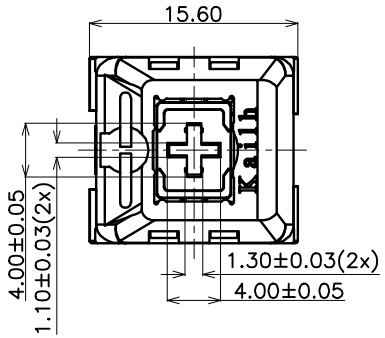
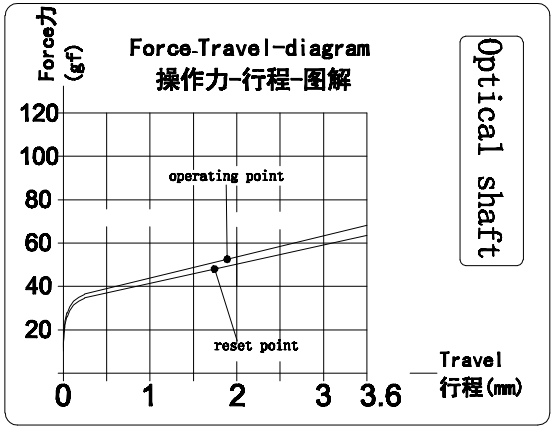
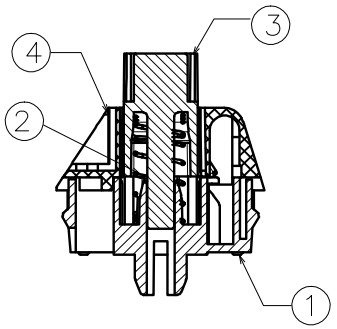
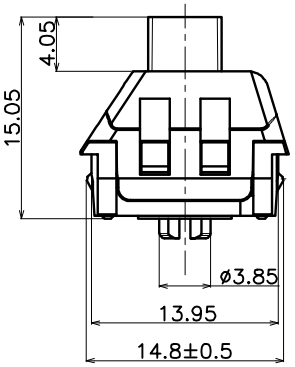
ABIDE BY ROHS

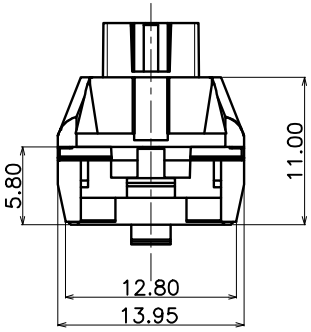
# Optical shaft



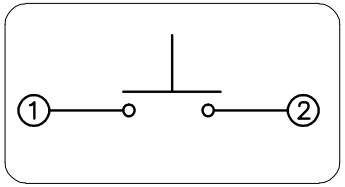



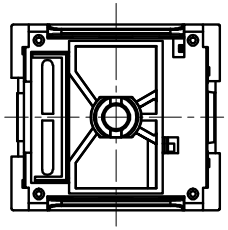

## ■ SWITCH FUNCTION

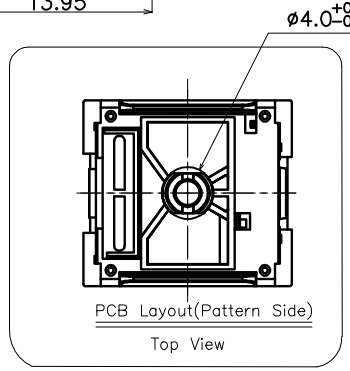


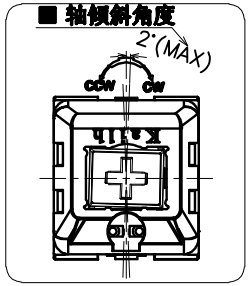

■ Specification :

- 1.Operation Force : 50±15gf
- 2.Pre travel:1.8±0.6mm
- 3.Total travel:3.6±0.6mm
- 4.Operating Life :70,000,000 Cycles(min).
- 5.Min Force:5~20gf
- 6.Max Force:55~70gf

