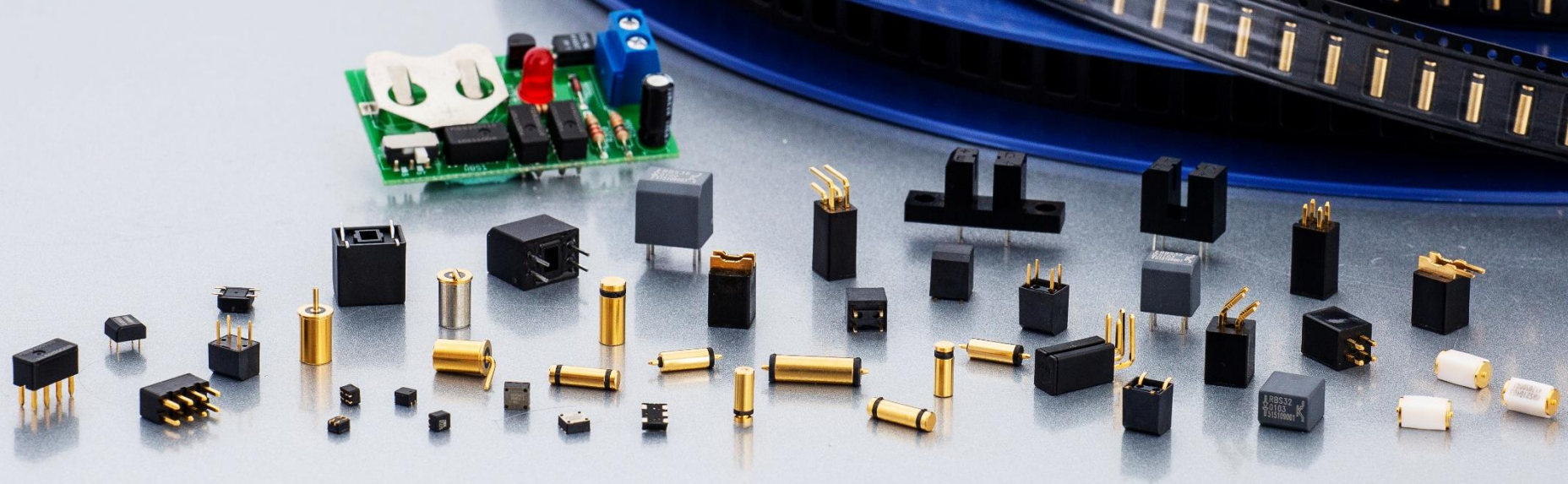
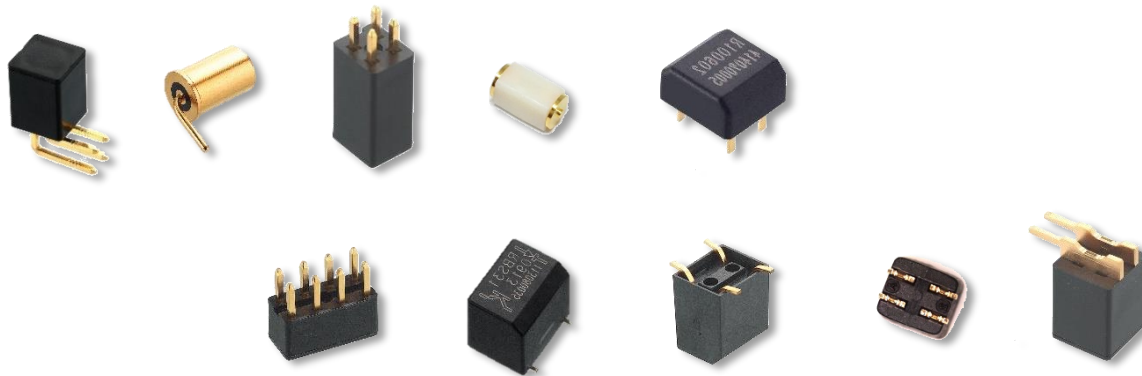


