

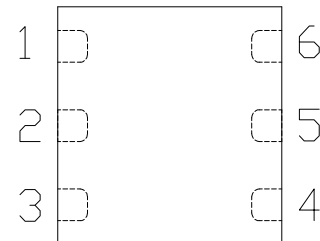


■ Features

- WLAN 802.11a/b/g/n/ac Applications
- Low Insertion Loss: 0.65dB @ 2.4~2.5GHz
0.80dB @ 4.9~6.0GHz
- High Isolation: 38dB @ 2.4~2.5GHz
30dB @ 4.9~6.0GHz
- DFN 1.5mmx1.5mm 6 Lead Green Package
- 1KV ESD Capability (HBM)
- Low Cost and Good Reliability Performance

■ Pin Functional Schematic and Assignment

(Top View)



■ General Description

The GW2162-A is a MMIC DPDT switch in a DFN 1.5mmx1.5mm 6 lead plastic package. The GW2162-A features low insertion loss, high isolation and positive voltage operation with 2 controls. Typical applications are for IEEE WLAN 802.11 a/b/g/n/ac system or systems operating up to 6.0GHz that employs two antennas for transmit and receive diversity.

| Pin No. | Pin Name | Description |
|---------|----------|-------------------|
| 1 | ANT2 | Antenna Port 2 |
| 2 | VC2 | Voltage Control 2 |
| 3 | OUT2(Rx) | Receive Port |
| 4 | OUT1(Tx) | Transmit Port |
| 5 | VC1 | Voltage Control 1 |
| 6 | ANT1 | Antenna Port 1 |

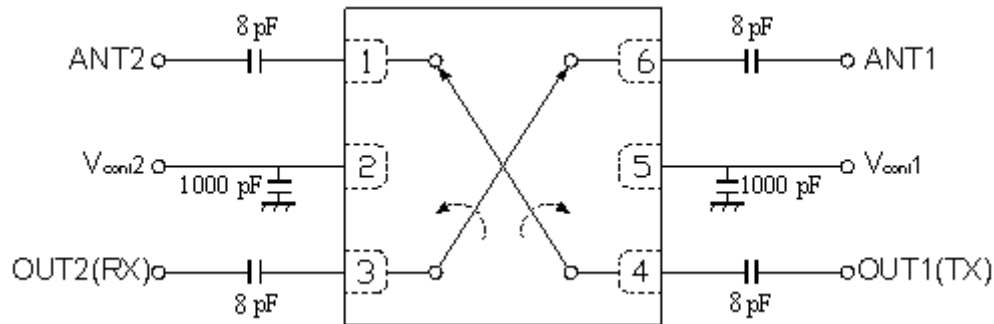
■ Electrical Specifications at 25°C with (0, +3.0V) Control Voltages, 8pF Capacitor

| Parameter | Test Conditions | Min | Typ. | Max. | Unit |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----|------------------------|------|------|
| Insertion Loss | 2.4 - 2.5 GHz | - | 0.65 | 0.80 | dB |
| | 4.9 - 6.0 GHz | - | 0.80 | 0.95 | dB |
| Isolation (ANT1 to Tx , ANT1 to Rx , ANT2 to Tx , ANT2 to Rx) | 2.4 - 2.5 GHz | 35 | 38 | - | dB |
| | 4.9 - 6.0 GHz | 27 | 30 | - | dB |
| Isolation (ANT1 to ANT2, Tx to Rx) | 2.4 - 2.5 GHz | 27 | 32 | - | dB |
| | 4.9 - 6.0 GHz | 22 | 26 | - | dB |
| Input/Output Return Loss | 2.4 - 2.5 GHz | - | 15 | - | dB |
| | 4.9 - 6.0 GHz | - | 15 | - | dB |
| Input Power for 1 dB compression | 2.4 - 2.5 GHz | - | +31 | - | dBm |
| | 4.9 - 6.0 GHz | - | +31 | - | dBm |
| Second Harmonics | 2.5 GHz, P _{IN} = 20dBm | - | -70 | - | dBc |
| Third Harmonics | 2.5 GHz, P _{IN} = 20dBm | - | -70 | - | dBc |
| Switching Rise Time Switching Fall Time Switching On Time Switching Off Time | 10/90% RF 90/10% RF 50% CTL to 10/90% RF 50% CTL to 90/10% RF | - | 80 60 120 120 | - | ns |
| Control Current | Input Power 0dBm | - | 8 | - | μA |

Notes: All measurements made in 50Ω system, unless otherwise specified.



