## Features

- **Low Insertion Loss:** 0.4 dB @ 2.5 GHz
  0.5 dB @ 5.8 GHz
- **Isolation:** 24 dB @ 2.5 GHz
  21 dB @ 5.8 GHz
- **Low DC Power Consumption**
- **Miniature USON6L (1.5x1.5x0.4 mm) Using Lead (Pb) free materials with RoHS compliant**
- **PHEMT process**

Description

The HWS504 is a GaAs PHEMT MMIC SPDT switch operating at DC-6 GHz in a low cost miniature USON6L (1.5 x 1.5 x 0.4 mm) plastic lead (Pb) free package. The HWS504 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 PC card and access point applications as transmit/receive switch, antenna diversity switch, or band-selection switch.
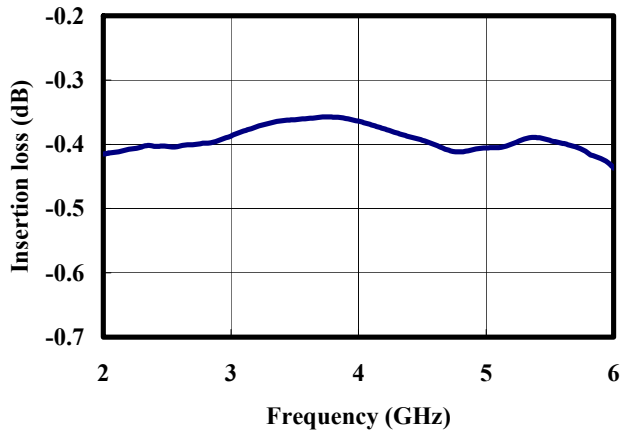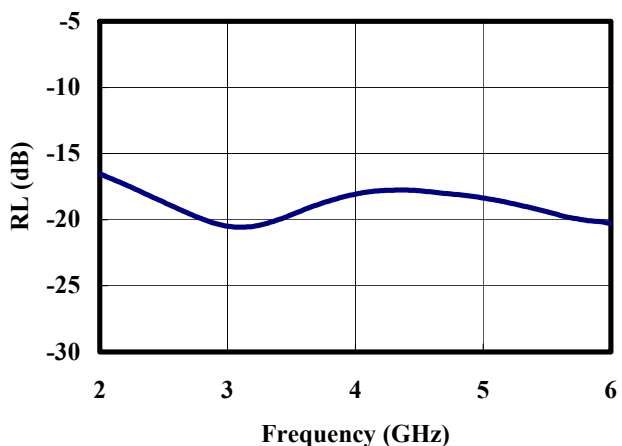
USON6L (1.5x1.5x0.4 mm)
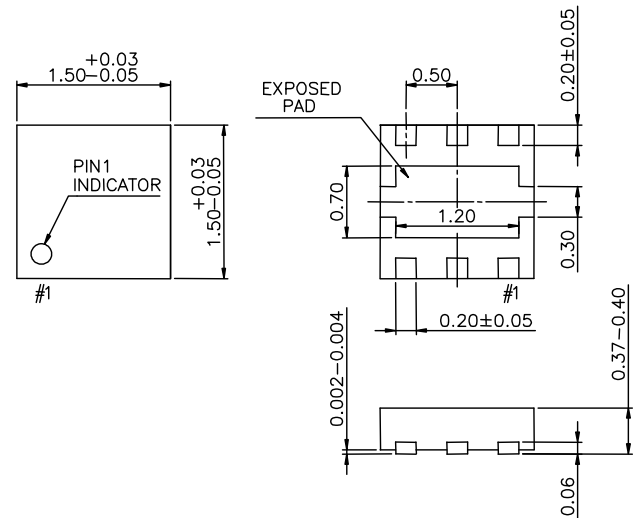
Unit: mm

Electrical Specifications at 25°C with 0, +3V Control Voltages
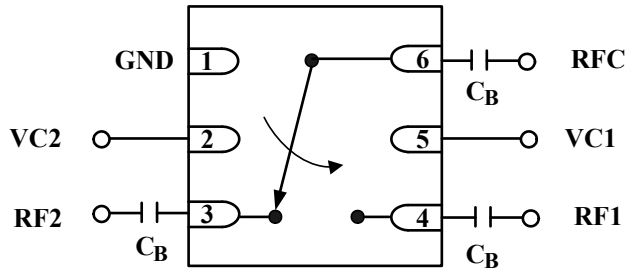
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	2.40-2.50 GHz 4.90-6.00 GHz		0.4 0.5	0.6 0.7	dB dB
Isolation	2.40-2.50 GHz 4.90-6.00 GHz	23 20	24 21		dB dB
Return Loss	2.40-2.50 GHz 4.90-6.00 GHz	15 15	18 18		dB dB
Input Power for One dB Compression	2.50 GHz @+3V 2.50 GHz @+5V 5.00 GHz @+3V 5.00 GHz @+5V		32 37 32 35		dBm dBm dBm dBm
Second and Third Harmonics	Pin=20 dBm		-75		dBc
Switching Time			50		nsec
Control Current			5	50	uA

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

Hexawave Inc.   2 Prosperity Road II, Science-Based Industrial Park, Hsinchu, Taiwan.   TEL 886-3-578-5100 FAX 886-3-577-0512

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Typical Performance Data with 8pFCapacitors @ +25°C

Insertion loss vs. Frequency

Output return loss vs, Frequency
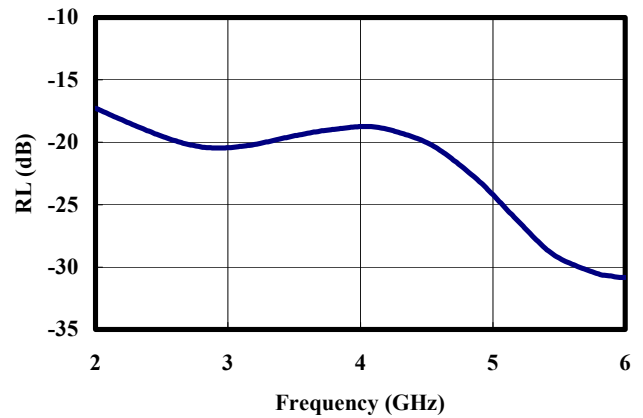
Isolation vs. frequency
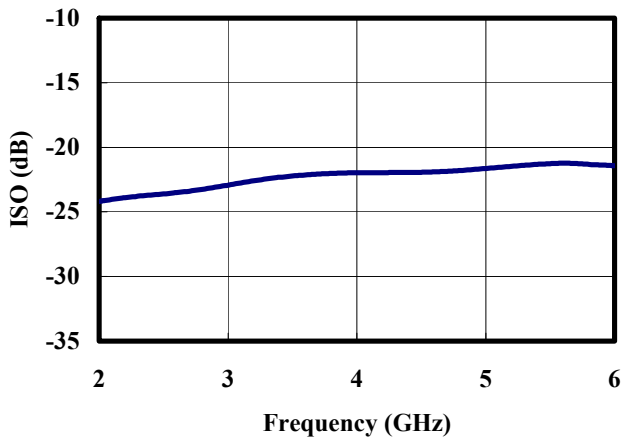
Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+37 dBm @ +5V
Control Voltage	+6V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Electrostatic discharge (ESD) Machine Model	Class M1

Input return loss vs. Frequency

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Pin Out (Top View)

Note:
1. DC blocking capacitors C_B=8pF are required on all RF ports.
2. 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	OFF	ON
0	1	ON	OFF

'1' = +3V to +5V
'0' = 0V to +0.2V

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