Shenzhen Shouhan Technology Co., Ltd.
SHENZHEN SHOUHAN TECHNOLOGY CO.,LTD
Tel: 0755-27597601 Fax: 0755-27597491

bear recognize Book

SPECIFICATION FOR APPROVAL

CustomerCustomer: _____

Product nameProject: five way switch

Specification Model Part No: 7*7*5-6P WX

Your company recognizes the Indian Approal slgnatures

Material number/Part No.	Signature/Signatures

DateDate:

Fiction/Drawn	Li Chunfeng	深圳市首韩科技有限公司 工程专用章
Review/Check	Zhong Huahua	
Approved/Approved	Luo Xiaojin	

Shenzhen Shouhan Technology Co., Ltd.

7*7five way switch	Version number: A/0	Distribution date:
	Page number: 1	Distribution Number:

1. General matters

1.1 Scope of application: This specification is applicable toKFC-A07-02Five-way tact switch

1.2 Operating temperature range: -20℃~+70℃ under normal temperature and pressure

1.3 Storage temperature range: -30℃~+80℃ under normal temperature and pressure

1.4 Test conditions: Unless otherwise specified, the atmospheric conditions for measurement and testing are as follows:

Normal temperature: 5~35℃

Humidity: relative humidity 28-85%

Atmospheric pressure: Atmospheric pressure 86~106Kpa

2. Appearance, form and size

2.1 Appearance: no appearance defect affecting function

2.2 Dimensions: Refer to the outline assembly drawing

3. Action form: jog self-reset

4. Contact arrangement: SP5T (see outline drawing for details)

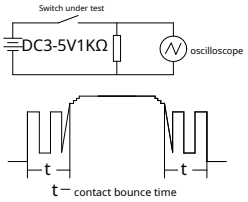
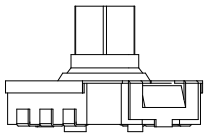
5. Rated parameters

5.1 Maximum rated value: 12VDC 50mA

5.2 Minimum rating: 1VDC 10μA

6. Electrical properties

item number	item head	want beg	experiment method	check check
6.1	Contact resistance	The contact resistance between the closed contacts of the switch is normal and gas After the weather test should be ⩽0.1Ω, after life test should be ⩽1 Ω.	according toGB 5095.2of2aMeasures are specified. The test voltage isDC2~6V,test Current is0.1A. When measuring, apply the specified static load at the center of the top of the switch actuator load, afterburner value from2N,3N,5NSelected from and specified in detail by the corresponding model Regulation. The measurement error should not be greater than10%.	After normal and climate test should be ⩽ 0.5Ω After life test should be ⩽1Ω
6.2	Insulation resistance	Between adjacent but not connected contacts of the switch, between contacts and The insulation resistance between other metal parts shall meet the following The column specifies: Under normal conditions＞100 MΩ After climate test＞10 MΩ After life test＞10 MΩ	according toGB 5095.2test3aMeasured according to the regulations, using the methodA.	Under normal conditions＞100 MΩ After climate test＞10 MΩ After life test＞10 MΩ
6.3	withstand voltage	Between adjacent but not connected contacts of the switch and between contacts and Between other metal parts, it should be able to withstandAC250V (50HZ, effective value)1mineffect without breakdown and arcing phenomenon.	according toGB 5095.2test4aMeasured according to the regulations, using the methodA.	No breakdown and arcing phenomenon