OncQue®

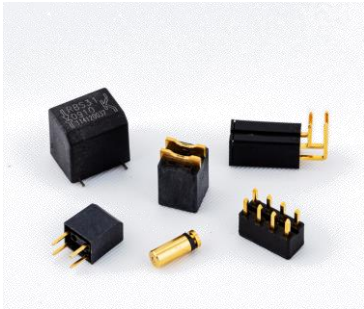


Roll Ball Sensor Switch

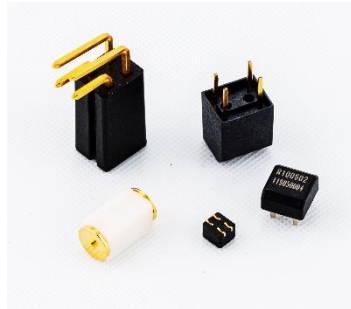
- Replacement for mercury switch
- Simple ON/OFF signal
- Easy for design
- Trigger function depends on how customer designs



Product Range



Tilt Detection



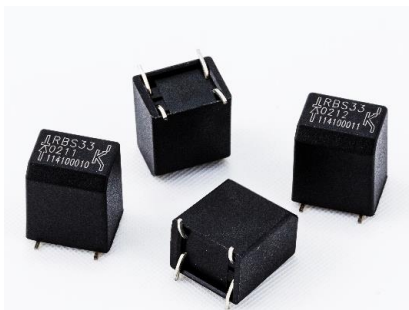
Vibration Detection



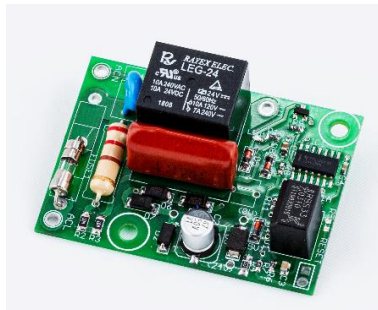
Rotation Detection



Centrifugal-force Detection



Optical Tilt Detection



Module Design

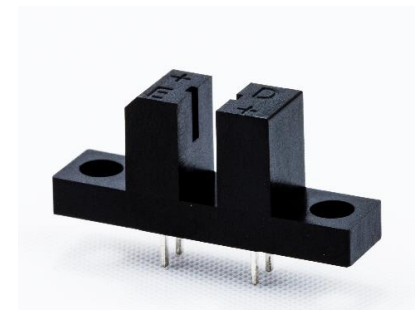
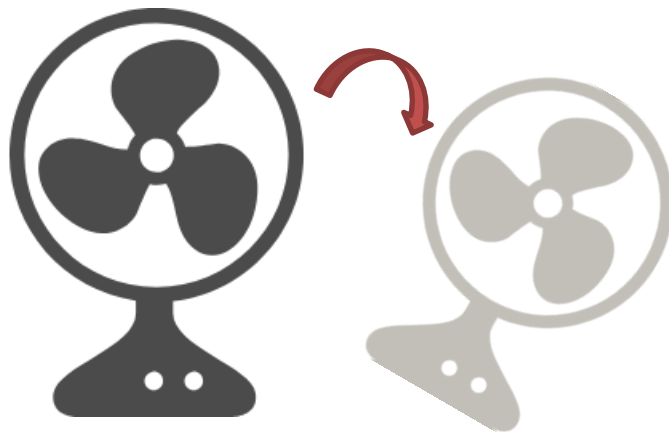


Photo Interrupter

Product Application

- **Automatically shut off**

For home appliance e.g. heater, air-purifier, dehumidifier, humidifier, fans, irons etc. While the angle changes (or not moving), the device will be turn off automatically to prevent danger.