<Feel is allowed to have difference before and after life test>






| ④ | Cover | —— | 1 | PC | Nature | —— |
|---|---|---|---|---|---|---|
| ③ | Keystroke | —— | 1 | POM | Black | —— |
| ② | Spring-A | —— | 1 | Stainless Steel | Nature | —— |
| ① | Base | —— | 1 | PA66 | Black | —— |
| ITEM | PART NAME | TER'NO. | QTY. | MATERIAL | FINISHING | REMARK |

| APPROVALS | | DATE | DONGGUAN CITY KAIHUA ELECTRONICS CO.,LTD |
|---|---|---|---|
| DRAWN | Yijinping | 2017.06.26 | |
| CHECKED | | | TITLE: PG1511 Keystroke Switch(Optical shaft) |
| APPROVALS | | | PART NO. CPG151101D225 |

| TOLERANCES ARE | | | | UNIT: mm | SCALE: 1:1 | PROJ: |
|---|---|---|---|---|---|---|
| | 30<L | ±0.30 | ANGLE | | | |
| | 10<L≦30 | ±0.20 | | | | |
| | 5<L≦10 | ±0.15 | ±2° | DRAWING NO. | KHA-PG1511-186EN | SHEET 1 OF 1 |
| | L≦5 | ±0.10 | | | | |

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

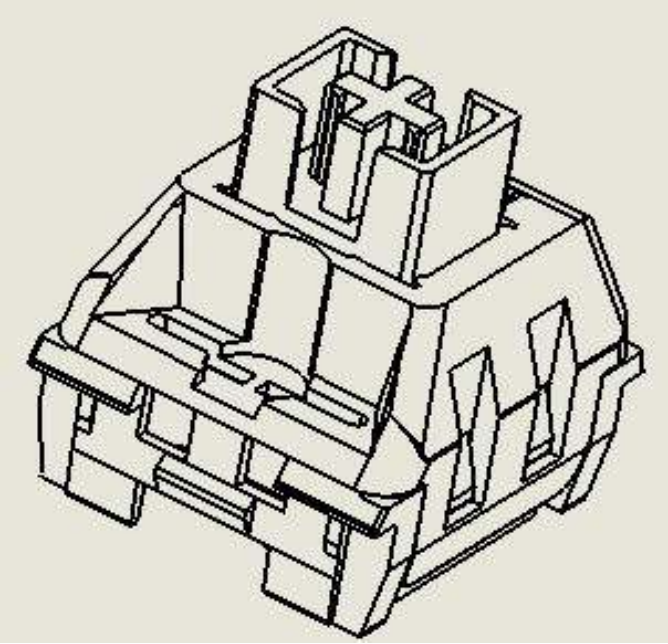
凱華電子
KAIHUA EELETRONICS

Document Number:

KH-PS1706-50

# 产品规格书

## Product Specification



| P/N: CPG151101D225 | | | Title : PG1511 Keyboard Switch | | |
|---|---|---|---|---|---|
| Rev. | ECN | Release and Revision Description: | Prepared By /Date: | Checked By/Date: | Approved By/Date: |
| **A** | — — | New releasing 初版发行 | 易金平/2017－09－29 | 胡远锋/2017－09－29 | 王锋/2017－09－29 |
| | | | | | |
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## 1. Scope/范围:

This Product Specification covers the requirement of Mechanical Keyboard switch on product performance, test methods and quality assurance provisions.
本规格书内容涵盖机械键盘开关产品的要求，包括性能指标、测试方法及质量保证方面等。

## 2. Product Application/产品应用：

Mainly applied on computer keyboards, cash registers, industrial equipment and Man-Machine interface.
主要适用于电脑键盘，收银机、工业设备和人机界面。

