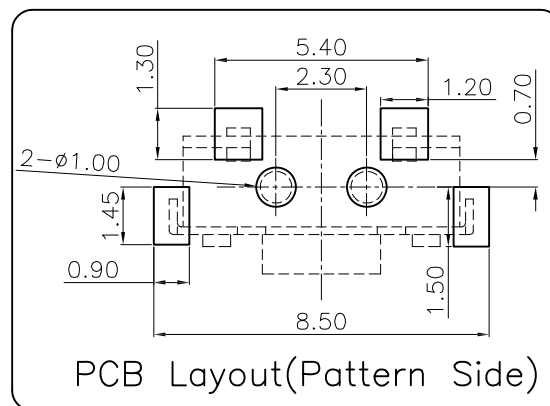
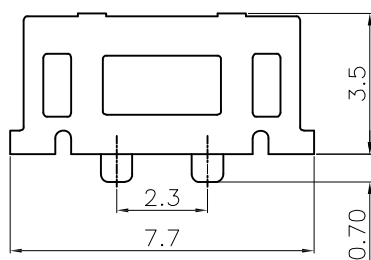
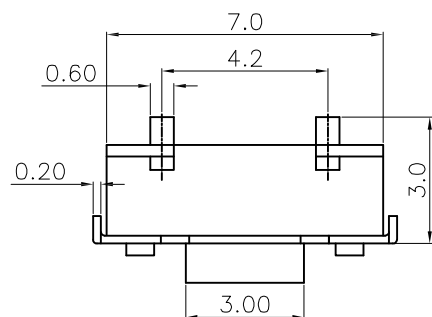
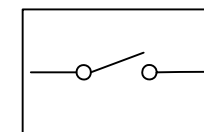
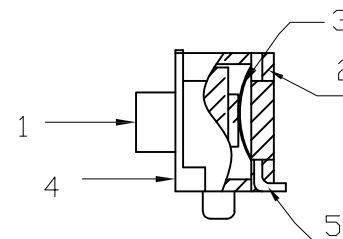
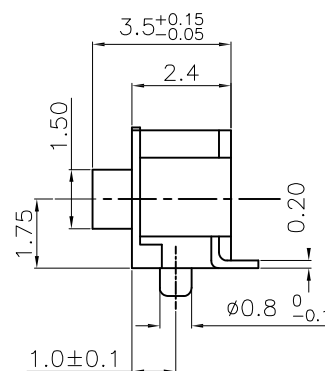


ABIDE BY ROHS



PCB Layout(Pattern Side)





Circuit Diagram

Specification :

- 1. Rating : DC12V 50mA
- 2. Contact Resistance : 100mΩ Max
- 3. Insulation Resistance : 100MΩ Min (DC250V)
- 4. Withstand Voltage : AC250V (50-60Hz) for 1 minute
- 5. Operation Force : 250 ± 50gf
- 6. Pre-Travel : 0.25 ± 0.1mm
- 7. Mechanical Life : 30,000 Cycles (min)

	TA703501S01	黑色	黑色
	TA703501S02	白色	黑色
	料 号	基座颜色	导芯颜色

1	Keystoke	——	1	Nylon	Black	
2	Base	——	1	Nylon	White	
3	Contact	——	2	Stainless steel	Plating Silver	——
4	Shell	——	1	Brass	Plating Tin	——
5	Terminal	——	1	Brass	Plating Silver	——
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	wanwenxue		Oct.28.2005			
CHECKED				TITLE:		Tach Switch
APPROVALS				PART NO.		CTA703501S01
TOLERANCES ARE	30<L	±0.30	ANGLE	UNIT: mm	SCALE: 1:1	PROJ: 
	10<L≤30	±0.20				
	5<L≤10	±0.15				
	L≤5	±0.10				
			±2°	DRAWING NO.	———	SHEET 1 OF 1

1. 一般特性 General Characteristics

- 1.1 额定值(Rating Value): DC12V 50mA
- 1.2 工作温度(Work Temperature Range): $-10^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- 1.3 存贮温度(Store Temperature Range): $-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$
- 1.4 正常测试条件(未有特殊说明量测在以下条件进行):

General test condition (Tests and measurements shall be made under the following standard conditions unless otherwise specified):