ON

OFF



RBS050300, RBS070310, RBS070410, RBS310910T,
RBS311104, RBS311110, RBS330210T

While using



ON

After not moving for a while



OFF

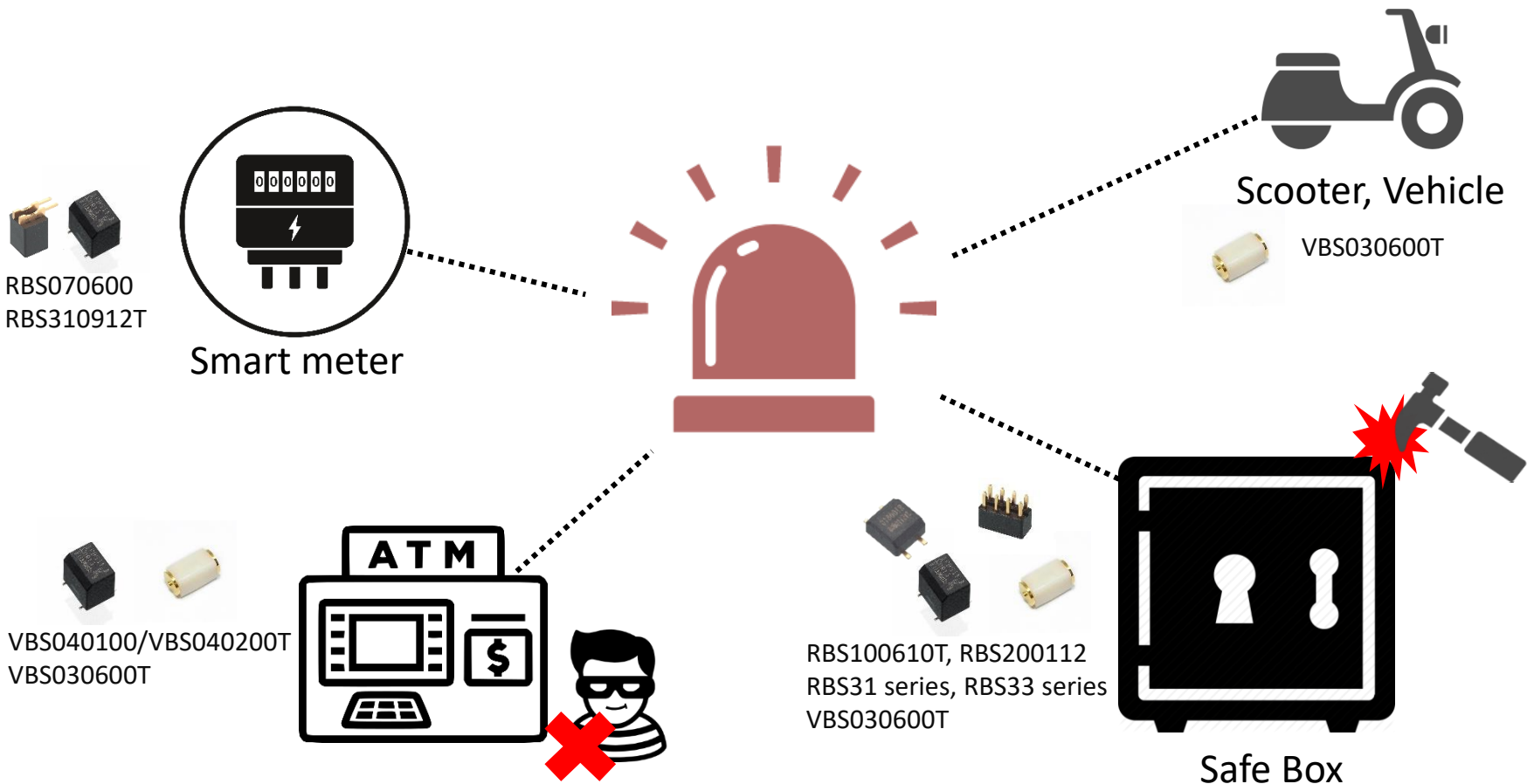


RBS020902

Product Application

- Anti-theft/Anti-tamper

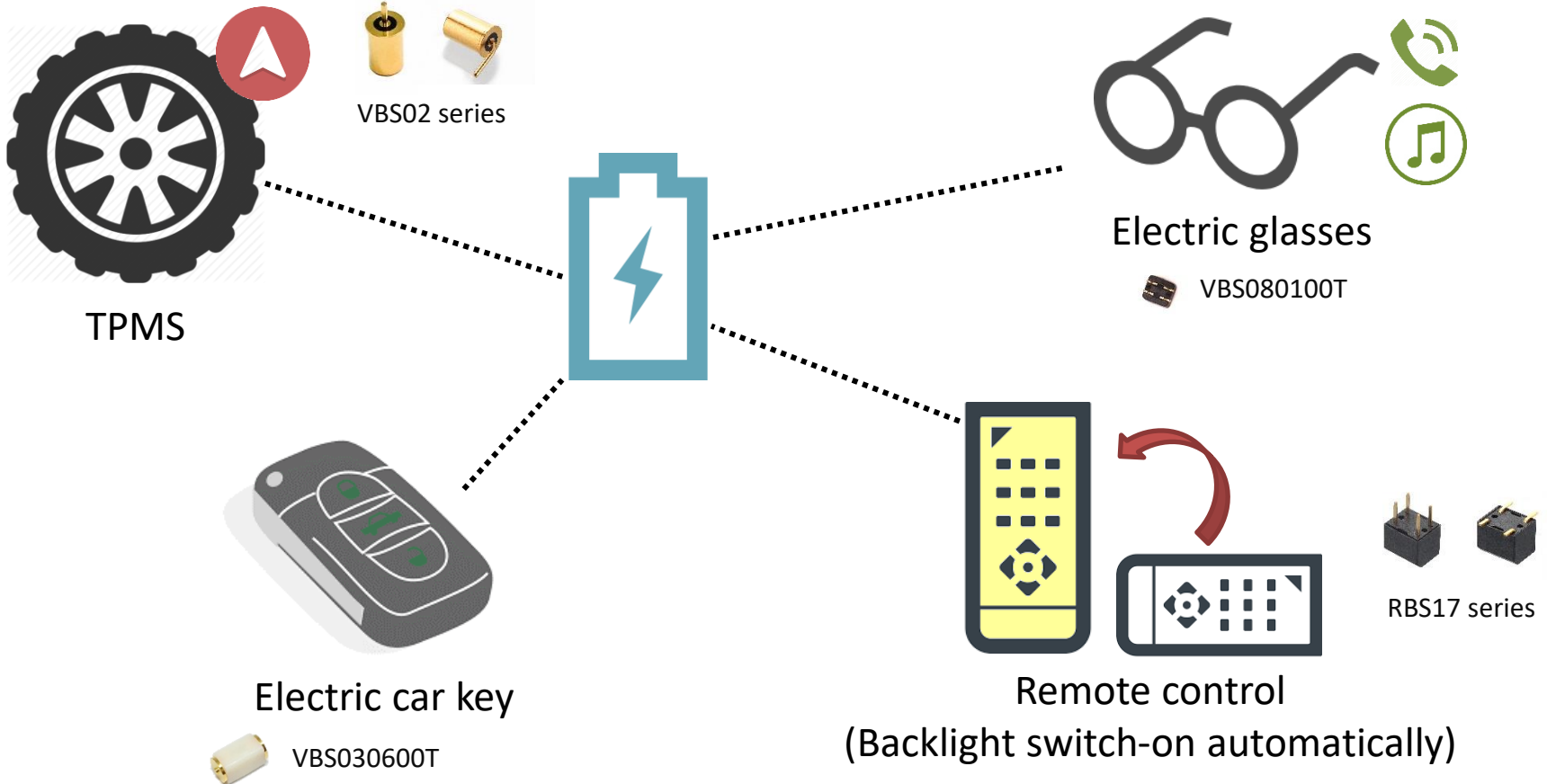
For safe box, ATM, vehicle/motorcycle/bike, smart meter, etc. When detecting vibration or shock, the alarm will be triggered, or send signal to server.



Product Application

- Power saving

For TPMS, GPS, remote controller, electric car key, bike accessories, etc. Detecting vibration, centrifugal force or angle changes in order to wake up the system.