■ Evaluation Circuit



■ Truth Table

| Vcont1 | Vcont2 | ANT1-OUT1(TX) | ANT1-OUT2(RX) | ANT2-OUT1(TX) | ANT2-OUT2(RX) |
|--------|--------|-------------------------|-------------------------|-------------------------|-------------------------|
| High | Low | OFF (Isolation) | ON (Insertion Loss) | ON (Insertion Loss) | OFF (Isolation) |
| Low | High | ON (Insertion Loss) | OFF (Isolation) | OFF (Isolation) | ON (Insertion Loss) |

■ Recommended Operating Conditions

| Parameter | MIN. | MAX. | Unit |
|------------------------|------|------|------|
| Control Voltage (High) | +1.6 | +3.5 | V |
| Control Voltage (Low) | 0 | +0.4 | V |
| Operating frequency | 0.1 | 6.0 | GHz |

■ Absolute Maximum Ratings

| Parameter | Absolute Maximum | Unit |
|------------------------|------------------|------|
| Switch Control Voltage | +3.6 | V |
| Max input Power | 32 | dBm |
| Operating Temperature | -40 to +85 | °C |
| Storage Temperature | -40 to +125 | °C |

Operational exceeding any one of these limits may cause permanent damage to this device.



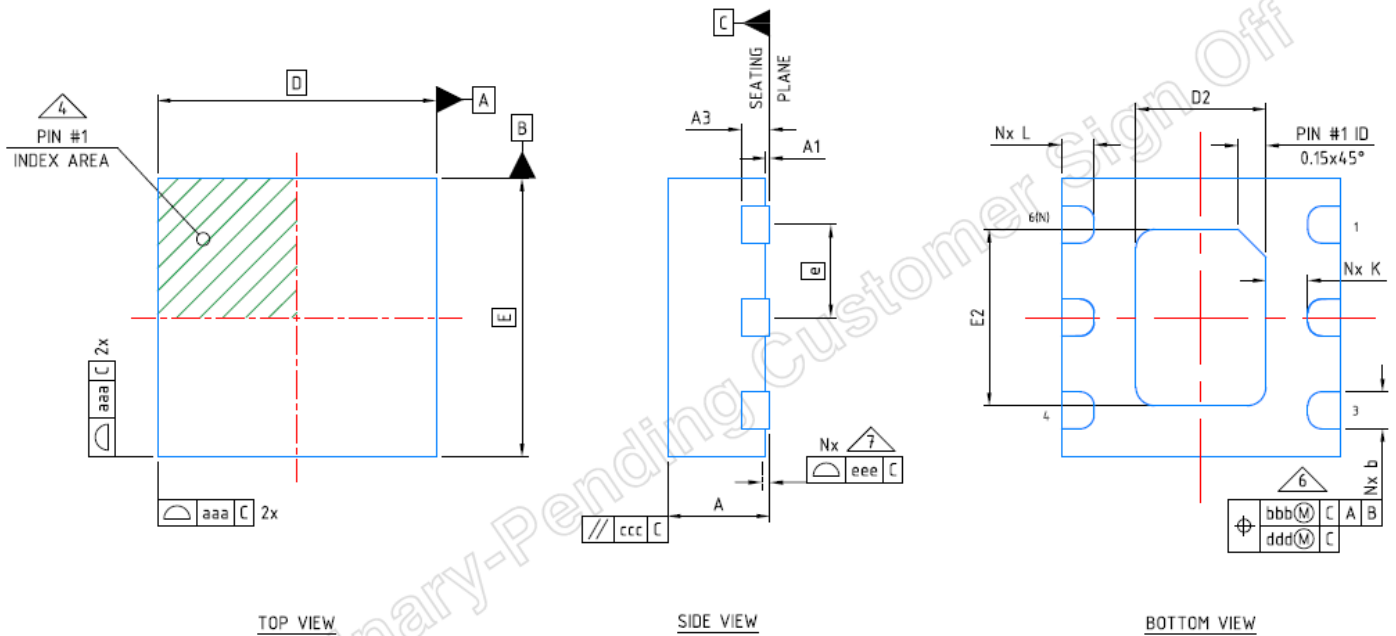
GW2162-A

DPDT Diversity Switch 0.1~6.0GHz for WLAN

Ver. 1.1

DFN 1.5mmx1.5mm 6Lead Package Dimensions (Unit: mm)

