

## TILT SENSOR SWITCH

|          |           |             |              |              |   |
|----------|-----------|-------------|--------------|--------------|---|
| Item No. | RBS200112 | Description | Ball-Contact | Version      | 3 |
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### ● FUNCTIONS

20°Tilt Detecting for 4 directions in horizontal mode.

### ● APPLICATIONS

1. Automatically shut off for home appliances.
2. Automatically shut off for Sporting equipment.
3. Alarm system.
4. Anti-theft / Anti-tamper devices.
5. Being motion detection (personal locator).



### ● FEATURES

1. Suitable for horizontal PCB.
2. Switch State: DIP Normal Open.
3. Tiny size, suitable for small space.
4. Gold-plated ball and terminals, low possibility of oxidization.
5. Housing made of high insulation plastic material, free from electric conduction and rust problem.
6. All plastic materials subject to industrial purpose, resist high temperature and meet fireproof function.
7. Simple ON and OFF signals, easy for design.
8. Low price solution.
9. Almost zero consume for energy-saving demand.
10. RoHS compliance, an ideal substitute for mercury switch.
11. A more economical tilt and vibration detection option than IC design solution.
12. All made in Taiwan and examined before shipment.

### ● PATENTS

1. Taiwan Patent No. I 239025
2. U.S.A. Patent No. US 7,045,724 B1
3. China Patent No. ZL 200410091589.7
4. China Patent No. 201220308500.8