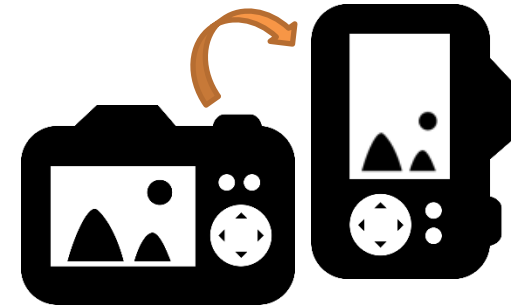
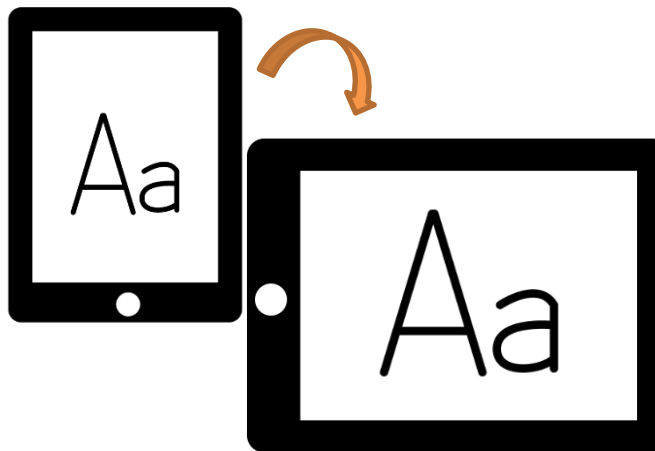
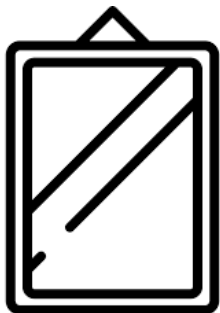
Product Application

- Screen rotation

For monitors, portable 3C products or smart mirror, etc.



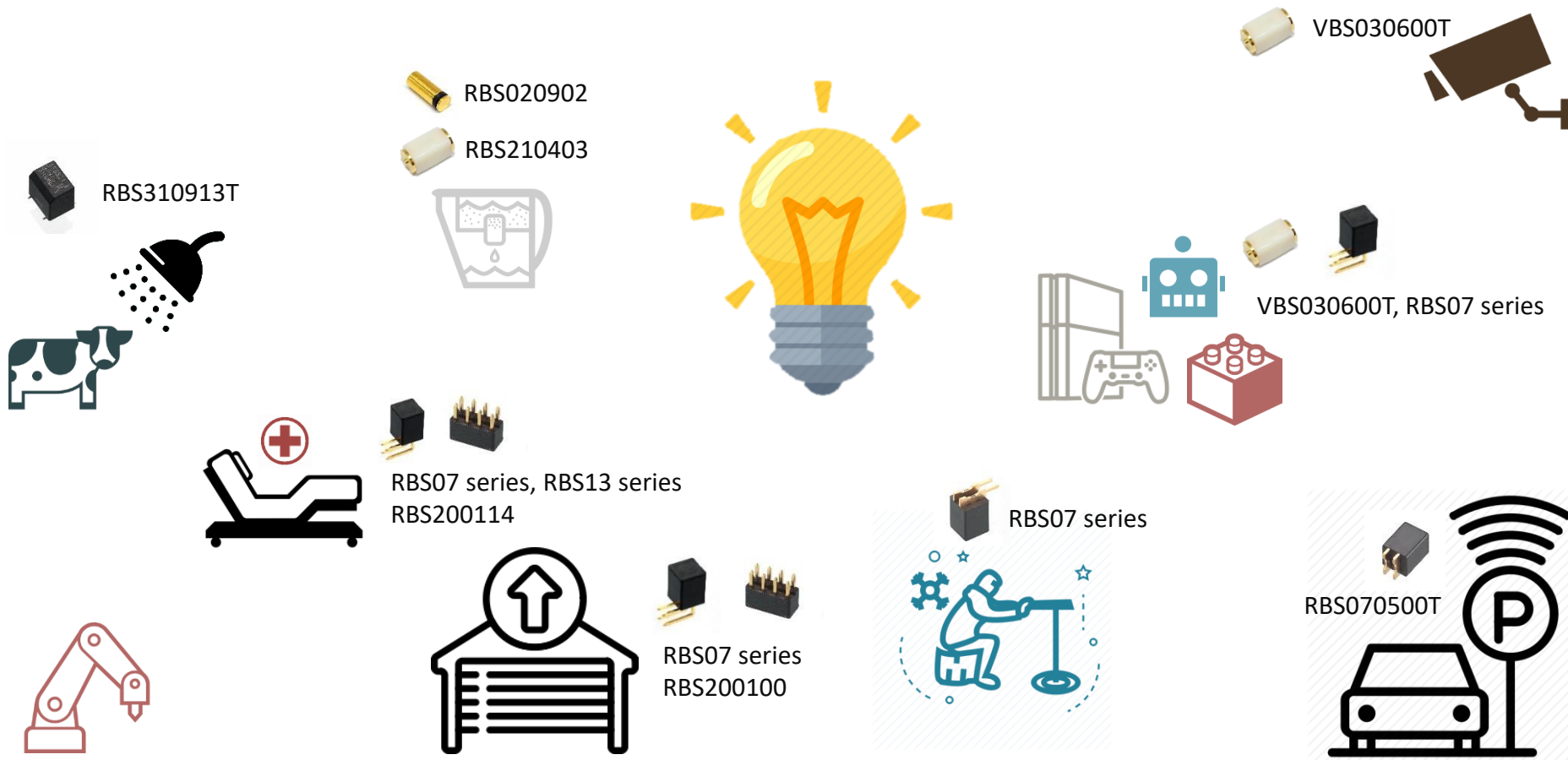
RBS13 series, RBS100601/RBS100611T, RBS350100T



