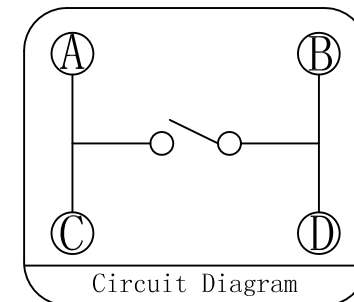
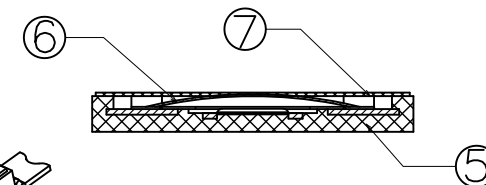
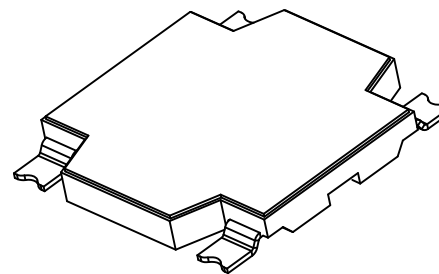
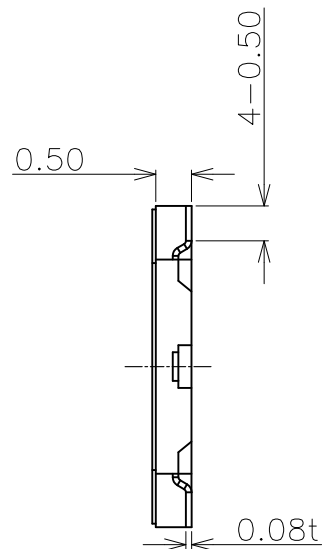
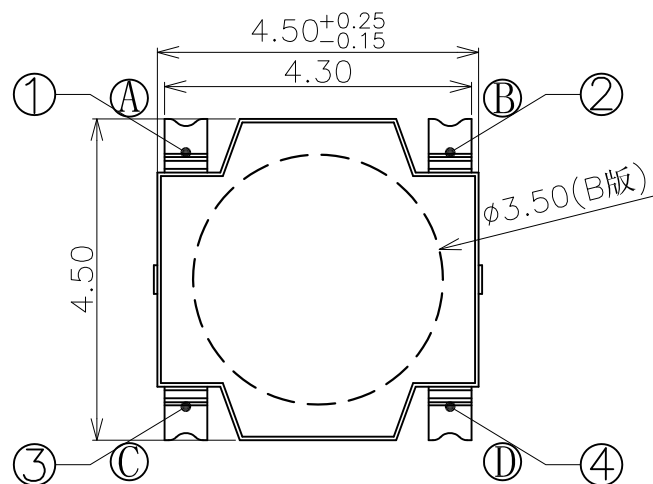
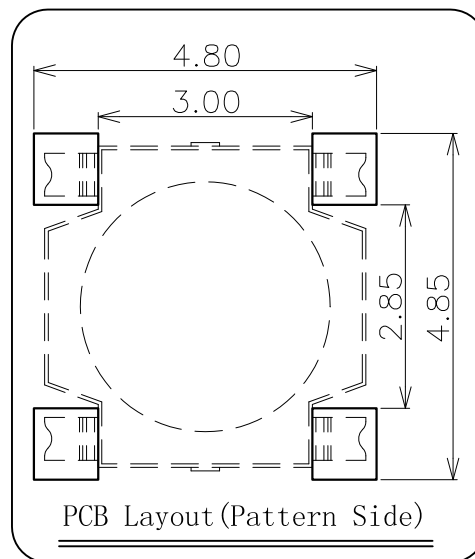
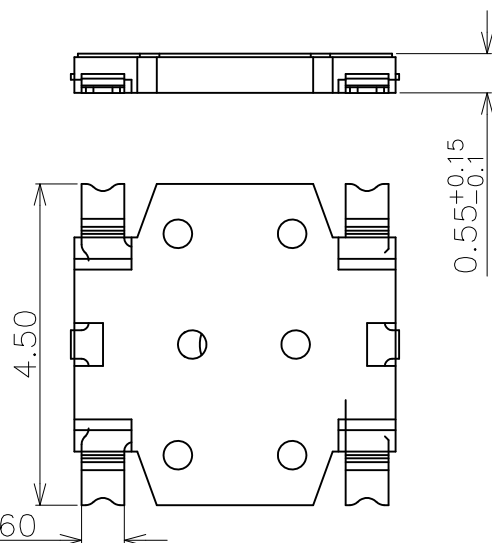


ABIDE BY ROHS



■ Specification :