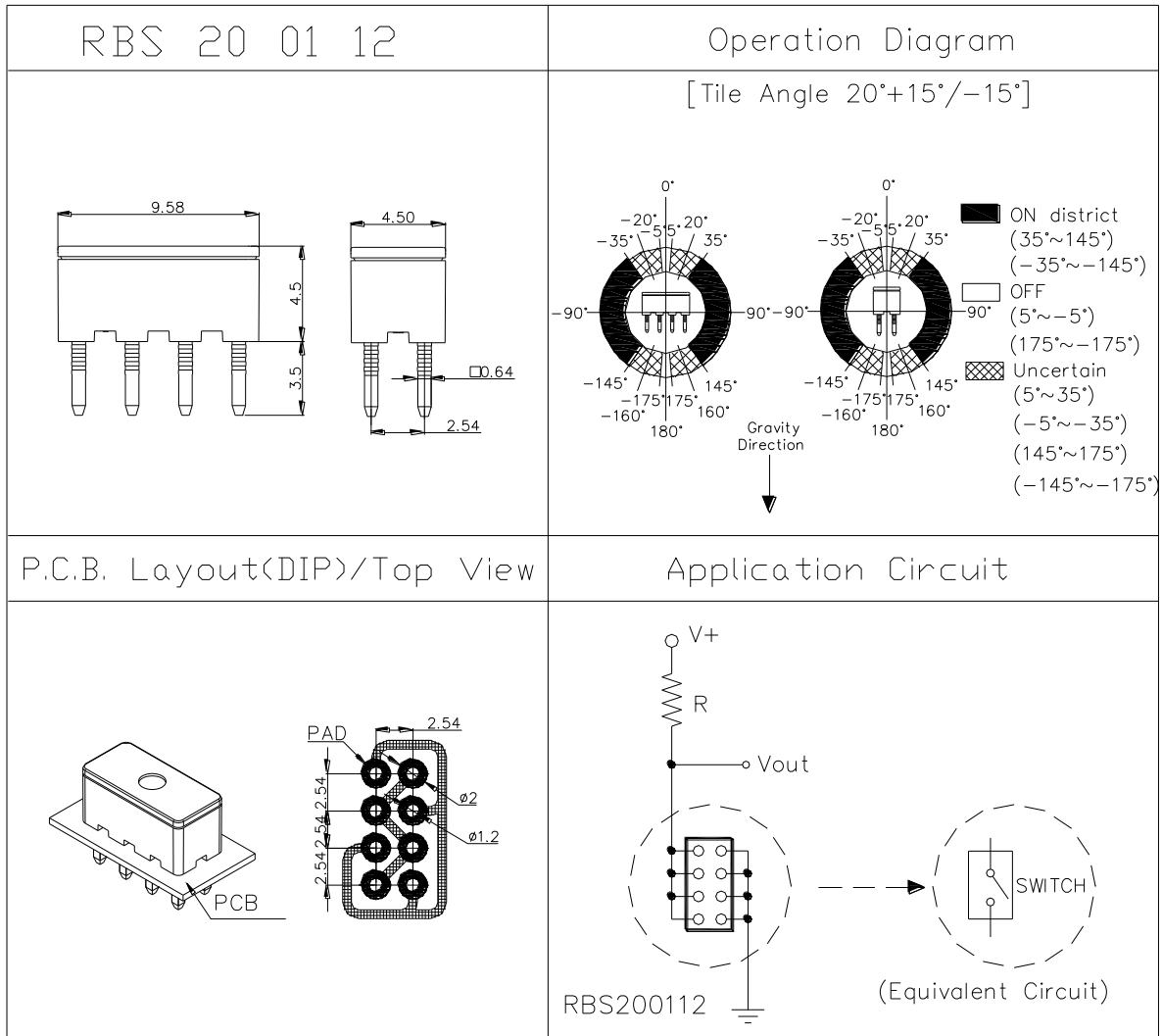


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● DIMENSIONS / OPERATION / P.C.B. LAYOUT (Unit: mm, Tolerance:  $\pm 0.25$ mm)

Fig. 1



## TILT SENSOR SWITCH

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● Current/Voltage Suggested

| Input Current (mA) | Operating Voltage (V) | Condition |
|--------------------|-----------------------|-----------|
| 1.0                | 5                     | --        |

● ELECTRICAL CHARACTERISTICS

|   |                       |                        |
|---|-----------------------|------------------------|
| 1 | Contact Rating        | 10 mA, 5 VDC           |
| 2 | Contact Resistance    | 10 Ω max.              |
| 3 | Differential Angle    | Refer to Fig. 1        |
| 4 | Insulation Resistance | 1000 MΩ min., 100 VDC  |
| 5 | Dielectric Strength   | 500 VDC min., 1 minute |
| 6 | Capacitance           | 5 pF max.              |
| 7 | Conductive Rate:      | 98% min.               |

● RELIABLE TEST ITEMS

Reliable Test for RBS200112

|   | Test Item             | Contents                           |
|---|-----------------------|------------------------------------|
| 1 | Operating Temperature | -25°C ~ 85°C                       |
| 2 | Storage Temperature   | -40°C ~ 85°C                       |
| 3 | Humidity              | 40 °C / 95 %RH                     |
| 4 | Mechanical Life       | 2 Hz horizontal<br>1,000,000 times |
| 5 | Electrical Life       | 100,000 times                      |



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### ● SOLDERING CONDITION

Following soldering conditions are for reference only, please use soldering information that solder paste manufacturer recommends.

| Condition                   | Soldering Temperature | Soldering Time   | Wattage of Manual Soldering                    | Type |
|-----------------------------|-----------------------|------------------|--|------|
| Suitable Production Process |                       |                  |  |      |
| Wave Soldering              | 260±5°C               | < 5 seconds max. | -  | DIP  |
| Manual Soldering            | 300±5°C               | < 3 seconds max. | 30W or Temperature-controlled manual soldering | DIP  |

### ● PACKAGE

|    | Part Number | Package   | Quantity   | Total Quantity | Dimension(mm)  |
|----|-------------|-----------|------------|----------------|----------------|
| 1. | RBS200112   | PE bag    | 500 pcs    | 500 pcs        | 127L*178W      |
|    |             | Inner box | 10 PE bags | 5,000 pcs      | 348L*191W*85H  |
|    |             | Carton    | 3 Boxes    | 15,000 pcs     | 364L*278W*213H |

※ Package shown as below for reference.



PE bag



Inner box



Carton



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### ● NOTES

1. Suggestion for usage: For vibration usage or application, we suggest to add hysteresis for IC; if vibration is heavy, optical type of sensor switch is recommended.
2. For the continued product improvement as one of the company policy, specifications may change or update without notice. The latest information can be obtained through our sales offices. Normally, all products are supplied under our standard conditions.
3. If buyer's products will stay in power supply for a long time which needs very high stability, optical sensor switch is strongly recommended.

### ● PRECAUTIONS FOR USE

1. If the products are intended to be used for other endurance equipment requiring higher safety and reliability such as life support system, space and aviation devices, disaster and safety system, it's necessary to make verification of conformity or contact us for the details before using.
2. Do not try to clean the switch with a solvent or similar substance after the soldering process.
3. Use water-soluble flux may damage the switch.
4. Please follow the soldering instruction accordingly, otherwise might lead to defective.
5. Do not use switch in the environment of high humidity, because such an environment may cause the leakage current between the terminals.
6. Please do not exceed the rated load as there will be a risk of disabling the product function.
7. In the circuit, switch should not be near or directly connected with the magnetic component solder joints (for example: relays, transformers, etc.).



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