Product Application

● Others

Smart parking system, Garage door open/close detecting, filter cartridge life-cycle detecting, smart fishing tackle, new animal husbandry equipment, LED Driver, toys, entertainment devices, heating pad, Medical bed, automation equipment, etc.



Design & Made in Taiwan!

Liability
Insurance

USD 5 million



Patent

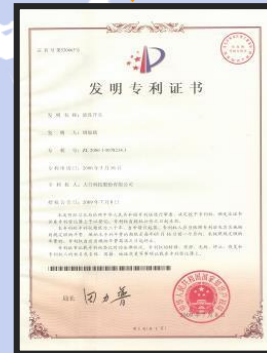
USA



Europe



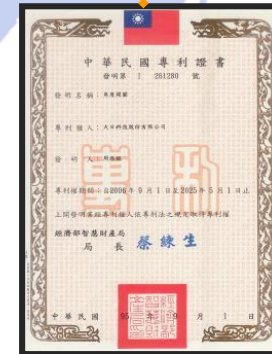
China



Japan



Taiwan



Over 157 patents
including 149 patents of
Sensor Switch products



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	1 of 7		Publish Date	Jun. 26, 2018	

● **FUNCTIONS**

1. Horizontal Tilt Detecting
2. Vertical Up-Side Down Detecting

● **APPLICATIONS**

1. Position Detection for Iron
2. Lighting system for night time while car hold being opened
3. Toys, Entertainment Device

● **FEATURES**

1. Suitable for horizontal PCB.
2. Switch state: DIP Normal Close.
3. Housing made of high insulation plastic material, free from electric conduction and rust problem.
4. Gold-plated ball and terminals, low possibility of oxidization.
5. All plastic materials subject to industrial purpose, resist high temperature and meet fireproof function.
6. Simple ON and OFF signals, easy for design.
7. RoHS compliance, an ideal substitute for mercury switch.
8. A more economical tilt and rotation detection option than IC design solution.
9. All made in Taiwan and examined before shipment.



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	2 of 7		Publish Date	Jun. 26, 2018	

● PATENTS

1. Taiwan Patent No. 155965
2. Taiwan Patent No. 476797
3. U.S.A. Patent No. US 6,198,059 B1
4. U.S.A. Patent No. US 7,256,360 B1
5. U.S.A. Patent No. US 7,446,272 B2
6. U.S.A. Patent No. US 9,058,945 B2
7. China Patent No. 201220308500.8
8. China Patent No. 201210218323.9

