NINGBO RHT ELECTRONICCO.,LTD

Specification For Approval

Customer Name : _____

RHT P/N : RHTGYS-001

Description : _____

Date : 2026-1-9

Approved by
Sign： date：
Please return by one copy

Design: Pan Checked: Andy Approved: Feng

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1. General Characteristics:

1.1 Application	ThisspecificationisappliedtoKeySwitchusedforgeneralapplications.
1.2 Operating Temperature Range	-40°C to +80°C
1.3 Operating Relative Humidity Range	≦ 85% RH, +40°C
1.4 Test Conditions	Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows: Ambient Temperature: 5-35°C Air Pressure: 86-106 Kpa Relative Humidity: 45-85% RH

2. Appearance, Structure and Dimensions:

2.1 Appearance	The switch shall have good finishing, and no rust, crack or plating defects.
2.2 Structure and Dimensions	Refer to individual product drawing
2.3 Markings	Refer to individual product drawing.

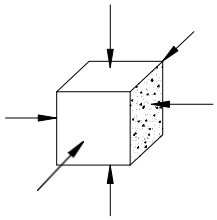
3. Ratings :

Ratings	10mA 12V AC/DC

4. Electrical Characteristics:

	Item	Criteria	Test Method
4.1	Contact Resistance	Initial Resistance:200 mΩ Max	Measured by contact-to- contact method at 1mA Max,5VDC,Any equipment with error not more than 5% can be used Resistance after test is the average of 4 successive measurements.
4.2	Insulation Resistance	100MΩ Min.	100V DC voltage is applied between each pair of terminals, and between the terminal and the metal frame for 60 ± 5 Sec.
4.3	Dielectric Voltage	No dielectric breakdown shall occur	500V(50-60HZ,cut– off current 2mA)alternate current load is applied between open terminals and between terminals and the metal frame or between metal parts, for 60 ± 5 Sec.
4.4	Contact bounce time	≤ 5 ms	Test conditions: v=0.40m/s,5 VDC/5mA

5. Mechanical Characteristics:

	Item	Criteria	Test Method
5.1	Total travel	$4.0^{0}_{-0.4}$ mm	The Actuator hall be reduced to the tip of actuator in operating direction to change component from operating position to end point
5.2	Output resolution	2.0±0.6 mm	The Actuator shall be applied to the tip of actuator in operating direction to change the component to operating positi
5.3	Operating Force	60±10gf	A static load shall be applied to the tip of actuator in operating direction to change the component to 2mm position
5.4	End force	< 110gf	The Actuator hall be reduced to the tip of actuator in operating direction to change component from operating position to end point
5.5	Vibration	After test: -Electrical characteristicsof items 4.1 ~ 4.4 shall be satisfied. -Mechanical characteristics of items 5.1 ~ 5.4 shall be satisfied.	Key Switch be secured to a testing machine by a normal mounting device and method. Switch shall be measured after following test(10 pcs of group). : 1. (Vibration frequency range) = 10-22.5 Hz (Total amplitude) = 0.25mm (Sweep ratio) : 10-55-10Hz 2. (Vibration frequency range) = 10-16 Hz (Total amplitude) = 3mm Sweep ratio) : 10-55-10Hz
5．6	Shock		Switch shall be measured after following test: (1) Mounting Method: Normal (2) Acceleration : 245m/s^2 (25G) (3) Duration : 11ms (4) Test Direction : 6 directions (5) Number of shocks : 3 times per direction (18 times in total) 

5.7	Solder-Ability	More than 90% of immersed part shall be covered with solder.	Key Switch shall be checked after following test: (1) older: Normal (2) Flux: Rosin Flux having a nominal composition of 25% solids by mass of water white rosin in methyl alcohol solution. (3) Soldering Temperature: 260 ± 5°C Immersing Time:3 ± 1 Sec Flux immersing time shall be 5-10s in normal room temperature. (4) Immersion Depth: Immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.5mm)

6. Durability Characteristics:

	Item	Criteria	Test Method
6.1	Mechanical Life	Before test: Contactresistance: 200mΩ Max Insulation resistance: 100MΩ Min. After test Contact resistance 10Ω Max or switch can be conductanced is ok	50,000,000 cycles of operation shall be performed continuouslyatarateof120cyclesperminutewithout load.
6.2	Electronics Life		50,000,000 cycles of operation shall be performed continuously at a rate of 120 cycles per minute with load as follow: 10mA 12VDC

7. Weather Proof Characteristics:

	Item	Criteria	Test Method
7.1	Cold Proof	After test: Contact resistance: 200mΩ Max Insulation resistance: 100MΩ Min. Electricalcharacteristicsofitems	After testing at -10±2°C for 18 hours, the switch can stay under normal temperature and humidity conditions for 2 hours, and measurement shallbemadewithin1hour after that. Water drops shall be eliminated.

