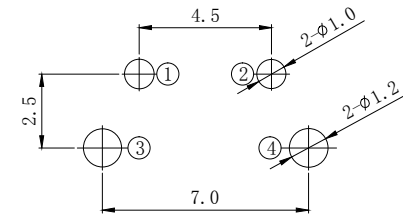
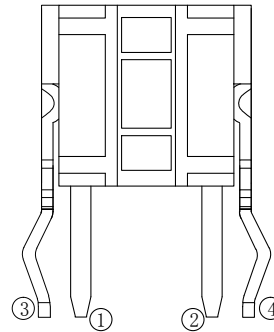
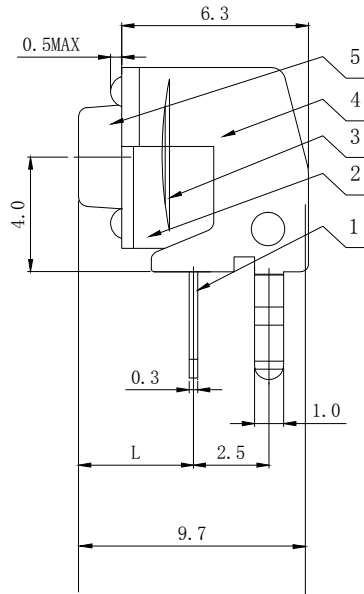
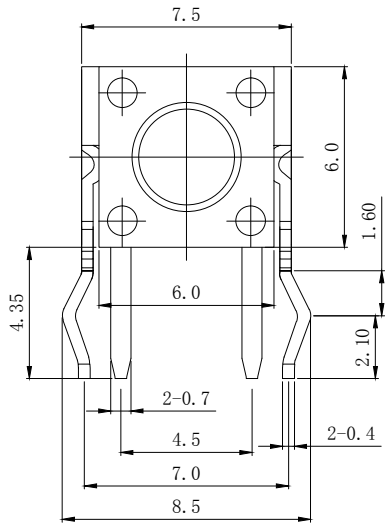
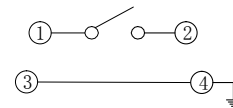
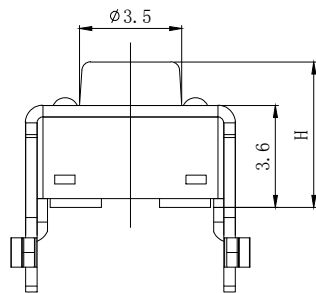


ITEM	H	L	
01	4.3	3.15	
02	5.0	3.85	√
03	5.5	4.35	
04	6.0	4.85	
05	6.5	5.35	
06	7.0	5.85	
07	7.5	6.35	
08	8.0	6.85	
09	8.5	7.35	
10	9.0	7.85	
11	9.5	8.35	
12	10.0	8.85	
13	11.0	9.85	
14	12.0	10.85	
15	13.0	11.85	
16	14.0	12.85	
17	15.0	13.85	
18	16.0	14.85	
...	



P. C. B. Layout



Circuit Diagram

Remarks:

- Rated current、Voltage: DC24V 50mA
- Contact resistance: $\leq 100\text{m}\Omega$
- Insulation resistance: $\geq 100\text{M}\Omega$
- The intensity of operations: $250 \pm 50\text{gf}$
- Life requirements: 100000次
- Withstand voltage: AC 250V 1分钟
- All materials comply with RoHS standards

NO.	PART NAME	MATERIAL	QTY	FINISHING	General Tolerance	DRAWN	YANGGUOQUAN			Product Name	Tact Switch	
7					$X \leq 1$	±0.05	AFFIRM	LIUMINGQIANG			Model Number	CTSA-6(7.0)K-V
5	Button	PPA	1	Black	$1 \leq X \leq 5$	±0.10	AUDITING				DATE	2019-01-05
4	Bracket	SPCC	1	Cu-Sn Plating	$5 \leq X \leq 10$	±0.15	SHEET	1:1	UNIT	mm		
3	Shrapnel	SUS	1	Ag Plating	$X > 10$	±0.25						
2	Housing	PPA	1	Black	ANGLE	±3°						
1	Terminal	Brass	2	Ag Plating								
						DEVETECH ELECTRONICS CO. LTD						

