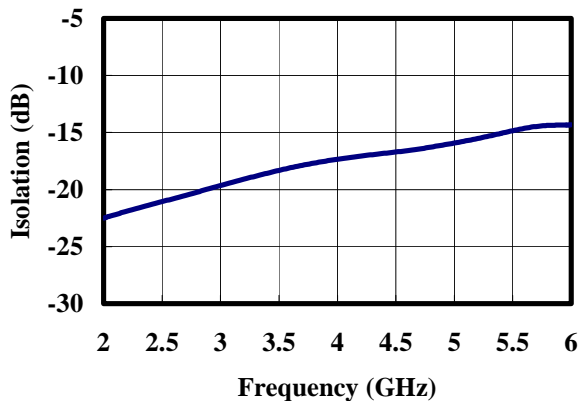
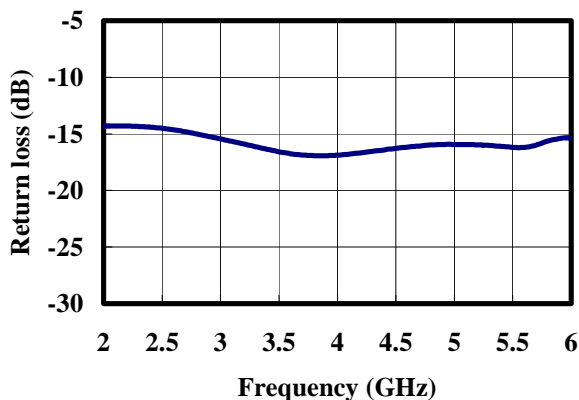
The HWS503 is a GaAs PHEMT MMIC DPDT switch operating at 0.5-6 GHz in a miniature USON6L (1.5 x 1.5 x 0.4mm) plastic lead (Pb) free package. The HWS503 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in IEEE 802.11a/b/g WLAN systems for combination 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	0.50-6.00 GHz		1.0		dB
	2.40-2.50 GHz		0.6	0.8	dB
	5.15-5.85 GHz		0.9	1.1	dB
Isolation	0.50-6.00 GHz		15.0		dB
	2.40-2.50 GHz	20.0	22.0		dB
	5.15-5.85 GHz	14.0	17.0		dB
Return Loss	0.50-6.00 GHz		15		dB
	2.40-2.50 GHz		15		dB
	5.15-5.85 GHz		15		dB
Input Power for One dB Compression	0.50-6.00 GHz		35		dBm
Input Third Order Intermodulation Intercept Point	20 dBm Per Tone @ 2.50 GHz		58		dBm
Switching Time	0dBm @ 2.50 GHz		75		nsec
Control Current			5	20	uA

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

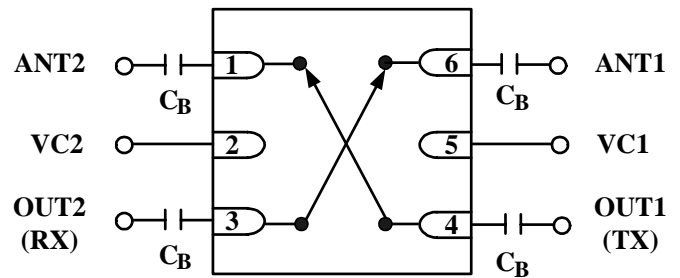
Typical Performance Data with 8pF Capacitors @ +25°C

Insertion loss vs. Frequency

Isolation vs. Frequency

Input return loss vs. Frequency


Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+34dBm @ +3V
Control Voltage	+6V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Electrostatic Discharge Machine Model	Class M1

Pin Out


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.

Truth Table

State	VC1	VC2	ANT1	ANT2
1	0	1	TX	RX
2	1	0	RX	TX

'1' = +3V to +5V

'0' = 0V to +0.2V