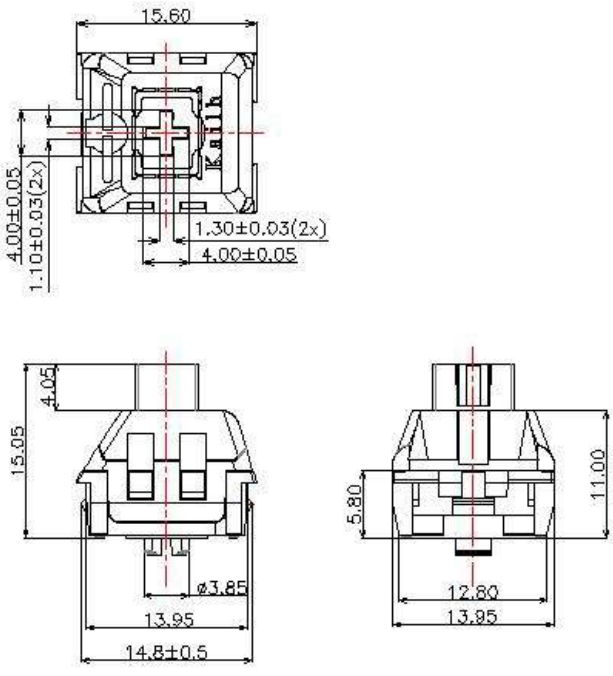
## 3. Technology Parameters/技术参数

Ambient Humidity 工作湿度： 45~85% R.H.;
Operating Temperature Range 使用温度范围： -10℃～+70℃;
Storage Temperature Range 保存温度范围： -20℃～+70℃;
Suggested storage period 贮存期限： about 6 months 最多 6 个月
Require the tin part on the switch terminals should keep good after storage guarantee date
要求贮存期后开关端子部分上锡仍然良好。
Normal Condition:
Ambient temperature 环境温度： 20±2℃
Relative humidity 相对湿度： 65%±5% R.H.;
Air pressure 气压： 86~101KPa;

## 4. Ratings/额定性能要求

Mechanical Life 机械寿命： 70,000,000 Cycles.

## 5. Profile Dimensions /外形尺寸

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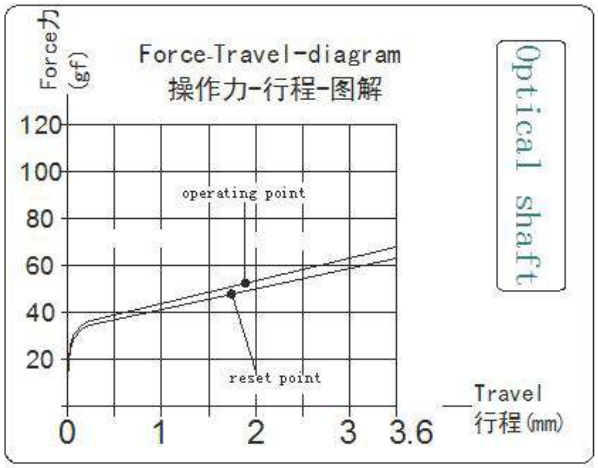
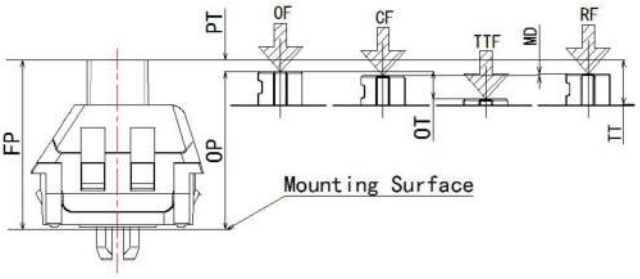
| Item 项目 | Description 项目描述 | Test Condition 测试条件 | Requirement 规格要求 |
|---|---|---|---|
| 6.1 | Load Curve 荷重曲线 | Place the vertical direction of switch operation and gradually increase the load applied to the center of the stem until it stop.<br>开关的动作方向为垂直放置，向手柄中心逐渐施加负荷直到停止.<br>  | See page 07<br>见第 07 页 |
| 6.2 | Loading parameter 荷重参数 |  | See page 07<br>见第 07 页 |

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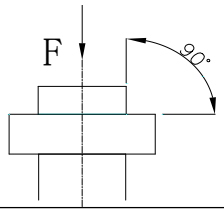
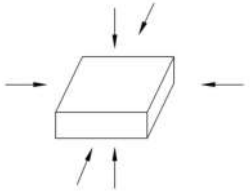
| | | | |
|---|---|---|---|
| 6.3 | Static Strength<br>静止强度 | A static load of 3kgf shall be applied in the direction of button operation for a period of 60 seconds.<br>在手柄动作方向施加 3kgf 的静负荷 60 秒，然后测试参数.<br>  | No damage (Electrical) And mechanical）<br>电气和机械性能正常. |
| 6.4 | Stem Pull Strength<br>手柄拉拔强度 | Break by a pull force applied opposite to the direction of stem operation.<br>在推柄动作方向反向垂直施加拉力，使其破坏的程度. | 5kgf Min |
| 6.5 | Shock<br>机械冲击 | Measured by according to the below condition:<br>(1) Acceleration: 80g 加速度<br>(2) Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles.<br>试验次数：每个方向 3 次，6 个方向共 18 次.<br>  | Shall meet No.6.1，6.2.<br>满足 6.1，6.2 要求. |
| 6.6 | Life Test<br>寿命测试 | 1) Operation speed : 5-6 times / s<br>动作速度： 5-6 次/ 秒<br>2) Push force : 150gf<br>按力: 150gf<br>3) Push travel : 3.6mm<br>按压行程: 3.6mm<br>4) Operation number: 70,000,000cycles<br>动作次数: 70，000，000 次 | Variation rate within ± 30%<br>操作力的变化范围在初始值的±30%以内. |

