

Vibration Sensor Switch

Item No.	VBS021001	Description	Ball-Contact	Version	1
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● FUNCTIONS

1. Centrifugal Force Detecting
2. Single Axis Vibration Detecting

● APPLICATIONS

1. Step counters
2. Tire Pressure Monitoring System (TPMS)
3. Laser marker
4. Toys



● FEATURES

1. Suitable for horizontal and vertical 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. Use of high quality springs, vibration sensitivity is good.
6. Using the technology of insert molding to withstand the force between the base and the terminal.
7. All plastic materials subject to industrial purpose, resist high temperature and meet fireproof function.
8. Simple ON and OFF signals, easy for design.
9. Suitable for IC trigger for signal.
10. RoHS compliance, an ideal substitute for mercury switch.
11. All made in Taiwan and examined before shipment.



Vibration Sensor Switch

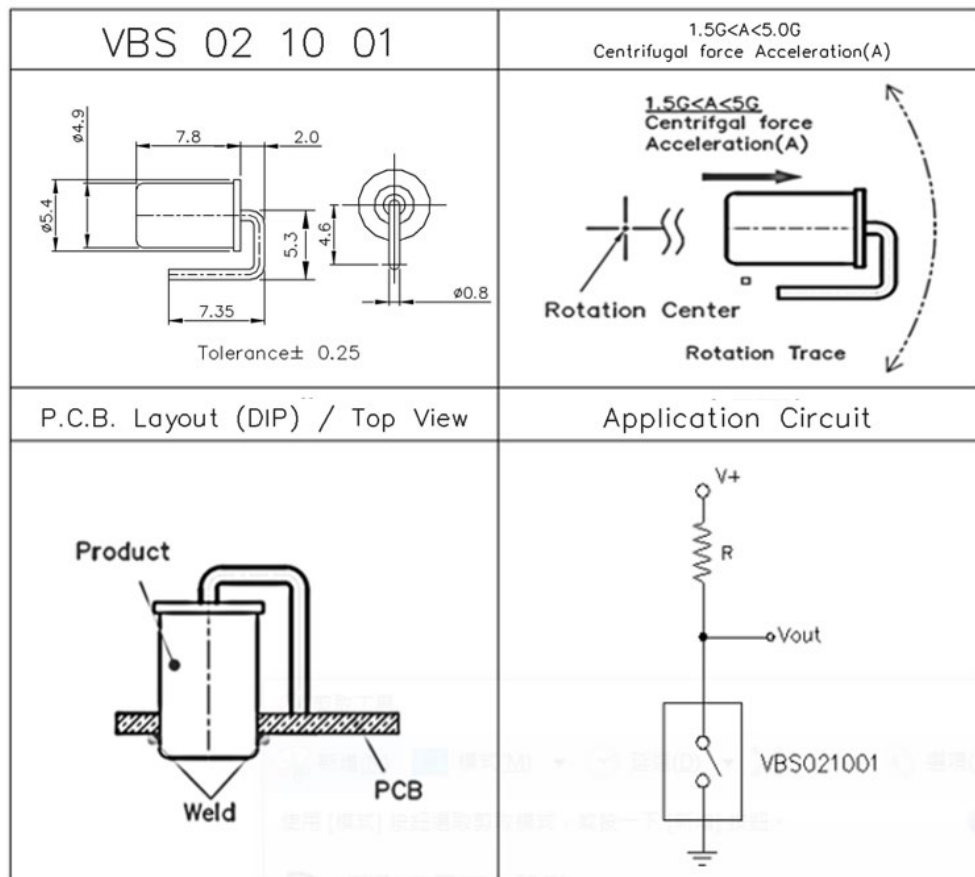
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● PATENTS

1. U.S.A. Patent No. US 6,555,772 B1
2. U.S.A. Patent No. US 7,332,685 B1
3. China Patent No. ZL01259628.0
4. Taiwan Patent No. I 181432

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

Fig. 1



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● **Current/Voltage Suggested**

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

● **ELECTRICAL CHARACTERISTICS**

1.	Maximum Contact Current	10 mA
2.	Contact Resistance	10 Ω max.
3.	Operation Diagram	Refer to Fig. 1
4.	Insulation Resistance	1000 M Ω min., 100 VDC
5.	Dielectric Strength	500 VDC min., 1 minute
6.	Capacitance	5 pF max.



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● RELIABLE TEST ITEMS

Reliable Test for VBS021001

	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	2Hz, horizontal 1,000,000 times
5	Electrical Life	100,000 times

Note: The centrifugal force acceleration(A) value is tested after the end of the operating temperature 、 the storage temperature and the humidity test.

● SOLDERING CONDITION

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

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



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● PACKAGE

	Part Number	Package	Quantity	Total	Dimension (mm)
1.	VBS021001	PE bag	1,000 pcs	1,000 pcs	205L*145W
		Inner box	10 PE bags	10,000 pcs	348L*191W*85H
		Carton	3 Boxes	30,000 pcs	364L*278W*213H

※ Package shown as below for reference.



PE bag

Inner box

Carton



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● NOTE

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 is 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.).