Version	ECM	Amendments	Modifier	Date Modified
A/0				

1. General specification 基本事项

1.1 Switch action 开关种类: Tact Switch 轻触开关

1.2 Switch rating 最大额定值: DC 12V, 50 mA

1.3 Operation temperature range 使用温度试验范围: - 20~ + 70°C

1.4 Preservative temperature range 保存温度范围: - 40~ + 85°C

1.5 Appearance and dimensions: See outside drawing page 外形及尺寸: 见外形尺寸图

1.6 Standard condition :Unless otherwise specified, the test and measurements shall be carried out as follows:

标准条件: 试验和测量应进行如下:

Ambient temperature 温度: 5 ~ 35°C

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:

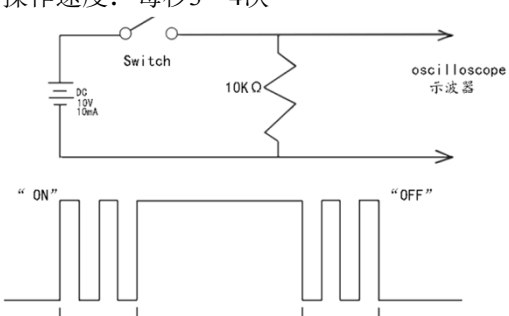
但是在对判定产生疑义时,按下述状态实施:

Ambient temperature 温度: 20±2°C

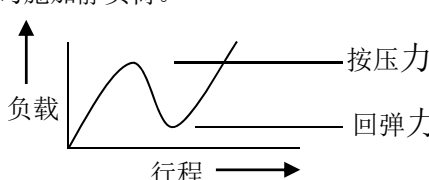
Relative humidity 相对湿度: 65±5%

Air pressure 气压: 86 ~ 106kPa(860~1060mbar)

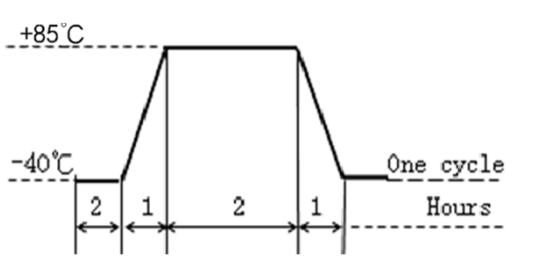
2. Performance 性能
2.1 Electrical characteristics 电气性能

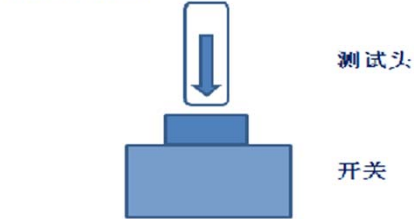
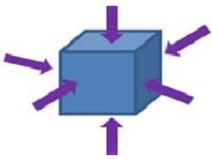
No. 序号	Item 项目	Test condition 试验条件	Performance 规格
2.1.1	Contact Resistance 接触电阻	Push force: (Operation force) x 2. 测定时的负荷: 操作方向动作力基准值的2倍 Measurement tool : Contact resistance meter 测定器: 微电流接触电阻计(1kHz, 20mV, 5~50mA)	100mΩ MAX 100mΩ 以下
2.1.2	Insulation Resistance 绝缘电阻	DC 250V(Between terminals) 不相接的两端子间、端子与塑胶间施加DC 250V的电压	100MΩ min 100MΩ 以上
2.1.3	Withstand Voltage 耐电压	AC 250V for 1 min (Between terminals) 不相接的两端子间、端子与塑胶间施加AC 250V的电压	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 	ON:3ms max 以下 OFF:8ms max 以下