6.4	contact bounce	Contact bounce time of the switch at transition, normal It should be ⩽10ms, and it should be ⩽20ms after the life test.	In the center of the switch actuator, with3~5Press the switch at a rate of times/second, press the picture2Place Check the contact bounce time of the switch on and off with the circuit and requirements shown. 	Normal time should be ⩽10ms After the life test should be ⩽ 20ms
6.5	press force	The pressing force of the switch should be within the specified range. Center: 260±70g Four directions: 160-50g	according toGB 5095.7test13CMeasured according to regulations. When measuring in the switch drive Static load is applied evenly in the center of the top end face in the switching direction. should measure two times, take the average value. The measurement error should not be greater than15%.	The pressing force of the switch should be within the specified range inside
7. Mechanical properties				
7.1	operating force	Place the switch in the direction shown in the figure and gradually increase the force to the push rod Center, and sideways, measure the maximum point at which the switch stops moving large value  Figure 1	according toGB 5095.7test13CMeasured according to regulations. When measuring in the switch drive Static load is applied evenly in the center of the top end face in the switching direction. should measure two times, take the average value. The measurement error should not be greater than15%.	center: 260±70g Four directions: 160±50g
7.2	journey	Place the switch in the direction shown in (Figure 1), and A small static force is exerted on the heart and the four sides, and the measurement The stroke when the switch stops moving. (1) Four lateral forces: 1.91N (2) Central force: 3.2N	At the center of the top surface of the switch driver, apply the maximum pressing force and Measure travel. The top shape of the measuring instrument should be flat. The measurement error should not be greater than 10%.	Four directions: 0.2±0.1mm center: 0.15±0.1mm
7.3	Restoring force	Place the switch according to the direction shown in (a picture), in the center Set the push rod down to the stroke, and the measuring push rod resets Force in free position: the smallest0.1N	Pressing the push rod down to the stroke at the center position, immediately remove the external force that pushes down the push rod, and then After measuring the force when the push rod returns to the free position	the smallest0.1N
7.4	Termination strength	Press (Figure 1) to place the switch and act vertically on the push rod and a static force on any one of them. (1)pressure:29.4N (2)time:5	Press (Figure 1) to place the switch, vertically act on the push rod and one of its sides a static force.	Switch without mechanical damage The switch should operate
7.5	Push rod pull-out strength	Place the switch as shown in (Figure 1), measure and pull out the push rod time force＞5N	Place the switch as shown in (Figure 1), and apply a static force along the axial direction of the switch push rod. Force, which measures the force required to pull the push rod out	>5N
8.Environmental performance				
8.1	low temperature	Put the switch in the following setting environment, and then take out under normal environmental conditions1hour, measure again (1)temperature:-30±2℃ (2)time:96Hour remove water droplets	according toGB 5095.6test11iThe regulations are tested. After the conditional test, in the positive Recovery under normal atmospheric conditions1h.	meets the6,7.1,7.2
8.2	high temperature	Put the switch in the following setting environment, and then take out under normal environmental conditions1hour, measure again (1)temperature:80±2℃ (2)time:96Hour	according toGB 5095.6test11iThe regulations are tested. After the conditional test, in the positive Recovery under normal atmospheric conditions1h.	meets the6,7.1,7.2

8.3	wet	Put the switch in the following setting environment, and then take out under normal environmental conditions1hour, measure again (1)temperature:60±2℃ (2) time:96Hour (3) Relative humidity:90~95% (3)remove water droplets	according toGB 5095.6test11cThe regulations are tested. After the condition test, put the under normal environmental conditions1hour, measure again	contact resistance max.1000mΩ Minimum insulation resistance10MΩ meets the6.3,6.4,7.1,7.2regulations Certainly
8.4	temperature cycle	Put the switch in the following setting environment, and then take out under normal environmental conditions1hours, and remove Measurement after water drop Low temperature: -30±2℃ 3 hours high temperature:80±2℃ 3 hours for a cycle Cycles:5Second-rate	according toGB 5095.6test11dtest according to the	meets the6,7.1,7.2
. 9.Durability				
9.1	life	Measured after the test with the following test setup (1)load:5VD 5mA (2)Operating frequency: per second2Second-rate (3)Pressure: four-way1.9N center3.2N (4)frequency:30,000Second-rate	according toGB9095.5test9aThe regulations are tested. During the test, the pressing rate is2~3 times/second. In order to make the switch work reliably, the travel of the switch and its supplementary The amount should be adjusted to an appropriate range. During the test, use the indicator light to check the electrical contact of the switch	contact resistance max.1000mΩ Minimum insulation resistance10MΩ Contact bounce: opening position:20ms Max Off position:20ms Max Operating Force: Initial –30±50% meets the6.3strip
9.2	vibration	Measured after the test with the following test setup (1)Vibration frequency:10~55Hz (2)Full amplitude:1.5mm (3)Height Scale:10~55~10Hzabout one point bell (4)Method of Changing Alternating Vibration Frequency: Logarithmic law or uniform (5)Vibration direction: including three directions of X,Y,Z mutually perpendicular directions (6)Time: each direction 2hours (total6Hour)	according toGB 5095.4test6dThe regulations are tested. During the test, the switch is installed in Mount the plate, and then installed on the vibration test bench, in three mutually perpendicular axes Vibration in sequence	meets the6, 7
9.3	shock	The switch should be able to withstand acceleration 500m/s2, pulse duration 11msshock effect without mechanical damage. After the test, the switch shall comply with Meet the requirements of 6 and 7	according toGB 5095.4test6cThe regulations are tested. During the test, the switch is installed in Mounting plate, then mounted on impact test bench	meets the6, 7
10. Recommended Conditions				
10.1	manual welding	Please do the following: (1) Soldering temperature: up to 350°C (2) Duration: up to 3 seconds (3) Soldering iron power: maximum 20W (4) Do not apply pressure to the terminals (5) Prevent the top of the switch from being affected by flux		
10.2	reflow soldering	Please do the following: (1) Preheating: After the PCB enters the welding equipment for 2±0.3min, the temperature of the copper clad surface of the PCB should reach 180°C (2) Soldering heat: After the PCB enters the soldering heating zone, the surface temperature of the PCB copper foil should reach the highest temperature of 260°C within 20 seconds (3) The switch terminal and the upper surface of the PCB should avoid flux contamination before soldering (no flux)		

(4) Recommended solder paste: SPT-60-2063 (Qianbit Metal Company) or equivalent

(5) Prevent the top surface of the switch from being affected by flux.

Appendix: Use Attention:

A general items

A1This product is designed and manufactured for general electronic equipment, such as audio equipment, visual equipment, household electronic information equipment and communication equipment. However, when used in cutting-edge equipment that requires safety and high reliability, such as life support systems,

Space and aerospace equipment, disaster prevention and safety systems, please contact us for details.

A2This product is designed and manufactured as a DC resistor. If you use other types of impedance (such as inductance L, capacitance C), please inform us before use.

B Soldering and assembly to PCB engineering

B1Note that if the terminals are stressed during soldering, deformation and electrical performance deterioration will occur

B2The welding conditions should be determined according to the actual mass production conditions

B3When the switch is designed for reflow soldering, if you put the switch on the side of the PCB for convenience, flux may run into the sliding part of the switch during the automatic wave soldering process after installation, so it cannot be reworked after installation.

Automatic wave soldering.

B4When the repeated heating click rate deteriorates, reflow soldering should be performed in the shortest time and at the lowest temperature.

B5When the switch is installed on the printed board, it is necessary to protect the cover and insert the main body of the product into the designated fixed plane. And fix it in a horizontal position, otherwise, it will cause malfunction.

B6Stress on the push rod can cause damage to the switching function. So please be very careful when moving, and the slightest impact can not occur on the putter.

B7When mounted to the PCB, push rods must not be compressed except on the switch body.

B8Thermal hardening welding conditions: When other components are processed in a thermal hardening furnace, the temperature cannot exceed 160°C for longer than 2 minutes.

B9Use extreme care and attention when you are not using the recommended soldering methods.

C、 clear engineering

C1. After welding, do not use solvents or similar things to clean the switch

D. Mechanism Design (Switch Layout)

D1. Mounting holes (on the PCB) refer to the engineering diagram

D2. If the push rod is pushed sideways, the switch may be damaged

D3. After reflow soldering the switch, you may wave solder other components. In any case, the wave soldering will produce flux splashing on the switch, contaminating the switch. So don't design vias under and around the switch.

D4. The switch is designed as a unit structure operated manually, please do not use it for mechanical detection and other functions. For example, if you must use it, please contact our detection switch department.

D5. If the pressure is too large, the switch will be damaged. Do not exceed specified strength.

E. Use environment

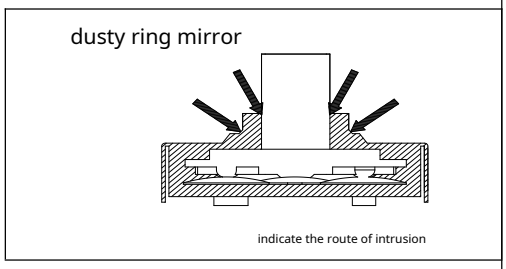
E1, external intrusion

The switch has no sealing structure, and the contact may be invalid due to external dust, so pay attention to dust prevention when using it. The following are several cases of external dust intrusion:

1, Debris from the manufacturing process from indentations or PCB holes, plastic on the PCB protection material intrudes into the switch.

2, Solder or powder flux by stacked PCBs or additional bubbles.

3. When you need dust-proof products, please choose from our product catalog



E2. When the product is used near sulfur-containing hot springs or near automobile exhaust, please note that the switch performance will change.