- 1. Rated voltage: D.C. 15V 20mA and D.C. 2V 10uA
- 2. Contact Resistance: 100mΩ (Max)
- 3. Insulation resistance: 50MΩ (Min) DC100V
- 4. Dielectric strength: AC100V (50-60Hz) for 1 minute
- 5. Bouncing: NO: 3ms Max. OFF: 10ms Max.
- 6. Operation force: $1.57 \pm 0.29\text{N}$ ($160 \pm 30\text{gf}$)
- 7. Return force: 0.29N (30gf Min)
- 8. Travel closure: $0.2^{+0.1}_{-0.05}\text{mm}$
- 9. Life Test : 300,000 Cycles (min)



⑦	Polyimide Tape	——		PAI	Orange	UL94V-0
⑥	Shrapnel	——		Stainless Steel	Plating Silver	——
⑤	Base	——		PA10T	Black	UL94V-0
④	Terminal D	4	1	Phosphor bronze(0.08t)	Plating Silver	——
③	Terminal C	3	1	Phosphor bronze(0.08t)	Plating Silver	——
②	Terminal B	2	1	Phosphor bronze(0.08t)	Plating Silver	——
①	Terminal A	1	1	Phosphor bronze(0.08t)	Plating Silver	——
ITEM	PART NAME	TER'NO.	QTY.	MATERIAL	FINISHING	REMARK

APPROVALS			DATE		 DONGGUAN CITY KAIHUA ELECTRONICS CO.,LTD					
DRAWN		Wanwenxue		Feb.08.2010		Kailh				
CHECKED				TITLE:		TA4555-1 Membrane Switch				
APPROVALS				PART NO.		TA455501S01				
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.		KHA-TA4555-001EN	SHEET 1 OF 1		

ECN-1109-01 B 2011-9-2 为改善手感不一致问题, 将弹片规格由φ3.0变更为φ3.50

ECN NO.	REV.	DATE.	DESCRIPTION.	CHANGE.	CHECK.	APPRO.
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1. General specification 基本事项

- 1.1 Switch action
开关种类
- 1.2 Switch rating 最大额定值
- 1.3 Operation temperature range 使用温度试验范围
- 1.4 Storage temperature range 保存温度范围
- 1.5 Appearance and dimensions
外形及尺寸
- 1.6 Standard condition
试验、测定状态

: Push-on type S. P. S. T
: 轻触开关
: D. C. 15V 20 mA~DC2V 10uA
: - 20 ~ 70℃
: - 20~ + 60℃
: See outside drawing page
: 见外形尺寸图
Unless otherwise specified, the test and measurements shall be carried out as follows:

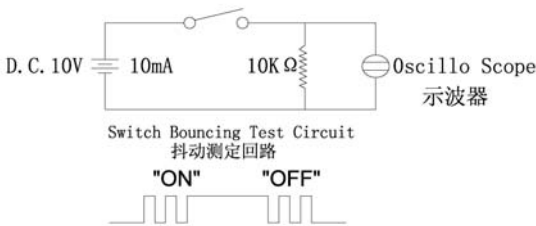
Ambient temperature 温度: 20±2℃
Relative humidity 相对湿度: 45 ~ 85
Air pressure 气压: 86 ~ 106kPa(860~1060mbar)
However, if doubt arises on the decision based on the measured
Values under the above-mentioned conditions, the following conditions shall be employed:

但是在对判定产生疑义时,按下述状态实施:

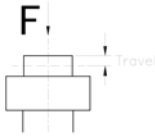
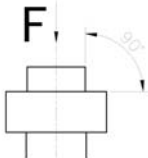
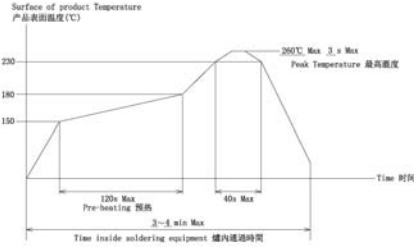
Ambient temperature 温度:20±2℃
Relative humidity 相对湿度: 65±5%
Air pressure 气压: 86 ~ 106kPa(860~1060mbar)

2. Performance 性能

2.1 Electrical characteristics 电气性能

No.	Item 项目	Test condition 试 验 条 件	Performance 规 格	
2.1.1	Contact resistance 接触电阻	Push force: (Operation force) x 2。 测定时的负荷：操作方向动作力基准值的2 倍。 Measurement tool : Contact resistance meter 测定器：微电流接触电阻计(1kHz, 20mV, 5~50mA)	100mΩ MAX 100mΩ 以下	
2.1.2	Insulation resistance 绝缘电阻	D. C. 100V(Between terminals) (端子间)	50MΩ min 50MΩ 以上	
2.1.3	Withstand voltage 耐电压	A. C100V for 1 min (Between terminals) (端子间)	No. insulation destruction. 无绝缘破坏.	
2.1.4	Bouncing 触点抖动	Operation speed : 3~4 times/s 操作速度： 每秒3~4 次 Oscillo scope 示波器 Switch Bouncing Test Circuit 抖动测定回路 	ON:3ms max 以下 OFF:10ms max 以下	
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2.2 Mechanical Characteristics 机械性能