7.2	Hot Proof	4.1 ~ 4.4 shall be satisfied.	After testing at 70±2°C for 96 hours, the switch can stay under normal temperature and humidity conditions for 2 hours and measurement shall be made within 1 hour after that.
7.3	Moisture Resistance		After testing at 40±2°C, 90-95% RH for 96 hours, the switch can stay under normal temperature and humidity conditions for 2 hours, and measurement shall be made within 2 hour after that. Water drops shall be eliminated.

8. BOM:

No.	Parts Name	Quantity	Material and Specifications	Prevent fire grade	Remarks
1	Cover	1	PA66		
2	Case	1	PA66 GF30		
3	Actuator	1	POM		Black
4	Spring	1	SUS304		
5	Contact blade	1	C5210		
6	Contact bracket	1	C5191		
7	Contact	2	Au Alloy		Cross point contacts

Precautions for use:

1. General:

The product is used mainly in electronic devices such as automotive devices, visual devices, home electrical appliances, information devices and communication settings. If the products is intended to be used for other endurance equipments 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. Soldering and assembly:

(1) The soldering conditions should be confirmed according to the actual production environment.

(2) Don' t try to clean the switch with a solvent or similar substance after the soldering process.

(3) Don' t operate the switch if it still has heat after soldering.

(4) The switch might be damaged if using the water-soluble flux, so make sure not to use such kind of flux.

3. Assembly structure and Mechanical design:

(1) The dimensions for the holes and the pattern on PCB should refer to the recommended dimensions on the engineering

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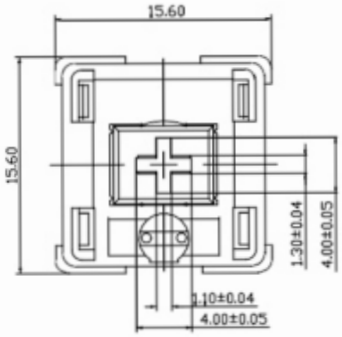
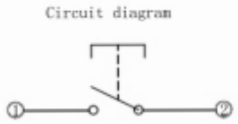
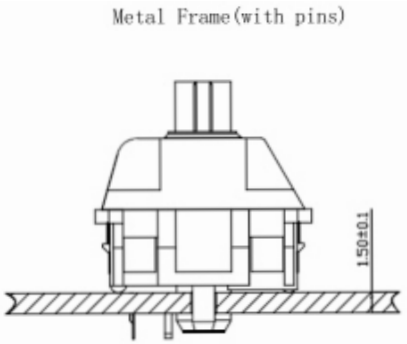
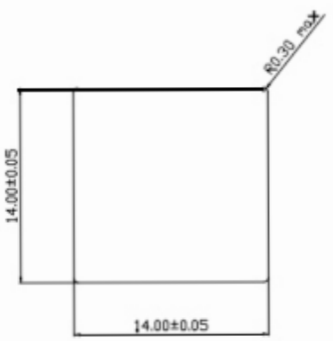
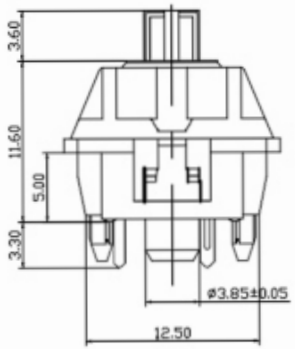
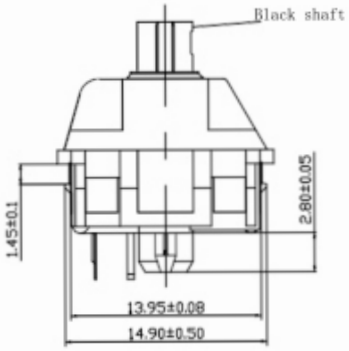




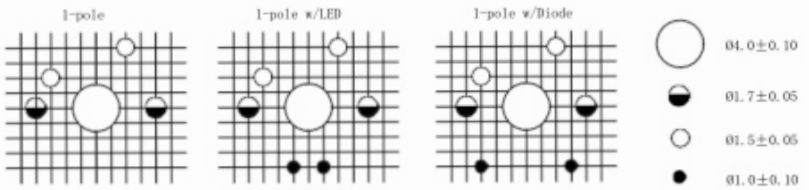








PC board mounting hole dimensions



Gride line spacing=1.27mm

Specification:

1.Rating : 10mA 12V AC/DC max.
2.Initial Contact Resistance: 200mΩ max
3.Insulation Resistance: 100MΩ (DC100V)
4.Withstand Voltage: AC100V(50--60Hz) for 1 minute
5.Bounce Time :≤5msec(at 16in/sec actuation speed)
6.Operation Force: 60±10gf
7.Total travel Force: 110gf max
8.Pretravel: 2.00±0.6mm
9.Total Travel: $4.0^{0}_{-0.4}$ mm
10.Operating Life: 50,000,000 Cycles(min)