2.2 Mechanical Characteristics 机械性能

No. 序号	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. 测量时在开关的顶端的面中央、按开关动作方向 均匀施加静负荷。 	Push force 按压力 2.48±0.49N(250±50gf) return force 回弹力 0.49N min (50gf 最小)
2.2.2	Travel to closure 动作行程	Push by recommended operating condition. F=(Operation force) x2 在开关的顶端的面中央沿开关动作方向施加2倍操作力 测量行程，测量仪器的顶端应平整	0.25±0.1mm
2.2.3	Push strength 按压强度	30N(3Kgf)for 1 minute 在开关驱动器件顶端的中央，在按压力方向加30N (3Kgf) 压力，作用60秒。	No damage(Electricaland mechanical) 无异常(电气、机械性能)
2.2.4	Terminal strength 端子强度	A static load of 300gf shall be applied to the tip of the terminal for 15 sec in any dircetion 在任意一个方向的顶端加上300gf力度测试,时间为15 秒.	No damage(Electricaland mechanical) 端子没有裂开，松动 等异常，满足 于机械,电器性能.
2.2.5	Vibration test 耐振性	1) Amplitude 全振幅: 1.5 mm 2) Sweep rate: 10-55-10HZ for 1 minute 扫描速度: 10-55-10HZ 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 2.2.2shall 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	Soldering area: t/2 of P.W.B. thickness (P.C.B:T=1.6mm) 焊接面积: 印刷基板的1/2 厚度处 Voluntarily soldering temperature : 260± 5°C 自动焊接温度: 260± 5°C soldering time : 5±1 sec. 焊接时间: 5 ±1 秒	No damage electrical and mechanical) 无异常。(电气、机械特性)
2.2.7	Solderbility 可焊性	After sprated flux 涂上助焊剂后 temperature : lead free:245±5°C;leady:235±5°C 温度: 无铅:245±5°C;有铅:235±5°C soldering time :3±0.5 sec 焊接时间: 3±0.5秒	90% or more of surface area of the portion immersed in solder shall be covered by new solder 90% 或更多的浸焊面积能被焊锡覆 盖.

2.3 Climatic characteristics 耐候性能

No. 序号	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: 200mΩ max 接触电阻: 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC.100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.2	Heat test 耐热性	1) Temperature : 80±2℃ 温度: 80±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: 200mΩ max 接触电阻 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.3	Temperature cycle 温度循环	According to following figure, after 5cycles, test after keeping in normal condition for 1h. 如图示环境中, 循环5次后, 放置在正常环境中, 1小时后进行测量。 	Contact resistance: 200mΩ max 接触电阻 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.4	Humidity test 耐湿性	1) Temperature : 60±2℃ 温度: 60±2℃ 2) relative humidity: 90~95% 相对湿度:90~95% 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	Contact resistance: 200mΩ max 接触电阻 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.

<p>2.3.5</p>	<p>Endurance (switching) action 耐久特性 (开关寿命)</p>	<p>1) Operation speed : 1 times / s 动作速度: 1 次/ 秒 2) Push force : Maximum value of operation force 按力: 动作力规格值的上限 3) Operation number: 100,000 times 动作次数: 100,000次</p> <p style="text-align: center;">安装示意图</p> 	<p>Contact resistance 200mΩ max 接触电阻 200mΩ以下 Bouncing: 10 ms max 触点抖动: 10毫秒以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. Variation rate of operation force shall be within ±30% to the value before testing 动作力的变化范围在初始值的±30%以内 No. 2.2.2 shall be satisfied 满足2.2.2项.</p>
<p>2.3.6</p>	<p>Withstand H₂S 耐H₂S</p>	<p>1) Density : 3±1ppm 浓度 : 3±1ppm 2) Temperature : 40±2°C 温度 : 40±2°C 3) Relative humidity : 90~95% 相对湿度: 90~95% 4) Duration of test : 12h 持续时间: 12小时 5) Standard conditions after test : 1h 试验后的放置条件: 1小时</p>	<p>Contact resistance: 200mΩ max 接触电阻 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.</p>
<p>2.3.7</p>	<p>Salt mist test 盐雾实验</p>	<p>At 5% nacl liquor for 24 hours hours depend on 35°C, after washing, keep in normal condition. 5%的nacl溶液, PH值: 6.5~7.2, 在35°C的条件下喷雾。铜材24小时, 铁材8小时。用水清洗干净后并在室温下晾干</p>	<p>No remarkable corrosion shall be recognized in metal part. 在金属件上没有腐蚀斑点。</p>
<p>2.3.8</p>	<p>Shock test 耐冲击性</p>	<p>Measure after test at a condition below 在下列条件下进行测试后的量度 Peak acceleration: 500m/S² 冲击加速度: 500m/S² Pulse duration 11ms 脉冲持续时间 11ms Test time-6direction ,each 3 times total 18 times 测试次数-6个方向, 各3次共计18次。</p> 	<p>Contact resistance: 200mΩ max 接触电阻 200mΩ以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.</p>

3. Precaution

注意事项

3.1 Soldering condition

浸焊条件

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

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 280°C max and 3 sec. max

在使用烙铁的情况下,焊锡温度应在280°C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.

3.2 Design instructions(设计中应注意的事项)

1) Follow recommended P. C. B. piercing plan in outside drawing page.

印刷基板的安装孔尺寸参见产品图.

3.3 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. C. 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.

备注: