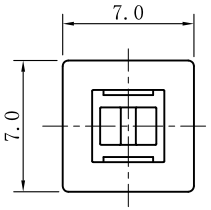
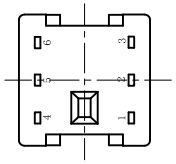
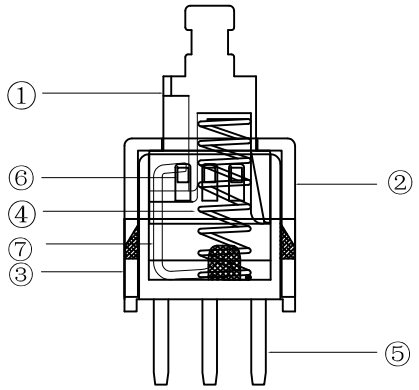
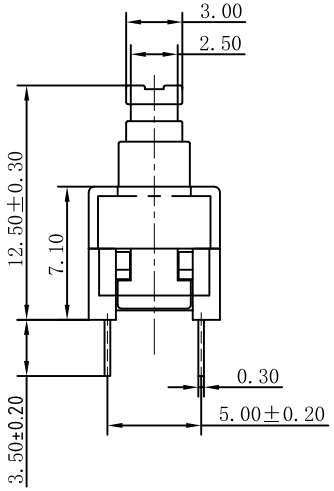
ABIDE BY ROHS

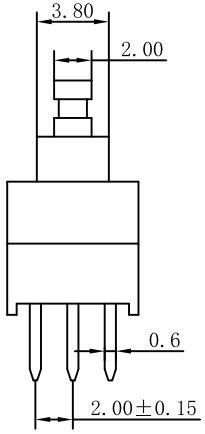


向视图

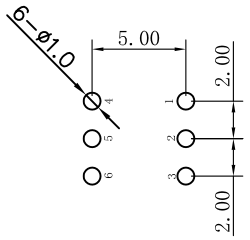


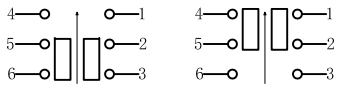




## Specification :

1.Rating : DC30V 100mA
2.Contact Resistance : 200mΩ Max
3.Insulation Resistance :100MΩ Min
4.Withstand Voltage :
AC250V (50–60Hz) For 1 Minute
5.Operation Force : 180±50gf
6.Life Test : 100,000 Cycles
7.Full travel: 2.40±0.20mm




PCB Layout Recommended
tolerance: ±0.05mm



电路简图

常态：2-3导通 5-6导通
按下：1-2导通 4-5导通

| ITEM | PART NAME | TER'NO. | QTY. | MATERIAL | FINISHING | REMARK |
|---|---|---|---|---|---|---|
| ⑦ | Hookpin | | 1 | SWC | | |
| ⑥ | Contact | | 1 | Copper Sliver | | |
| ⑤ | Terminal | | 6 | Brass | Plating silver | |
| ④ | Spring | | 1 | SWC | | |
| ③ | Base | | 1 | PA66 | Black | |
| ② | Cover | | 1 | PA66 | White | |
| ① | Keystoke | | 1 | PA66 | Blue | |

| APPROVALS | | DATE | 东莞市凯华电子有限公司 KAIHUA ELECTRONICS CO.,LTD |
|---|---|---|---|
| DRAWN | WUYU | 2020.06.08 | |
| CHECKED | | | TITLE: 7.0自锁按键开关 |
| APPROVALS | | | PART NO. CPG707110D01 |
| TOLERANCES ARE | 30<L ±0.30; 10<L≤30 ±0.20; 5<L≤10 ±0.15; L≤5 ±0.10; ANGLE ±2° | | UNIT: mm SCALE: 1:1 PROJ: |
| | | | DRAWING NO. SHEET 1 OF 1 |

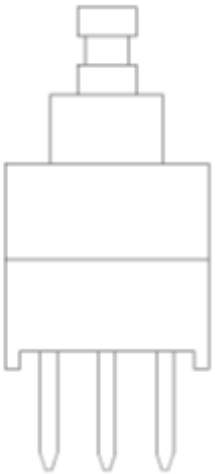
| ECN NO. | REV. | DATE. | DESCRIPTION. | CHANGE. | CHECK. | APPRO. |
|---|---|---|---|---|---|---|
| | A | | NEW | | | |

凯华电子 Kailh KAIHUA ELECTRONICS

Document Number:

KH-PS1908-29

# Product Specification



P/N: **CPG707110D01**

Title : **7.0 Self-locking key Switch**

| Rev. | ECN | Release and Revision Description: | Prepared By /Date: | Checked By/Date: | Approved By/Date: |
|---|---|---|---|---|---|
| A | — — | New releasing | ZHANGJUNHUI 2020/06/08 | LVPANHAO 2020/06/08 | MAZHONGJUN 2020/06/08 |
| | | | | | |
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| | | | | | |

# Content

## 1. Scope:

This Product Specification covers the requirement of Push button switch on product performance, test methods and quality assurance provisions.

## 2. Product Application：

The Switch is applied in all types of Computer. Please let us know before using any of the products in the application not described above.

## 3. Technology Parameters:

Ambient Humidity： 45~85% R.H.；
Operating Temperature Range： -10℃～+70℃；
Storage Temperature Range： -20℃～+70℃；
Suggested storage period ： about 6 months
Require the tin part on the switch terminals should keep good after storage guarantee date

Normal Condition:
Ambient temperature： 20±2℃
Relative humidity： 65%±5% R.H.；
Air pressure ： 86~101KPa;
Contact Resistance： 200 mΩ Max；
Operation Force： 180±50gf；
Solder Ability ： Tim-lead soldering ： 245℃±5℃ 5s±0.5s；
Lead-free welding ： 255℃±5℃ 5s±0.5s；
Withstand Soldering Temperature: Wave soldering： 260±5℃ 5±0.5s；

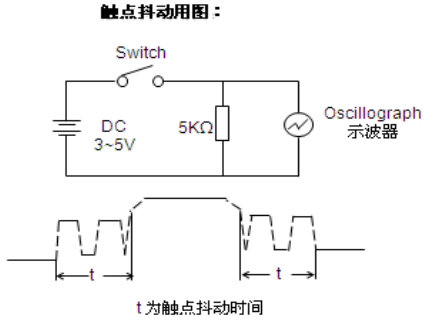
## 4. Ratings:

Rating： DC30V / 0.1A；
Insulation Resistance： ≥100MΩ/DC 100V;
Withstand Voltage： 250V AC 1 Minute;
Mechanical Life： 100,000 Cycles.

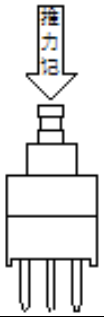
## 5. Profile Dimensions

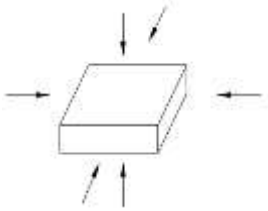
See the product drawing

## 6. Electrical Performance:

| Item | De cription | Test Condition | Requirement |
|---|---|---|---|
| 6.1 | Contact Resistance | Static load: (Operation force)x2, which is applied on the center of Switch stem.<br><br>Measurement tool: Contact resistance Meter. , 20mV,5~50mA)<br><br>Measured at low current (100mA or less). | 200mΩ Max |
| 6.2 | Insulation Resistance | Apply a Voltage of DC 100 V for 1 minute, according to the below method.<br>(1) Between terminals.<br>(2) Between terminal and Body. | 100MΩ Min |
| 6.3 | Dielectric withstanding voltage | Apply a Voltage of AC250 V (50~60Hz) for 1 minute, according to the below method.<br>(1) Between terminals.<br>(2) Between terminal and Body. | No evidence of breakdown. |
| 6.4 | Bouncing | Operation speed：1~2 times/s<br>Slightly push the center of stem by 1~2 times/s, to test the bounce at “ON” and “OFF”<br>Oscilloscope<br>Switch Bouncing Test Circuit.<br>  | Before Life cycle:<br>On:5ms MAX<br>Off: 5ms MAX<br><br>After Life cycle:<br>On:10ms MAX<br>Off: ms MAX |

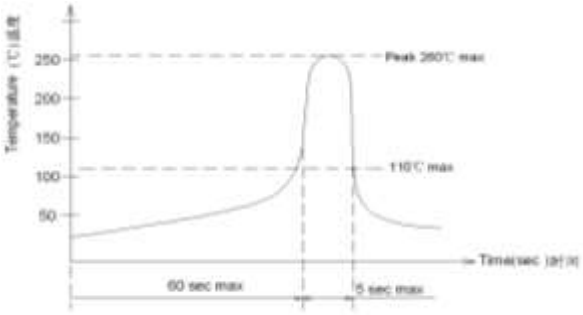
**7. Mechanical Performance:**

| Item | Description | Tes Condition | Requirement |
|---|---|---|---|
| 7.1 | Operation force | Operate the keystoke of the switch and then increase press strength gradually, Measured maximum operation force while the travel of the switch is work. | 180±50gf |
| 7.2 | Travel | Operate the keystoke of the switch vertically, the travel distance of keystoke moving from its free position to maximum moving distance shall be measurement. | Total travel: 2.40±0.20mm |
| 7.3 | Static Strength | A static load of 1 Kgf shall be applied in the direction of button operation for a period of 60 seconds.  | No damage (Electrical) And mechanical） |
| 7.4 | Stem Pull Strength | Break by a pull force applied opposite to the direction of stem operation. | 500gf Min |

| | | | |
|---|---|---|---|
| 7.5 | Shock | Measured by according to the below condition:<br>(1) Acceleration: 80g accelerated speed<br>(2) Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles.<br>.<br>  | Shall meet No.6，7.1，7.2. |
| 7.6 | Life Test | (1) Weight:300gf<br>(2) Operation speed：1cycles/s<br>(3) Push force：Maximum value of operation force..<br>(4) Cycles：10,000 times Min | Contact resistance:<br>10000 mΩ Max<br><br>Bouncing：10ms Max<br><br>Operation force：<br>Variation rate within ± 30% |

**8. Environmental Performance:**

| Item | Description | Test Condition | Requirement |
|---|---|---|---|
| 8.1 | Cold test | (1) Temperature : - 20±2℃<br>(2) Duration of test: 96h<br>(3) Take off a drop water<br>(4) Standard conditions after test : 1h | Contact resistance:<br>200mΩ Max<br>Shall meet :<br>No. 6.2 to 6.4<br>No. 7.1 to 7.2 |
| 8.2 | Heat test | (1) Temperature : 70±2℃<br>(2) Duration of test: 96h<br>(3) Take off a drop water<br>(4) Standard conditions after test : 1h | Contact resistance:<br>200mΩ Max<br>Shall meet :<br>No. 6.2 to 6.4<br>No. 7.1 to 7.2 |

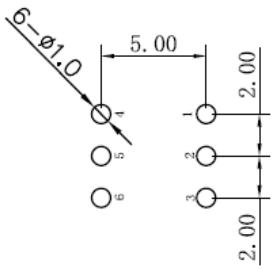
<table>
<tr>
<td>8.3</td>
<td>Temperature cycle</td>
<td>(1) Test cycles: 5 cycles<br>(2) Standard condition after test:1h<br><br>
<table>
<tr><td></td><td>Temperat e</td><td>Duration test</td></tr>
<tr><td rowspan="4">1 cycle</td><td>20±5℃</td><td>1h</td></tr>
<tr><td>-20±5℃</td><td>1h</td></tr>
<tr><td>20±5℃</td><td>h</td></tr>
<tr><td>70±5℃</td><td>1h</td></tr>
</table>
</td>
<td>Contact resistance:<br>200mΩ Max<br>Shall meet :<br>No. 6.2 to 6.4<br>No. 7.1 to 7.2</td>
</tr>
<tr>
<td>8.4</td>
<td>Soldering heat test</td>
<td>Soldering area: T/2 of PWB thickness.<br>(PWB: T=1.6mm)<br>Soldering temperature: 260±5℃<br>Soldering time: 5±0.5s</td>
<td>Appearance:<br>No abnormality.</td>
</tr>
<tr>
<td>8.5</td>
<td>Solderability</td>
<td>1. Hand soldering：<br>Please practice according to below condition:<br>(1) Soldering Temperature : 245±5℃<br>(2) Continual soldering time: 5±0.5s<br>(3) Capacity of soldering iron: ≤20w<br> 

<br>2. Automatic PIP soldering：<br>For the product of T/H, according to below condition:</td>
<td>At least 90% of surface area of immersed portion shall be covered by solder.</td>
</tr>
<tr>
<td>8.6</td>
<td>Humidity test</td>
<td>(1) Temperature : 60±2℃<br>(2) relative humidity: 90~95% R.H.<br>(3) Duration of test: 96h<br>(4) Take off a drop water<br>(5) Standard conditions after test: 1h</td>
<td>Contact resistance:<br>200mΩ Max<br>Shall meet :<br>No. 6.2 to 6.4<br>No. 7.1 to 7.2</td>
</tr>
</table>

| | | | |
|---|---|---|---|
| 8.7 | Salt Spray | Apply the following environment to test(Only for contact test) :<br><br>(1) Temperature : 35±5℃<br>(2) Salt water density: 5±1%<br>(3) Duration: 24hours<br>(4) After test, the salt deposit shall be removed by running water. | Appearance:<br>No corrosion spot, no crack, no base plate naked.<br><br>Contact Resistance:<br>200 mΩ Max |
| 8.8 | Withstand $K_2S$ | Apply the following environment to test:<br><br>(1) Temperature: Natural<br>(2)$K_2S$ Density: 2%；<br>(3) Duration: 2 minute. | Appearance:<br>No corrosion spot, no crack, no base plate naked.<br>Contact Resistance:<br>200 mΩ Max |

## 9. Recommended PCB Layout

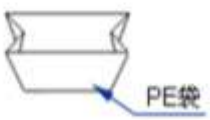
(Top View)
(Single face board T=1.6mm)

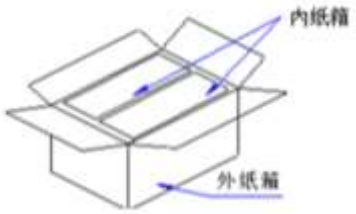



PCB Layout Recommended
tolerance: ±0.05mm

## 10. Packaging :

Packaging type: PE Bag, 1000Pcs/Bag, 5000Pcs/Inner Carton. 20000Pcs/Outer Carton.



## 11.Precaution

### 11.1 Immersion Soldering condition

| ITEM | CONDITION |
|---|---|
| Preheat temperature | 110℃ Max (Ambient temperature of soldering surface of P.W.B) |
| Preheat time | 60s, Max |
| Area of flux | 1/2 Max of PWB Thickness |
| Temperature of solder | 260±5℃<br>260±5℃ |
| Time of immersion | 5±0.5s<br>5±0.5s |
| Number of soldering | 2time Max (But should down heat of the first soldering) |
| Printed wiring board | Single side copper-clad laminates |

(1) After switches were soldered, please be careful not to clean switches with solvent

(2) Under the condition of using soldering iron, soldering temperature shall be 350℃±5℃ with 3±0.5s.

### 11.2 Notes

(1) Please be cautious not to give excessive static load or shock to switches.

(2) Please be careful not to stack up P. W. B. after switches were soldered.

(3) Preservation under high temperature and high humidity or corrosive gas should be avoided Especially. When you need to preserve for a long period, do not open the carton.

(4) The standard storage period is 3 months, with maximum up to 6months, preferably to be used as soon as possible. After opening the package, you should put the remaining switches in a plastic bag to prevent from damp and corrosive gas.

(5) This Product Specification is considered as the technical agreement on product between the receiving customer and Kailh. Any information on Product Catalogue which is in conflict with or different from the corresponding information of this document is considered as invalid.

(6) It will be considered that customer already confirmed and accepted this specification if customer issue purchase order to us directly.

(7) If there is no order or no request for new specification after 1 year upon this specification is issued, the specification will be regarded as invalid.

(8) Products meet the ROHS & REACH environmental management substances control standards