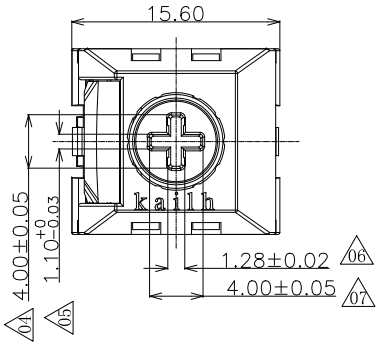
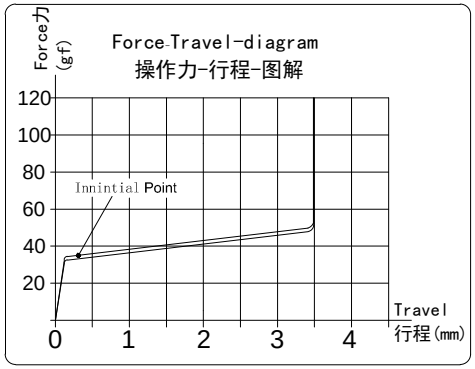
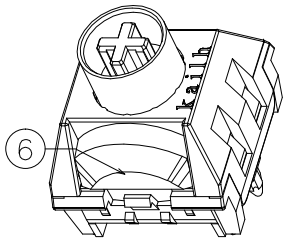
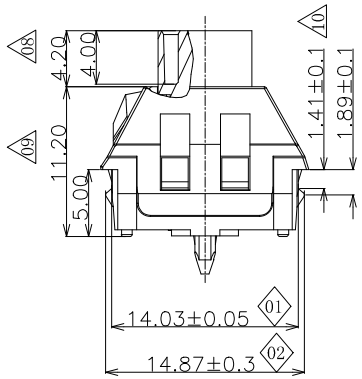
ABIDE BY WEEE & ROHS

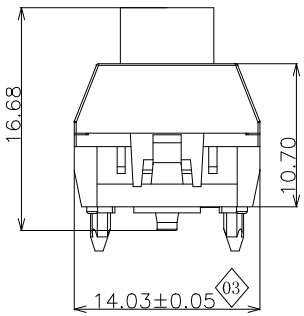


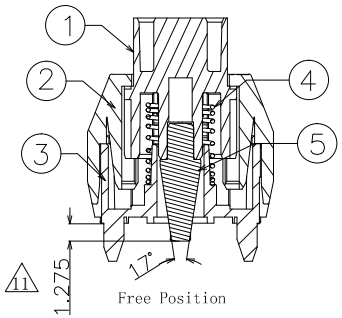


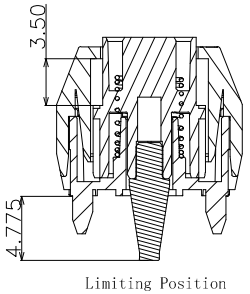


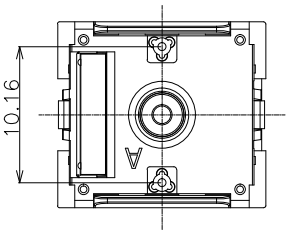
■ Specification :
- 1. Initial Force:35±10gf(at position 0.3mm)
- 2. Total travel:3.5±0.2mm
- 3. Operation Life: 100,000,000 Cycles(min).

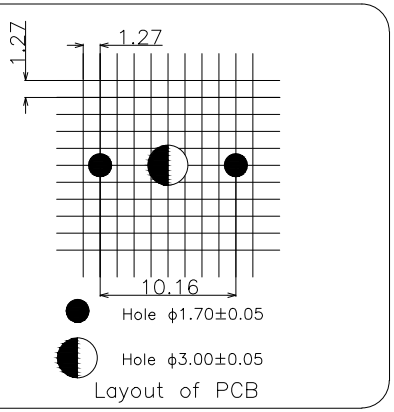


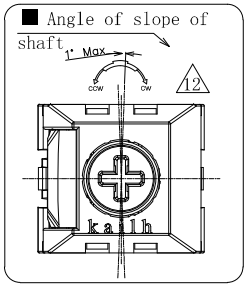












⑥	Light guide	——	1	PC	Translucency	——
⑤	Induction rod	——	1	Aluminium alloy	——	——
④	Spring	——	1	Stainless Steel	——	——
③	Base	——	1	POM	Purple	——
②	Cover	——	1	POM	Blue	——
①	Keystroke	——	1	POK	White	——
ITEM	PART NAME	TER'NO.	QTY.	MATERIAL	FINISHING	REMARK