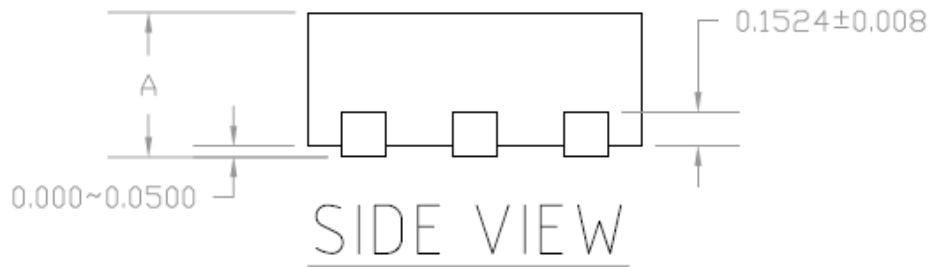
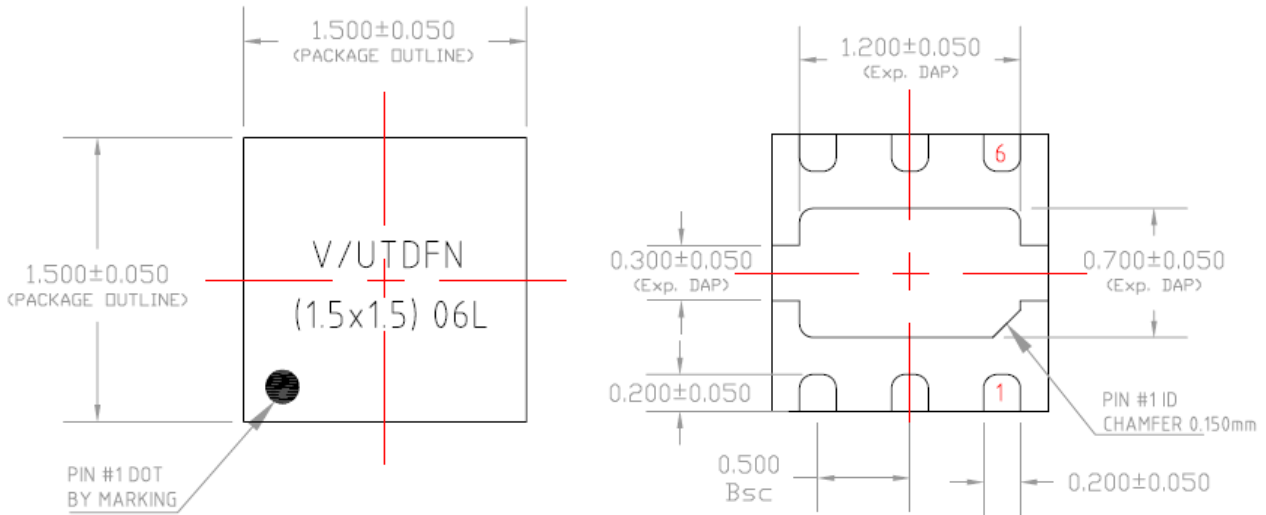
Type A (UT):



| Dimension Table | | | | |
|------------------|----------|----------|---------|------|
| Thickness Symbol | UT | | | NOTE |
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | 0.51 | 0.55 | 0.60 | |
| A1 | 0.00 | 0.02 | 0.05 | |
| A3 | --- | 0.15 Ref | --- | |
| b | 0.15 | 0.20 | 0.25 | 6 |
| D | 1.50 BSC | | | |
| E | 1.50 BSC | | | |
| e | 0.50 BSC | | | |
| D2 | 0.55 | 0.70 | 0.80 | |
| E2 | 0.80 | 0.95 | 1.05 | |
| K | 0.15 | --- | --- | |
| L | 0.125 | 0.175 | 0.225 | |
| aaa | 0.05 | | | |
| bbb | 0.10 | | | |
| ccc | 0.10 | | | |
| ddd | 0.05 | | | |
| eee | 0.08 | | | |
| N | 6 | | | 3 |
| NE | 3 | | | 5 |
| NOTES | 1, 2 | | | |



■ DFN 1.5mm×1.5mm 6Lead Package Dimensions (Unit : mm)
Type B (UTDFN):



| | | UTDFN |
|---|------|-------|
| A | MAX. | 0.550 |
| | NOM. | 0.500 |
| | MIN. | 0.450 |



■ Recommended Soldering Conditions

This product should be mounted and soldered under the following recommended conditions. For soldering methods and conditions other than those recommended below, contact your nearby sales office.

| Soldering Method | Soldering Conditions | Rating |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Infrared Reflow | Peak temperature (package surface temperature) Time at peak temperature Time at temperature of 200 °C or higher Preheating time at 120 to 180 °C Maximum number of reflow processes Maximum chlorine content of rosin flux (%mass) | 260 °C or below 10 seconds or less 60 seconds or less 120±30 seconds 3 times 0.2%(Wt.) or below |
| Wave Soldering | Peak temperature (molten solder temperature) Time at peak temperature Preheating temperature (package surface temperature) Maximum number of flow processes Maximum chlorine content of rosin flux (%mass) | 260 °C or below 10 seconds or less 120 °C or below 1 times 0.2%(Wt.) or below |
| Partial Heating | Peak temperature (terminal temperature) Soldering time (per side of device) Maximum chlorine content of rosin flux (%mass) | 350 °C or below 3 seconds or less 0.2%(Wt.) or below |

Caution Do not use different soldering methods together (except for partial heating).