正常温度: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ 相对湿度: 45%~85% RH 气压: 8,600~10,600 帕
Temperature: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ Relative humidity: 45%~85% Air pressure: 8,600~10,600 pa

2. 产品外观及尺寸要求 Appearance & Dimension Requirement

- 2.1 产品外形结构紧凑, 无配合不良.
The structure of product is compact, and assembly of parts has no badness.
- 2.2 产品塑胶部件无严重缩水、披锋、欠注、斑点、破损或变形现象.
The plastic parts of product have no serious defects such as very serious shrink, scarcity, fleck, disrepair, transmutation, etc.
- 2.3 产品引脚和外壳无严重氧化、脏污、变形、毛刺或电镀不良.
Lead feet and shell have no serious defects such as oxidation, smudge, disrepair, burr, defects on plating.
- 2.4 开关操作顺畅, 节奏感强, 无明显卡塞现象.
Operating switch is unhindered, rhythmmed, and there is not palpable clag.
- 2.5 产品结构及尺寸参见产品规格图纸.
Construction and dimensions: Refer to individual product drawing.

3. 电气特性 Electronic Characteristics

No.	项 目 Item	测 试 方 法 Test Method	测试设备 Equipment	特 性 要 求 Requirements
3.1	接触电阻 Contact Resistance	在低电流 ($\leq 100\text{mA}$) 条件下测试. Measured at low current (100mA or less).	低电阻测试仪 Low Resistance Meter	$100\text{m}\Omega \text{ max}$
3.2	绝缘阻抗 Insulation Resistance	测试相邻引脚之间, 引脚与外壳之间的绝缘阻抗 (DC 250V). Measurement shall be made between adjacent terminals, between terminal and shell.	绝缘测试机 Insulation Resistance Tester	$100\text{M}\Omega \text{ min}$
3.3	耐压测试 Dielectric Withstand Voltage	输入一定电压 (50~60Hz, 电压值 AC 250V) 1 分钟, 漏电流为 2mA, 测试邻近端子间. Apply certain voltage (50~60Hz, AC 250V) for 1 minute between adjacent contacts of the connector with 2mA leakage sensitivity.	耐压测试机 Puncture Tester	没有绝缘破坏. 电弧等异常. No arcing, break down and damaging insulation.

4. 机械特性 Mechanical Characteristics

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
4.1	操 作 力 Operation Force	逐渐施力操作开关按键，测量开关到达全部工作行程时所需的最大操作力度。 Operate the keystroke of the switch and then increase press strength gradually, Measured maximum operation force while the travel of the switch is full.	测力计 Force Gauge	$250 \pm 50\text{gf}$
4.2	行 程 Full travel	垂直操作开关按键，量测开关顶端最大移动距离。 Operate the keystroke of the switch vertically, the travel distance of keystroke moving from its free position to maximum moving distance shall be measurement.	游标卡尺 Vernier Caliper	$0.25 \pm 0.1\text{mm}$

5. 可靠性测试 Reliability trial

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
5.1	可焊性试验 Solder ability Test	端子顶部被浸入焊锡炉中，温度为 $260 \pm 5^\circ\text{C}$ ，时间 5 ± 1 秒。 The top of the terminals shall be dipped in the solder bath at $260 \pm 5^\circ\text{C}$ for 5 ± 1 seconds.	控温锡炉 Solder Stove	引脚至少 95% 上锡。 95% percent of terminals shall be dipped.
5.2	寿命试验 Operation Life	开关在寿命试验设备上以约 20 次 / 分的速度连续被操作，具体次数见规格图示。 Switch shall be operated continuously at about 20 cycles /min without load.	寿命试验机 Life Tester	寿命：30,000 次 实验后：绝缘电阻： $10\text{M}\Omega$ Min 接触电阻：10 Max 操作力：变化在 $\pm 50\%$ 内 开关外观及结构无损坏。 Life test: 30,000 cycles After test: Insulation resistance: $10\text{M}\Omega$ Min Contact Resistance: 10 Max Operating force: Change should be within $\pm 50\%$ of specified value. No abnormalities shall be recognized in appearance and construction.

