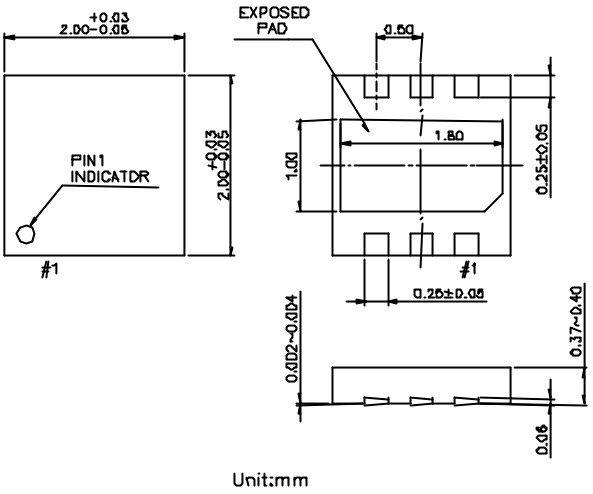
Features

- **Low Insertion Loss:** 0.50 dB @ 2.5 GHz
  0.75 dB @ 5.8 GHz
- **Isolation:** 25.0 dB @ 2.5 GHz
  28.0 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Miniature USON6L (2x2x0.4 mm) Using Lead (Pb) free materials with RoHS compliant**

USON 6L (2x2x0.4 mm)



Description

The HWS506 is a GaAs PHEMT MMIC SPDT switch operating at 0.5-6 GHz in a miniature USON 6L (2 x 2 x 0.4 mm) plastic lead (Pb) free package. The HWS506 features low insertion loss and high linearity 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.

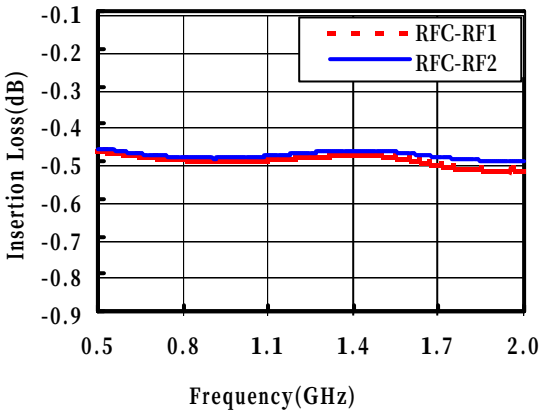
Electrical Specifications at 25°C with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.50-6.00 GHz 2.30-2.70 GHz 3.30-3.90 GHz 5.15-5.88 GHz		0.75 0.50 0.50 0.75	 0.60 0.70 0.90	dB dB dB dB
Isolation (INPUT Port to Off Port)	0.50-6.00 GHz 2.30-2.70 GHz 3.30-3.90 GHz 5.15-5.88 GHz	 20.0 20.0 24.0	25.0 25.0 25.0 28.0		dB dB dB dB
Return Loss	0.50-2.00 GHz 2.00-4.00 GHz 4.00-6.00 GHz		15 20 12		dB dB dB
Input Power for One dB Compression	2.00-6.00 GHz @+3V @+5V		 36 38		 dBm dBm
Second and Third Harmonics	Pin=20dBm		-75		dBc
Input Third Order Intermodulation Intercept Point	25dBm Per Tone, 3.80 GHz		57		dBm
Switching Time	10% to 90%, 90% to 10% RF		150		nsec
Control Current	@+3V		5	100	uA

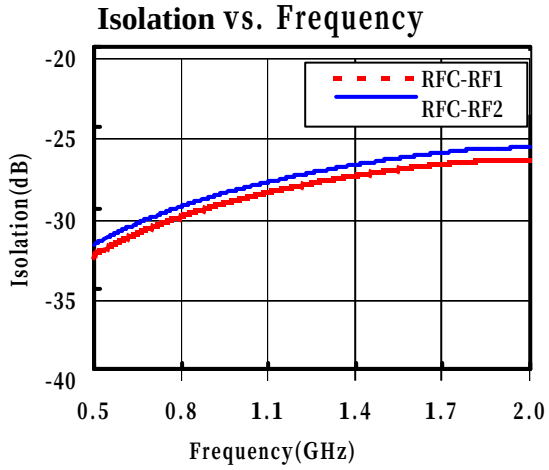
Note: All measurements made in a 50 ohm system with 0/+3V control voltages, unless otherwise specified.

