OncQue™

OncQue Corporation
大日科技股份有限公司

TILT SENSOR SWITCH

Item No.	RBS100610T	Description	Ball-Contact	Version	19
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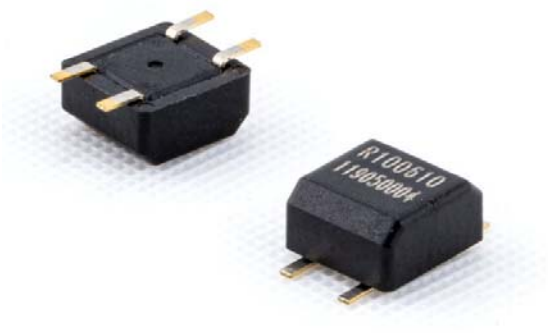
● FUNCTION

25° Tilt Detecting for 4 Directions in horizontal position.

● APPLICATIONS



1. Wake up systems for power saving, such like remote controllers
2. Automatically shut off for home appliances
3. Automatically shut off for Sporting equipment
4. Alarm system
5. Anti-theft / Anti-tamper devices
6. Being motion detection (personal locator)

● FEATURES

1. Suitable to use for horizontal PCB.
2. Switch State: SMD Normal open.
3. Small size & compact space.
4. Housing made of high insulation plastic material, free from electric conduction and rust problem.
5. Terminals and balls are gold plated to enhance the life.
6. All plastic material subject to industrial purpose meets high temperature and fireproof function.
7. Simple switch signal, easy for circuit design.
8. Comply with RoHS, complete replacement of mercury switch and meet environmental protection.
9. More economic than IC design.
10. All made in Taiwan and examined before shipment.

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● PATENTS

1. Taiwan Patent No. I 239025
2. Taiwan Patent No. I 261280
3. Taiwan Patent No. M 455971
4. Taiwan Patent No. I 505313
5. U.S.A. Patent No. US 7,045,724 B1
6. U.S.A. Patent No. US 7,473,857 B2
7. U.S.A. Patent No. US 8,969,747 B2
8. China Patent No. CN 1779878 A
9. China Patent No. CN 101075510 A
10. China Patent No. CN 202977286 U
11. China Patent No. CN 103854918 A

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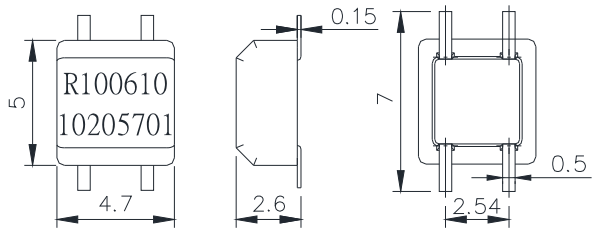
● DIMENSIONS / OPERATION / P.C.B. LAYOUT (Unit: mm, Tolerance: ±0.25mm)

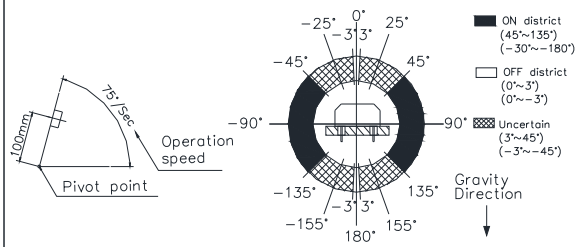
Fig. 1

RBS 10 06 10 T

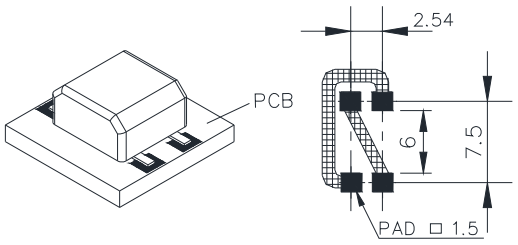


Operation Diagram

[Tilt Angle : 25° +20° −22°]

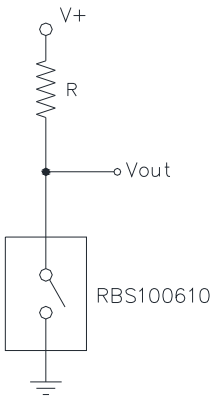


P.C.B. Layout (SMT) / Top View

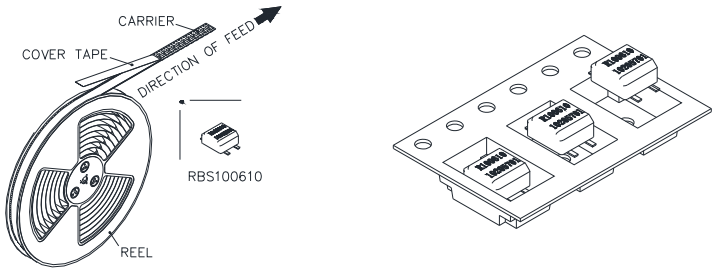


* No PCB drill hole under the switch

Application Circuit



TAPE & REEL



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● Current/Voltage Suggested

Input Current	Minimum Operating Voltage	Condition
1.0 mA	3 V	--

● ELECTRICAL CHARACTERISTICS

1.	Maximum Contact Current	10 mA
2.	Contact Resistance	50 Ω max.
3.	Operation Diagram	Refer to Fig. 1
4.	Insulation Resistance	50 MΩ min. At 100 VDC
5.	Dielectric Strength	50 VDC min. For 1 minute
6.	Capacitance	5pF max
7.	Conductive Rate	85% min.