E3. If there are other parts or materials installed in the same module as the switch, please pay attention to the following points:

1. Rubber, adhesives, plywood, packaging materials, lubricants, please do not use those acidic or sulfur-containing materials

2. When you use silicone, grease, adhesives and petroleum, use those that will not produce low molecular weight siloxane gas, which will produce on the product

Formed into a silicon oxide sheet on the contacts, and making the opening contacts invalid. When you use chemicals as protective film, please inform us first.

F. Storage method

F1. If it is not used immediately, it should be stored in an environment without direct sunlight and corrosive gases, and the temperature should be within normal temperature. On the contrary, it is recommended to use it before six months.

F2. After unpacking, put the rest in a plastic box, store in the environment mentioned above and use it up as soon as possible.

F3. Don't store too many switches for too much use.

G. Other

G1. This specification is invalid after one year, and there is no need to return it.

G2, mechanical properties and dimensions may be subject to change without notice.

G3. Never use this product beyond the rated value, it may catch fire. If you use this product under overload under abnormal conditions, please prepare relevant protection measures, such as short circuit protection circuit, etc.

G4. The plastic flammability rating of this product is 94HB-UL (slow burning). Therefore, avoid using it in a place prone to fire, or take measures to prevent fire.

G5. Although we are confident in the quality of the switch, we cannot deny the possibility of an open circuit or a short circuit. Therefore, if you want to use a product with a higher security level, we hope that you confirm in advance that your module will what happens.

Packing specification with ring

1. Scope of application

This specification covers the requirements for SKRH standard types of tact switches with ring packaging

2. Packing Quantity

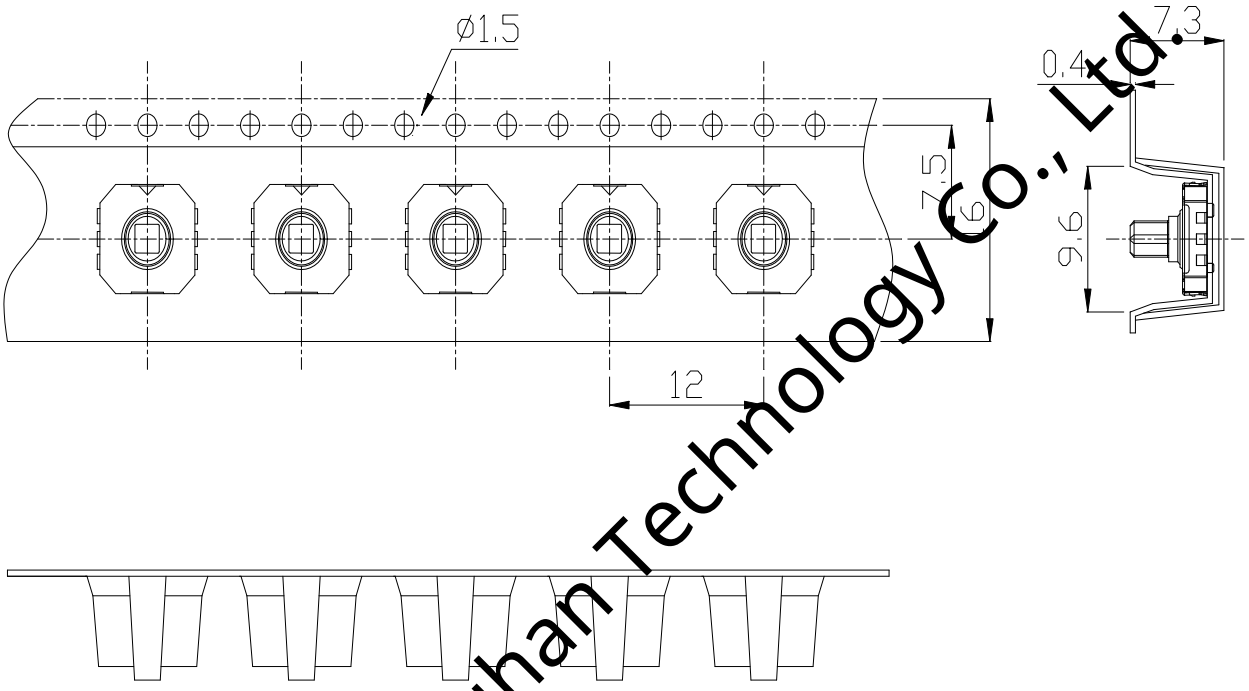
2.1 Number of turns: 8 turns at most, 10.400 switches in total, in one box

2.2 Number of switches:

1.300 switches per diagram

2.3 Note: We ship 2 cartons as one package.

3. Belt shape and size:



4. Circle shape and size

5. Packaging method

5.1 At the beginning of the ring, at the end of the belt, there should be a clearance of 200mm or more to fit into the mounting groove on the ring core.