APPROVALS		DATE	东莞市凯华电子有限公司 KAIHUA ELECTRONICS CO.,LTD
DRAWN	ZYJ	2024.10.28	
CHECKED	HHX	2024.10.28	TITLE: PG1511FG Keystroke Switch
APPROVALS	C C	2024.10.28	PART NO: CPG1511FG01D02
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. KHA-PG1511FG-002EN SHEET: 1OF1

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

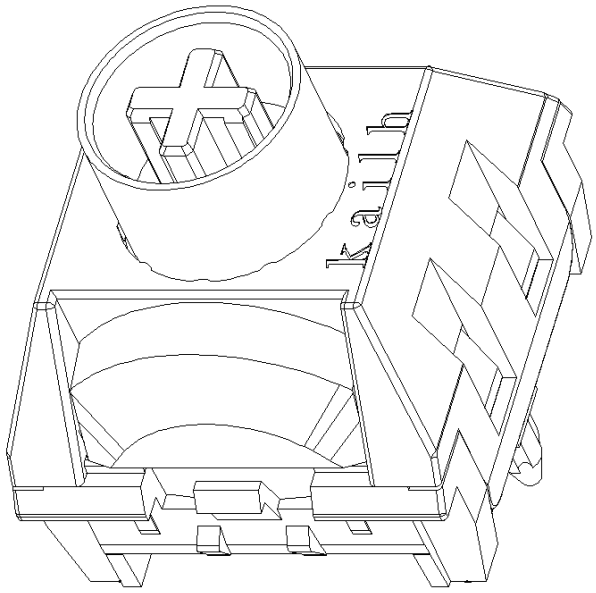
凱華電子
KAIHUA EELETRONICS

Document Number:

KH-PS2410-39

产品规格书

Product Specification



P/N: CPG1511FG01D02			Title : PG1511FG Keyboard Switch		
Rev.	ECN	Release and Revision Description:	Prepared By /Date:	Checked By/Date:	Approved By/Date:
A	— —	New releasing 初版发行	张宇杰 2024.10.28	胡海鑫 2024.10.28	陈超 2024.10.28

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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。

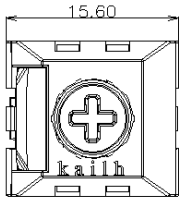
2. Product Application/产品应用：

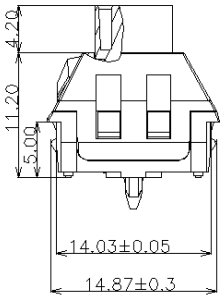
Mainly applied on computer keyboards, cash registers, industrial equipment and Man-Machine interface.
主要适用于电脑键盘，收银机、工业设备和人机界面。

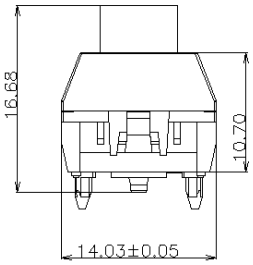
3. Technology Parameters/技术参数

Ambient Humidity 工作湿度：	45~85% R.H.；
Operating Temperature Range 使用温度范围：	-20℃～+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
Normal Condition 标准条件:	
Ambient temperature 环境温度：	20±2℃
Relative humidity 相对湿度：	65%±5% R.H.；
Air pressure 气压：	86~106KPa;

4. Profile Dimensions /外形尺寸

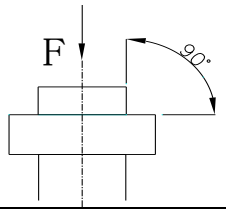




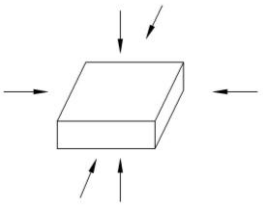


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5. Mechanical Performance/机械性能

Item 项目	Description 项目描述	Test Condition 测试条件	Requirement 规格要求
5.1	Total Travel 总行程	The Actuator shall be applied to the tip of actuator in operating direction to change component from free position to end point 按键轴沿操作方向从初始位置到最大行程位置时的距离	Refer to individual product drawing 参见产品图纸
5.2	Initial Force 初始力	A static load shall be applied to the tip of actuator in operating direction to change the component to initial position (0.3mm) 在操作元件末端沿操作方向均匀施加静载荷，使操作元件转换到 0.3mm 位置	Refer to individual product drawing 参见产品图纸
5.3	Static Strength 静止强度	A static load of 3kgf shall be applied in the direction of button operation for a period of 60 seconds. 在手柄动作方向施加 3kgf 的静负荷 60 秒，然后测试参数. 	No damage (mechanical) 机械性能正常.
5.4	Stem Pull Strength 手柄拉拔强度	Break by a pull force applied opposite to the direction of stem operation. 在推柄动作方向反向垂直施加拉力，使其破坏的程度.	5kgf Min

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5.5	Mechanical Shock 机械冲击	Measured by according to the below condition: (1) Acceleration: 80g 加速度 (2) Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles. 试验次数：每个方向 3 次，6 个方向共 18 次. 	No damage (mechanical) 机械性能正常.
5.6	Vibration 振动试验	Switch shall be secured to a testing machine by a normal mounting device and method. Switch shall be measured after following test.: 开关采用常规的安装方法牢固地安装在试验设备上，并在下述参数条件下进行试验: (1)Vibration frequency range 振频 = 10-55 Hz (2)Total amplitude 振幅 = 1.5mm (3)Sweep ratio 振动变化速率：10-55-10Hz Approx. 1 min.大约 1 分钟 (4)Method of changing the sweep vibration frequency: logarithmic or linear 变频方法：对数或线性形式 (5) Direction of vibration: Three perpendicular directions including actuating direction. 振动方向：三个相互垂直的方向，其中一个方向应是促动元件运动的方向 (6)Duration : 2 hours / direction (6 hours in total) 时间：每个方向 2 小时(共 6 小时)	No damage (mechanical) 机械性能正常.
5.	Life Test 寿命测试	1) Operation speed : 10 times / s 动作速度： 10 次/ 秒 2) Push force : 250gf 按力: 250gf 3) Operation number: 100,000,000cycles 动作次数: 100，000，000 次	Shall meet No.5.1~5.2 满足 5.1~5.2 要求.

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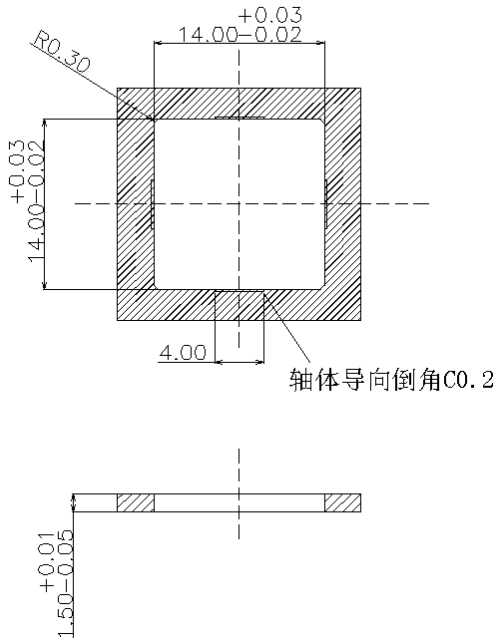
6. Environmental Performance/环境性能

<table>
<tr><th>Item
项目</th><th>Description
项目描述</th><th>Test Condition 测试条件</th><th>Requirement 规格要求</th></tr>
<tr><td>6.1</td><td>Cold test
耐寒性</td><td>(1) Temperature : - 20±2℃
温度： -20±2℃
(2) Duration of test: 48h
持续时间： 48 小时
(3) Take off a drop water 去掉水珠
(4) Standard conditions after test : 1h
试验后的放置条件：1 小时</td><td>Appearance:
No abnormality.
外观无异常
Shall meet No.5.1~5.2
满足 5.1~5.2 要求.</td></tr>
<tr><td>6.2</td><td>Heat test
耐热性</td><td>(1) Temperature : 70±2℃
温度： 70±2℃
(2) Duration of test: 48h
持续时间： 48 小时
(3) Take off a drop water 去掉水珠
(4) Standard conditions after test : 1h
试验后的放置条件：1 小时</td><td>Appearance:
No abnormality.
外观无异常
Shall meet No.5.1~5.2
满足 5.1~5.2 要求.</td></tr>
<tr><td>6.3</td><td>Temperature cycle
温度循环</td><td>(1) Test cycles: 5 cycles
试验周期：5 个周期
(2) Standard condition after test:1h
试验后的放置条件：1 小时
<table>
<tr><th></th><th>Temperature
温度</th><th>Duration of test
持续时间</th></tr>
<tr><td rowspan="4">1 cycle
一次循环</td><td>20±5℃</td><td>1h</td></tr>
<tr><td>-20±2℃</td><td>1h</td></tr>
<tr><td>20±5℃</td><td>1h</td></tr>
<tr><td>70±5℃</td><td>1h</td></tr>
</table></td><td>Appearance:
No abnormality.
外观无异常
Shall meet No.5.1~5.2
满足 5.1~5.2 要求.</td></tr>
<tr><td>6.4</td><td>Humidity test
耐湿性</td><td>(1) Temperature :40±2℃
温度：40±2℃
(2) relative humidity: 90~95% R.H.
相对湿度:90~95% R.H.
(3) Duration of test: 96h
持续时间：96 小时
(4) Take off a drop water
去掉水珠
(5) Standard conditions after test: 1h
试验后的放置条件：1 小时</td><td>Appearance:
No abnormality.
外观无异常
Shall meet No.5.1~5.2
满足 5.1~5.2 要求.</td></tr>
</table>

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6.5	Salt Mist Test 盐雾实验	The switch shall be checked after following test: 试件在下述实验后测量： 1.Temperature: 35±5° C 温度：35±5° C 2.Salt solution: 5±1%(Solids by mass) 盐溶液浓度：5±1%（质量百分比） 3.Duration: 24±0.5 hours, 试验时间：24±0.5 小时， 4.After immersing, salt deposit shall be removed by running water. 试验后，将盐沉积物用水冲掉。	Appearance: no corrosion spot , no crack , no base plate naked 外观：腐蚀点，无裂纹，无裸露基材

7. Mounting Opitions/安装选项：

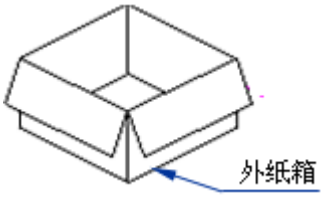


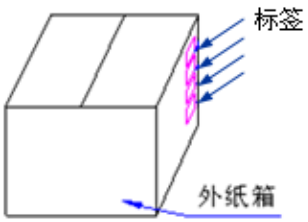
8.Packaging 包装

Packaging type: Tray, 1000Pcs/Tray, 4000Pcs/Carton.

包装方式: Tray 盘,1000Pcs/盘, 4000Pcs/箱.







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9. 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) 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.
保存标准为 3 个月，限度为 6 个月以内，请尽早使用. 打开包装后，有剩余品时，应将剩余部分以胶袋包装好以同外界隔离，请进行合适的防湿，防腐蚀气体等处理后进行保管.

(4) 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.
该规格书为客户与凯华公司产品在技术方面的共识，其他相关数据上与该规格书不一致的内容都是无效的.

(5) It will be considered that customer already confirmed and accepted this specification if customer issue purchase order to us directly.
无论顾客收到规格书后有没有信息反馈直接向我公司订货，我们将认为顾客对此产品已验证合格.

(6) 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.
本产品规格书从生效日起 1 年后，如果没有订货或再次申请最新规格书时请做无效处理.

(7) 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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