

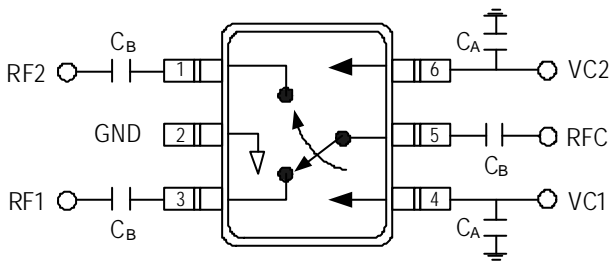
Features

- **Low Insertion Loss:** 0.45 dB @ 2.5 GHz
- **Isolation:** 25 dB @ 2.5 GHz
- **Low DC Power Consumption**
- **Low Cost SOT-363 Using Lead (Pb) free materials with RoHS compliant**
- **1.8V to 5.3V Operation**

Description

The HWS507 is a GaAs SPDT switch operating at 0.5-3 GHz in a low cost SOT-363 plastic lead (Pb) free package. The HWS507 can operate from 1.8V to 5.3V control voltage with low insertion loss and high isolation. This switch can be used in IEEE 802.11b/g WLAN systems for transmit/receive or antenna diversity functions.

Pin Out (Top View)

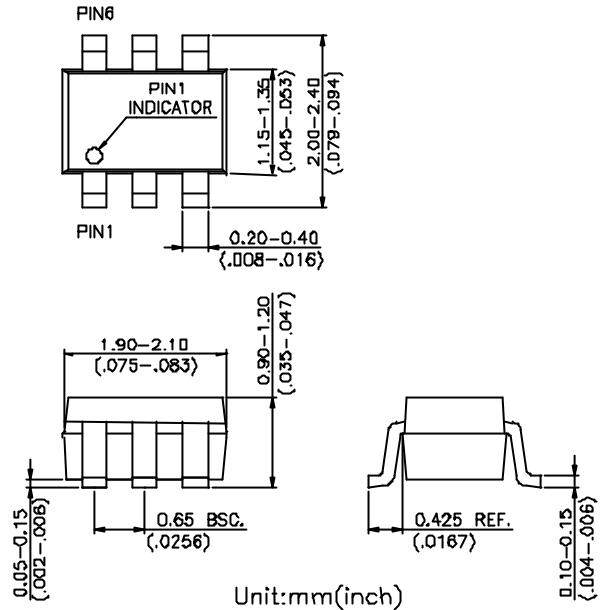


DC blocking capacitors C_B are required on all RF ports.
 $C_B=C_A=51\text{pF}$ for operating frequency > 500MHz.

Logic Table for Switch On-Path

| VC1 | VC2 | RFC-RF1 | RFC-RF2 |
|-----|-----|---------|---------|
| 1 | 0 | OFF | On |
| 0 | 1 | On | OFF |

SOT-363



Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-------------------------------|------------------|
| RF Input Power 0.5-2.5 GHz | +33 dBm |
| Control Voltage | +6V |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -65°C to +150°C |

Recommended Operating Conditions ($T_A=+25^\circ\text{C}$)

| Parameter | Min. | Typ. | Max. | Unit |
|---------------------|------|------|------|------|
| Control Voltage (1) | +1.8 | +3.0 | +5.3 | V |
| Control Voltage (0) | -0.2 | 0 | +0.2 | V |

Control Voltage(1) – Control Voltage(0) 1.8V

Electrical Specifications at 25° C with 0, +3.0V Control Voltages

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------------------|----------------------------------------------------------|------|------------|------------|------------|
| Insertion Loss | 0.5-3.0 GHz | | 0.45 | 0.60 | dB |
| | 0.5-1.0 GHz | | 0.45 | 0.60 | dB |
| | 1.0-2.0 GHz | | 0.40 | 0.55 | dB |
| | 2.0-3.0 GHz | | 0.45 | 0.60 | dB |
| Isolation | 0.5-3.0 GHz | 22 | 25 | | dB |
| | 0.5-1.0 GHz | 22 | 28 | | dB |
| | 1.0-2.0 GHz | 22 | 28 | | dB |
| | 2.0-3.0 GHz | 22 | 25 | | dB |
| Return Loss | 0.5-1.0 GHz | 10 | 13 | | dB |
| | 1.0-3.0 GHz | 13 | 16 | | dB |
| Input Power for One dB Compression | 0.5-3.0 GHz @ 0/+3.0V | | 32 | | dBm |
| 2nd Harmonics(2fo) | fo = 2.0 GHz, Pin = 15 dBm fo = 2.5 GHz, Pin = 15 dBm | | -60 -60 | -54 -54 | dBc dBc |
| 3rd Harmonics(3fo) | fo = 2.0 GHz, Pin = 15 dBm fo = 2.5 GHz, Pin = 15 dBm | | -63 -63 | -57 -57 | dBc dBc |
| Switching Time | 10% to 90%, 90% to 10% RF | | 500 | 1000 | ns |
| Control Current | | | 5 | 50 | uA |

Electrical Specifications at 25° C with 0, +1.8V Control Voltages

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------------------|--------------------------|------|------|------|------|
| Insertion Loss | 0.5-3.0 GHz | | 0.45 | 0.60 | dB |
| | 0.5-1.0 GHz | | 0.45 | 0.60 | dB |
| | 1.0-2.0 GHz | | 0.40 | 0.55 | dB |
| | 2.0-3.0 GHz | | 0.45 | 0.60 | dB |
| Isolation | 0.5-3.0 GHz | 22 | 25 | | dB |
| | 0.5-1.0 GHz | 22 | 28 | | dB |
| | 1.0-2.0 GHz | 22 | 28 | | dB |
| | 2.0-3.0 GHz | 22 | 25 | | dB |
| Return Loss | 0.5-1.0 GHz | 10 | 13 | | dB |
| | 1.0-3.0 GHz | 13 | 16 | | dB |
| Input Power for One dB Compression | 0.5-3.0 GHz @ 0/+1.8V | | 20 | | dBm |
| Switching Time | 10% to 90%,90% to 10% RF | | 120 | 200 | ns |
| Control Current | | | 5 | 50 | uA |

Note: All measurements made in a 50 Ohm system.

**Typical Performance Data @ +25° C
with 0, +3.0V Control Voltages**
**Typical Performance Data @ +25° C
with 0, +1.8V Control Voltages**