5.2 After looping, the end of the strip, leaving 15m or more, is cut at 45 degrees.

5.3 The number of lost switches per revolution shall be zero.

6 Storage conditions

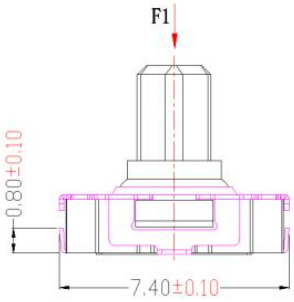
6.1 Storage environment

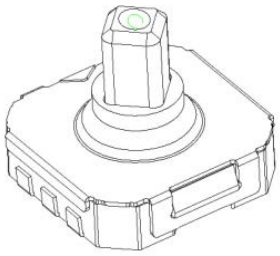
- 20℃~50℃, 20~85%RH

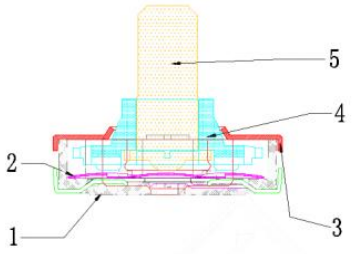
Avoid storing in high temperature and high humidity environment

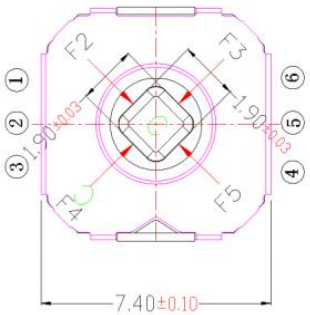
6.2 Shelf life

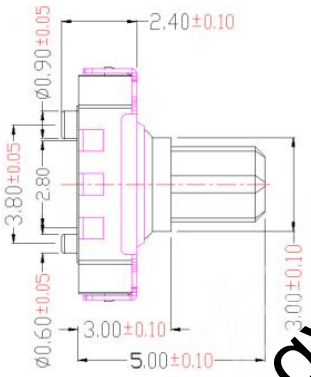
Within 6 months after shipment

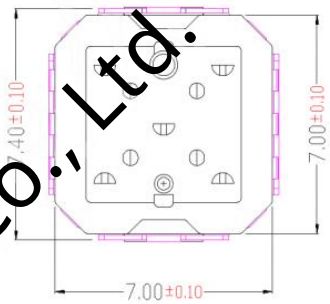




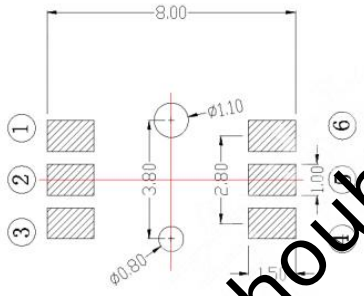




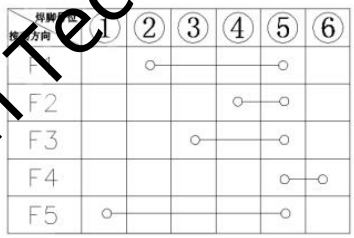




印制板安装孔图



电 路 图



技术要求：

1. 产品外观应无明显损伤、
裂纹、锈迹；
2. 未注公差按GB/T1804-m。

序号	编号	名称	数量	材料	备注
5	SH8.337.017	按钮	1	PA6T	
4	SH8.334.017	按柄	1	PPA	
3	SH7.748.010	盖板	1	不锈钢镀银	
2	SH7.730.008	五连弹片	2	不锈钢覆银	
1	SH6.620.029	塑料基座	1	塑料件:LCP 金属件:磷铜镀银	

媒体编号					
旧底图总号					
底图总号	标记	数量	日期		
	设计	李春风	2021.6.10		
	审核	钟华华	2021.6.10		
	工艺				
日期	签名				
	标准化				
	批准	罗孝金	2021.6.10		

首韩 SHOUHAN

深圳市首韩科技有限公司

五向开关

阶段标记	质量	比例
		1 : 1

7*7*5-6P W X

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