No.	Item 项目	Test condition 试验条件	Performance 规格
2.2.1	Operation force 动作力	Push by recommended operating condition. (4.2) 按规定的操作条件施加压力 (4.2) 	Push force 按压力 $1.57\text{N} \pm 0.29\text{N}$ ($160\text{gf} \pm 30\text{gf}$) return force 回弹力 0.29N min (30gf min)
2.2.2	Travel to closure 动作行程	Push by recommended operating condition. (4.2) $F = (\text{Operation force}) \times 2$ 按规定的操作条件施加压力 $F = \text{动作力} \times 2$ 	$0.2 + 0.1 / - 0.05\text{mm}$
2.2.3	Push strength 按压强度	$50\text{N} (5\text{Kgf})$ for 15 sec $50\text{N} (5\text{Kgf})$ 15 秒 	No damage (Electrical and mechanical) 无异常 (电气、机械性能)
2.2.4	Pull strength 推压强度	Break by drawing push plate in the direction of right diagram 抽拔推杆使其破坏的强度.	20N min (2kgf min)
2.2.5	Vibration test 耐振性	1) Amplitude 全振幅: 1.5 mm 2) Sweep rate: $10\text{--}55\text{--}10\text{HZ}$ for 1 minute 扫描速度: $10\text{--}55\text{--}10\text{HZ}$ 1 分钟 3) Sweep method: Logarithmic frequency sweep rate 扫描方式: 对数频率扫描速度 4) Vibration direction: X, Y, Z (3 directions) 振动方向: X, Y, Z (3 方向) 5) Time: Each direction 2 hours (Total 6 hours) 时间: 每个方向2 个小时(共6 个小时)	No. 2.1 and 2.2.1 to 2.2.2 shall be satisfied 满足2.1 项和2.2.1 至 2.2.2 项.
2.2.6	Soldering heat test 耐焊接热	开关在 160°C 条件下预热 2 分钟后再于 260°C 的回流焊炉中焊接. Switches shall be heat up at 160°C for 2 minutes, then be soldered at 260°C Temperature profile (Reference) 	No damage (electrical and mechanical) 无异常。 (电气、机械特性)
2.2.7	Solderability 可焊性	After sprated flux / 涂上助焊剂后 temperature: $260 \pm 5^\circ\text{C}$ / 温度: $260 \pm 5^\circ\text{C}$ soldering time: $2 \pm 0.5\text{ sec}$ / 焊接时间: 2 ± 0.5 秒	70% or more of surface area of the portion immersed in solder shall be covered by new solder / 70% 或更多的浸焊面能被焊锡覆盖.
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2.3 Climatic characteristics 耐候性能