5. 可靠性测试 Reliability trial

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特 性 要 求 Requirements
5.3	耐焊接热 Resistance to Soldering heat	端子焊接部分浸入焊炉，焊炉温度 $260 \pm 5^{\circ}\text{C}$ ，焊接时间 5 ± 1 秒。（焊接时不可于端子施加外力）。 Terminals shall be dipped in the solder bath at $260 \pm 5^{\circ}\text{C}$ for 5 ± 1 seconds without additional force for terminals.	控温锡炉 Solder Stove	本体无变形，能满足于机械、电气性能。 Appearance should be not damaged, electrical and mechanical characteristics shall be satisfied.
5.4	耐高温测试 Resistance to Heat Test	放置在温度 $80 \pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。 The switch shall be stored at a temperature of $80 \pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.	高低温试验机 High & Low Temperature Tester	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.5	耐低温测试 Resistance to Cold Test	放置在温度 $-25 \pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。 The switch shall be stored at a temperature of $-25 \pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.	高低温试验机 High & Low Temperature Tester	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.6	耐湿性测试 Resistance to Humidity Test	放置于温度 $40 \pm 2^{\circ}\text{C}$ ，相对湿度为 90~96% 环境中 96 小时后，再置于正常条件下 1 小时后测定(注意要擦去水滴)。 The switch shall be stored at a temperature of $40 \pm 2^{\circ}\text{C}$, relative humidity 90~96% for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour (Wipe out water drip).	恒温恒湿箱 Temperature & Humidity Tester Chamber	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.7	盐雾实验 Salt Mist Test	试件在下述实验后测量： 1. 温度： $35 \pm 5^{\circ}\text{C}$ 2. 盐溶液浓度： $5 \pm 1\%$ （质量百分比）， 3. 试验时间： 8 小时， 4. 试验后，将盐沉积物用水冲掉。 The switch shall be checked after following test: 1. Temperature: $35 \pm 5^{\circ}\text{C}$ 2. Salt solution: $5 \pm 1\%$ (Solids by mass) 3. Duration: 8 hours, 4. After immersing, salt deposit shall be removed by running water.	盐雾试验机 Salt Spray Tester	在金属件上没有严重腐蚀斑点。 No remarkable corrosion shall be recognized in metal parts.

6. 注意事项 Precaution

6.1 浸焊条件 Soldering condition

项目 Item	条件 Condition
预热温度 Preheat temperature	110° C 以下(印刷基板焊锡面周围的温度) 110° C max (Embilomental temperature of soldering surface of P.W.E)
预热时间 Preheat time	60 秒以内. 60 sec max
助焊剂的面积 Area of flux	印刷机板厚度的 1/2 以内. 1/2 max of P.W.B thickness
焊锡温度 Temperature of solder	260° C 以下. 260° C max.
浸焊时间 Time of immersion	5 秒以内. Within 5 sec.
浸焊次数 Soldering number	2 次以内 (但应把第一次焊锡的温度降下来) Within 2 times (But should bring down heat of the first soldering)
印刷机板 Printed wiring board	单面铜箔 Single sided copper-clad laminates

- 1) 开关浸焊后, 注意不要用溶剂清洗.

After switches were soldered, please be careful not to clean sample with solvent.

- 2) 在使用烙铁的情况下, 焊锡温度应在 300° C 以下, 3 秒以内.

In the casw of using iron, soldering conditions shall be 300° C max and 3 sec.

- 3) 浸锡后注意不要在顶部施加负荷.

Right after sample were soldered; please be careful not to load on the knobs of switches.

6.2 设计中应注意的事项 Design instructions

- 1) 印刷机板的安装孔尺寸参见产品图.

Follow recommended P.W.B piercing plan in outside drawong page.

- 2) 击键部倾斜度在4度以内. Design inclination of key top 4 deg.

6.2 注意点 Note

- 1) 注意不要施加超负荷的压力或晃动开关.

Please be cautious not to give excessive static load or shock to switchs.

- 2) 开关焊接后, 印刷基板不要叠放.

Please be careful not to pole up P.W.B. after switches were soldered.

- 3) 保存时要注意避开高温高湿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.

Preservation under high temperature and high humidity or corrosove gas should be avoided especialluy. When you need to preserve for a long period, do not open the carton.

- 4) 产品符合 Rohs 和 WEEE 环境管制标准.

Control hazardous substance: The product should BE meet. Abide BY Rohs & WEEE Specification.