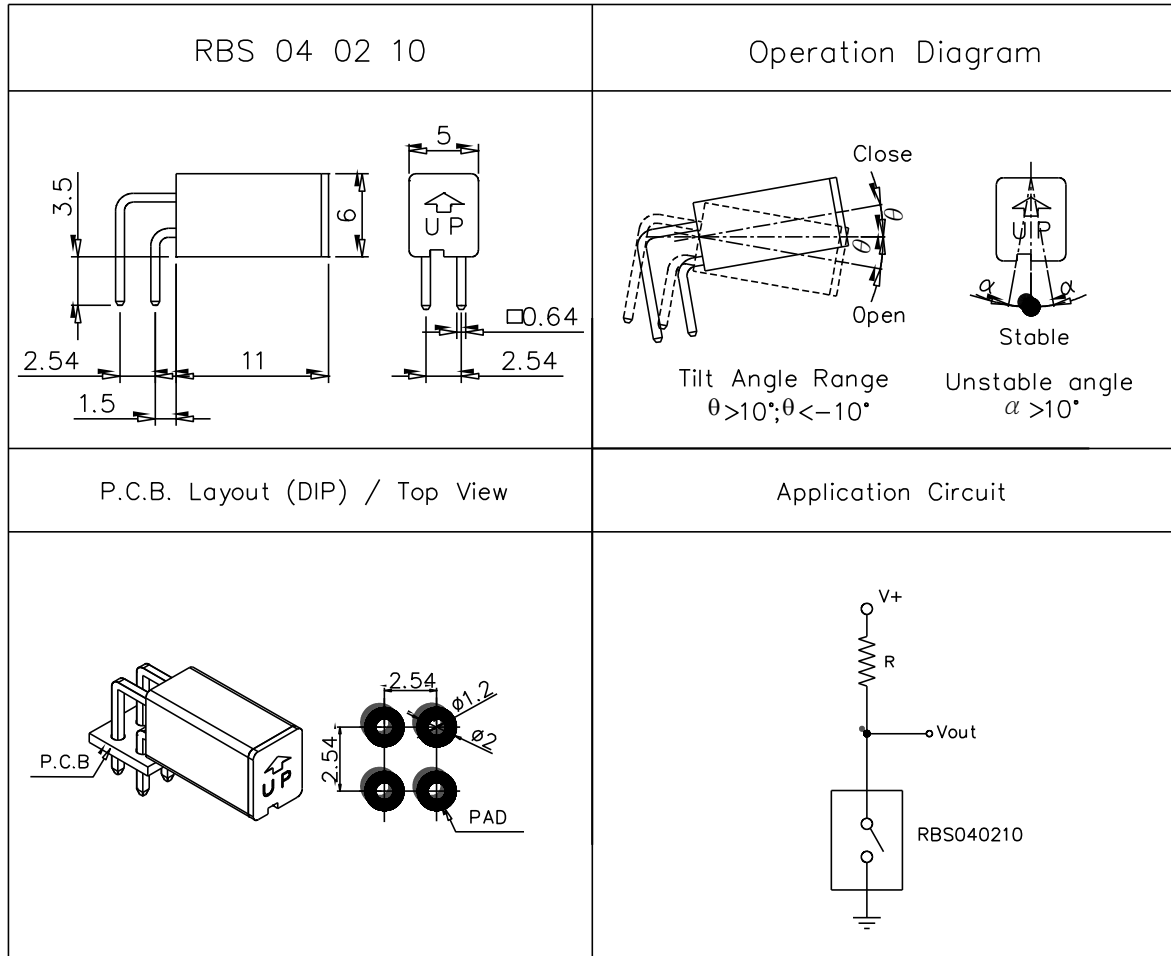


Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	3 of 7		Publish Date	Jun. 26, 2018	

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

Fig. 1



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	4 of 7		Publish Date	Jun. 26, 2018	

● Current/Voltage Suggested

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

● ELECTRICAL CHARACTERISTICS

1.	Contact Rating	10 mA, 5VDC
2.	Contact Resistance	10 Ω max.
3.	Operation Diagram	Refer to Fig. 1
4.	Insulation Resistance	1000 MΩ min., 100 VDC
5.	Dielectric Strength	500 VDC min., 1 minute
6.	Capacitance	5pF max.
7.	Conductive Rate	90% min.



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	5 of 7		Publish Date	Jun. 26, 2018	

● RELIABLE TEST ITEMS

Reliable Test for RBS040210

	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 1,000,000 times
5	Electrical Life	100,000 times

● 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



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	6 of 7		Publish Date	Jun. 26, 2018	

● PACKAGE

	Part Number	Package	Quantity	Total	Dimension (mm)
1.	RBS040210	PE Bag	500 pcs	500 pcs	205L*145W
		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.



Tilt Sensor Switch

Item No.	RBS040210	Description	Ball-Contact	Version	11
Page	7 of 7		Publish Date	Jun. 26, 2018	

● 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. Please follow the soldering instruction accordingly, otherwise might lead to defective.
4. Use water-soluble flux may damage the switch.
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.).