Typical Performance at+25°C
Frequency =0.5GHz~2GHz

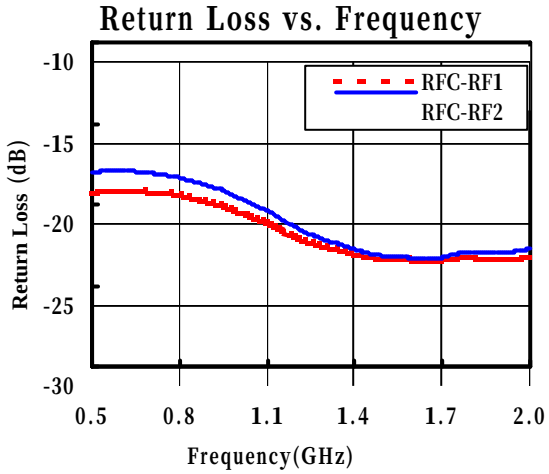
Insertion Loss vs. Frequency



Isolation vs. Frequency

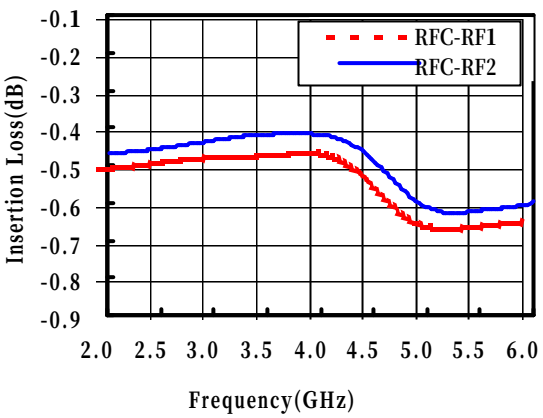


Return Loss vs. Frequency

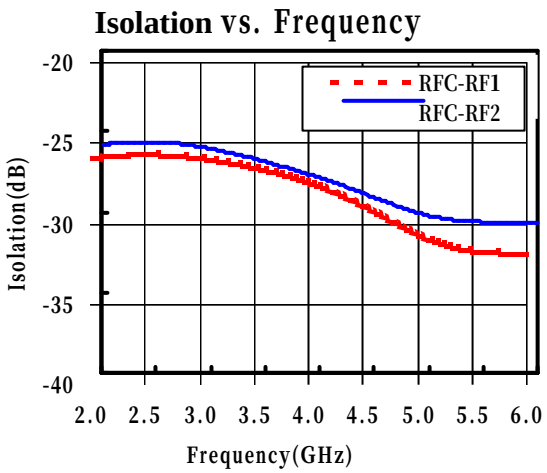


Typical Performance at+25°C
Frequency =2GHz~6GHz

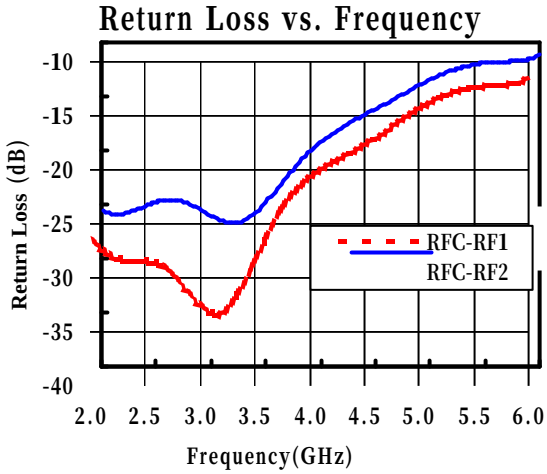
Insertion Loss vs. Frequency



Isolation vs. Frequency



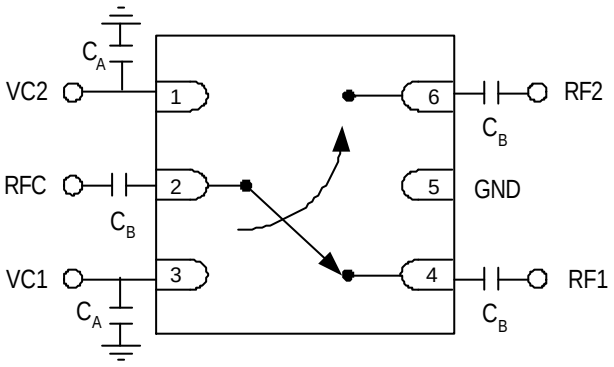
Return Loss vs. Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+38dBm @ +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:

1. DC blocking capacitors C_B=8pF are required at 2~6GHz on all RF ports.
2. DC blocking capacitors C_B=100pF are required at 0.5~2GHz on all RF ports.
3. RF by-pass capacitors C_A=8pF.
4. 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' = +3.0V to +5V
'0' = 0V to +0.2V