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● RELIABLE TEST ITEMS

Reliable Test for RBS100610T

	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
IR Reflow	Please refer to following < Table of classification Reflow profile > and Fig. 2		-	SMD
Manual Soldering	300±5°C	< 3 seconds max.	30W or Temperature-controlled manual soldering	SMD

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< Table of classification Reflow profile >

Item	Pb process	Pb free process
Pre-heat and Soak Temperature min.(Tsmin) Temperature max.(Tsmax) Time (Tsmin to Tsmax)(ts)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-120 seconds
Average Rate of temperature rising up (Tsmax to Tp)	3°C/second max.	3°C/second max.
Liquidous Temperature (TL) Time at Liquidous (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak package body Temperature (Tp)*	230°C ~235°C *	255°C ~260°C *
Classification temperature(Tc)	235°C	260 °C
Time(tp)** within 5 °C of the specified classification temperature (Tc)	20** seconds	30** seconds
Average ram-down Rate (Tp to Tsmax)	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
* Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum. ** Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.		

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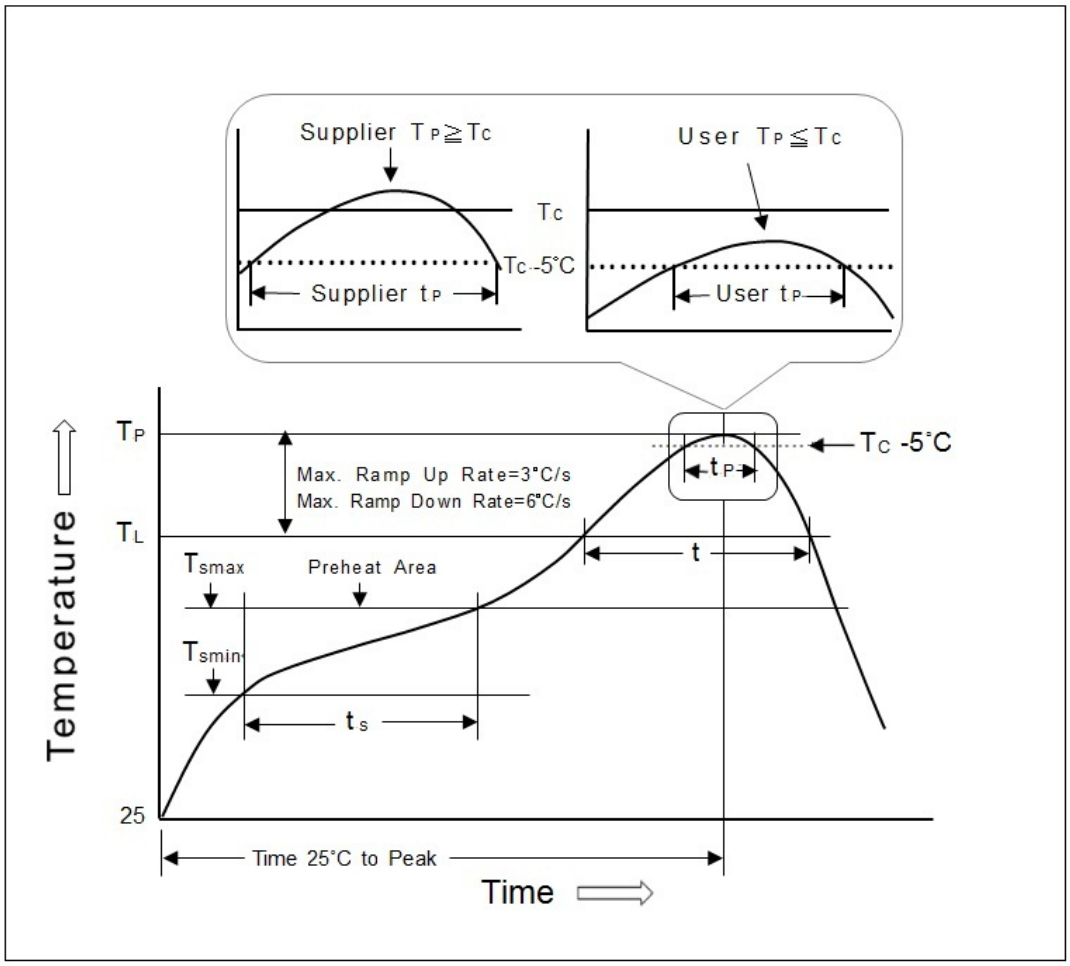
Fig. 2



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● PACKAGE

	Parts No.	Package	Quantity	Total	Dimension (mm)
1.	RBS100610T	Tape & Reel	2,500 pcs	2,500 pcs	φ330*12.5H
		Inner box	2 Reels	5,000 pcs	355L*340W*68H
		Carton	4 Boxes	20,000 pcs	373L*358W*309H

※ Package shown as below for reference.

Tape & Reel　　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. Don't 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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