No.	Item 项目	Test condition 试验条件	Performance 规格												
2. 3. 1	Cold test 耐寒性	1) Temperature : - 40±2℃ 温度： - 40±2℃ 2) Duration of test: 96h 持续时间： 96 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	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall Be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、 2.2.1 到2.2.2 项.												
2. 3. 2	Heat test 耐热性	1) Temperature : 85±2℃ 温度： 85±2℃ 2) Duration of test: 96h 持续时间： 96 小时 3) Standard conditions after test : 1h 试验后的放置条件： 1 小时	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall Be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、2.2.1 到 2.2.2 项.												
2. 3. 3	Temperature cycle 温度循环	1) Test cycles :20 cycles 试验周期： 20 个周期 2) Standard condition after test :1h 试验后的放置条件： 1 小时 <table><tr><td></td><td>temperature 温度</td><td>duration of test 持续时间</td></tr><tr><td rowspan="4">1 cycle 一次 循环</td><td>20±5℃</td><td>1h</td></tr><tr><td>-40±2℃</td><td>1h</td></tr><tr><td>20±5℃</td><td>1h</td></tr><tr><td>85±5℃</td><td>1h</td></tr></table>		temperature 温度	duration of test 持续时间	1 cycle 一次 循环	20±5℃	1h	-40±2℃	1h	20±5℃	1h	85±5℃	1h	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、 2.2.1 到2.2.2 项.
	temperature 温度	duration of test 持续时间													
1 cycle 一次 循环	20±5℃	1h													
	-40±2℃	1h													
	20±5℃	1h													
	85±5℃	1h													
2. 3. 4	Humidity test 耐湿性	1) Temperature : 60±2℃ 温度： 60±2℃ 2) relative humidity: 90~95% 相对温度:90~95% 3) Duration of test: 96h 持续时间： 96 小时 3) 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	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall Be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、 2.2.1 到2.2.2 项.												
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No.	Item 项目	Test condition 试验条件	Performance 规格
2. 3. 5	Endurance (switching action) 耐久特性 (开关寿命)	1) D.C.15V 20mA resistance load D.C 15V 20mA 电阻负荷 2) Operation speed : 1 times / s 动作速度: 2-3 次/ 秒 3) Push force : Maximum value of operation force 按力: 动作力规格值的上限 4) Operation number: 300,000 times 动作次数:30万	Contact resistance 200m Ω max 接触电阻 200m Ω 以下 Bouncing: 10 ms max 触点抖动: 10 秒以下 Variation rate of operation force shall be within $\pm 30\%$ to the value before testing 动作力的变化范围在初始值的 $\pm 30\%$ 以内 No.2.1.2 and 2.2.2 shall Be satisfied 满足2.1.2 和2.2.2 项
2. 3. 6	Withstand H ₂ S 耐H ₂ S	1) Density : 3 $\pm$ 1ppm 浓 度 :3 $\pm$ 1ppm 2) Temperature : 40 $\pm$ 2 $^{\circ}$ C 温 度 : 40 $\pm$ 2 $^{\circ}$ C 3) Relative humidity : 90~95% 相对湿度: 90~95% 4) Duration of test : 24h 持续时间: 24 小时 5) Standard conditions after test : 1h 试验后的放置条件:1 小时	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、2.2.1 到 2.2.2 项.
2. 3. 7	Withstand SO ₂ 耐SO ₂	1) Density : 10 $\pm$ 2ppm 浓 度 :10 $\pm$ 2ppm 2) Temperature : 40 $\pm$ 2 $^{\circ}$ C 温 度 : 40 $\pm$ 2 $^{\circ}$ C 3) Relative humidity : 90~95% 相对湿度: 90~95% 4) Duration of test : 24h 持续时间: 24 小时 5) Standard conditions after test : 1h 试验后的放置条件:1 小时	Contact resistance 200m Ω max No. 2.1.2 to 2.1.4 and No. 2.2.1 to 2.2.2 shall Be satisfied 接触电阻 200m Ω 以下 满足2.1.2 到2.1.4 项、2.2.1 到 2.2.2 项.
2. 3. 8	Shock 耐冲击性	Measure after test at a condition below 在下列条件下进行测试后的量度 Peak acceleration:80G 冲击加速度:80G Test time-6direction ,each 3 times total 18 times 测试次数-6 个方向, 各3 次共计18 次。	No.2.1 and 2.2.1 to 2.2.2 shall be satisfied 第2.1 及2.2.1—2.2.2 都应符合要求
3. Marking Our identification mark , Date code 标识公司标记 Kailh or  or  Kailh			
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4. Precaution 注意事项

4.1 Soldering condition 浸焊条件

- 1) After switches were soldered, please be careful not to clean switches with solvent
开关浸焊后,注意不要用溶剂清洗.
- 2) In the case of using soldering iron, soldering conditions shall be 380℃ max and 3 sec. max
在使用烙铁的情况下,焊锡温度应在380℃ 以下、3 秒以内.
- 3) Right after switches were soldered; please be careful not to load on the knobs of switches.
浸焊后,注意不要在顶部施加负荷.

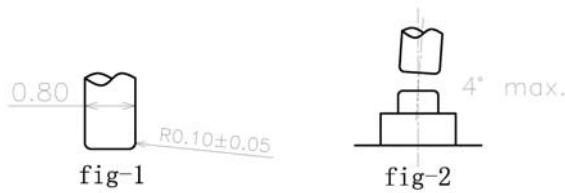
4.2 Design instructions(设计中应注意的事项)

- 1) Follow recommended P. W. B. piercing plan in outside drawing page.
印刷基板的安装孔尺寸参见产品图.
- 2) Design key top as fig -1. Design inclination of key top 4 deg. max as fig -2.(Recommended operating condition.)
击键部设计如图 -1,击键部倾斜度如图 -2 在4 度以内.(参见操作条件).

4.3 Note(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) Please be careful not to pile up P. W. B. after switches were soldered.
开关焊接以后,印刷基板注意不要叠放.
- 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.
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.
- 4) Panasert RH and RH6 shall be used as the standard insert machine (use N type clinch).
使用标准插入机器PANASERT 和RH6 (使用N 式钉)
- 5) CONTROL HAZARDOUS SUBSTANCE: THE PRODUCT SHOULD BE MEET ROHS SPECIFICATION.

产品应满足 ROHS 环境管理物质管制标准



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