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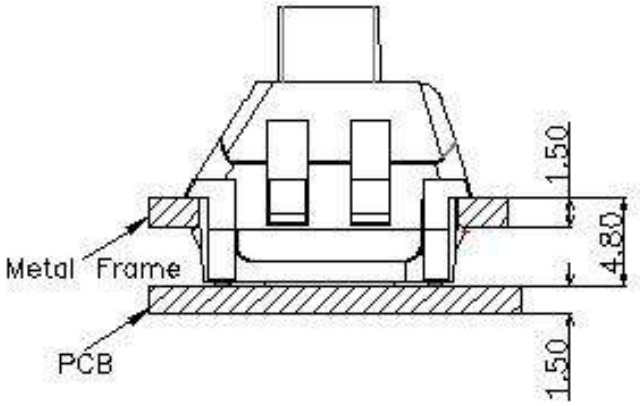
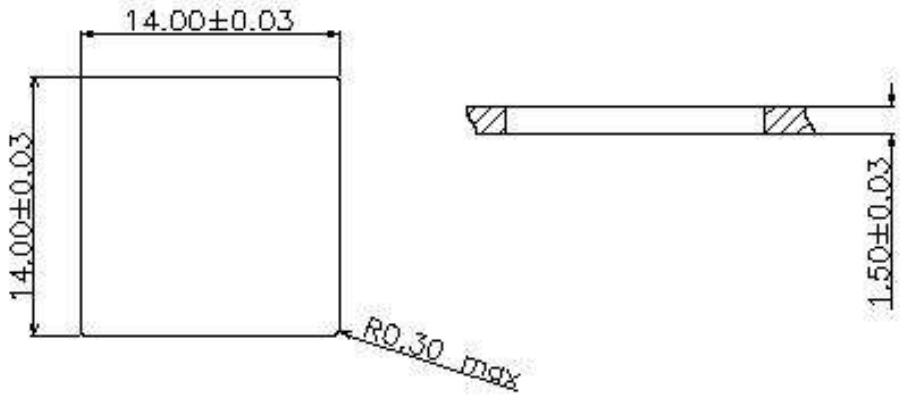
**7.Recommended PCB Layout 推荐的 PCB 安装焊盘规格**




Metal Frame Cutout Dimensions

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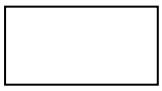
**8.Loading Parameter (FP/OP/PT/OF/OT /MD/CF/RF/TT) Specification 荷重参数规格：**

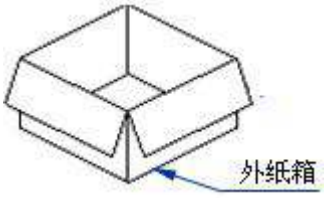
| Parameter | Unit | Specification | Remark |
|---|---|---|---|
| FP(自由行程) | mm | 15.05±0.3 | |
| OP(动作行程) | mm | 13.25±0.6 | |
| PT(导通行程) | mm | 1.80±0.60 | |
| OT(过行程) | mm | 1.2 | Min |
| MD(差动行程) | mm | 0.6 | Max |
| OF(操作力) | gf | 50±15 | |
| TT(总行程) | mm | 3.60±0.60 | |

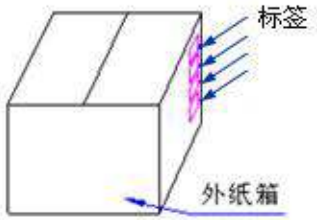
**09.Packaging 包装**

**Packaging type: PE, 500Pcs/Tray, 6000Pcs/Carton.**

**包装方式: PE 袋,500Pcs/袋 , 6000Pcs/箱.**






**10.Precaution 注意事项**

**10.1 Notes 注意点**

(1) Please be cautious not to give excessive static load or shock to switches.
注意不要施加超负荷的压力或晃动开关.

(2) 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.
保管时尤其应注意避开高湿高温和有腐蚀性气体的环境.如需长时间保存,请不要打开包装箱.

(3) Products meet the ROHS & REACH environmental management substances control standards
产品满足 ROHS & REACH 环境管理物质管制标准

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