

APPROVAL SPECIFICATIONS

Title. TACT SWITCH _____

Product Model. KAN0649-0601C1-C15/286 _____

Customer's Part NO. _____

Customer's Model: _____

Customer's Approval Requested.

Please return this copy as a certification of your approval.

Checked by: _____ Date: _____

Approved by: _____ Date: _____

APPROVE	REVIEW	POLT
Jack Wu	孙斌	徐明娥

Shenzhen Gangyuan Microkey Technology Co.,ltd

SPECIFICATION 规格书

Model Type: 类型型号:	TACT SWITCHES
Part No.: 料号:	KAN0649-0601C1-C15/286

1. Scope / 适用范围

This specification is applied to TACT SWITCH which is used for electric products.
本规格书适用于电子产品上的轻触开关。

2. Rated / 额定值

2-1. Practical temperature range: -25°C to $+70^{\circ}\text{C}$

适用温度范围: -25°C to $+70^{\circ}\text{C}$

Humidity range: 85% RH.MAX.

湿度范围: 85% RH.MAX.

2-2. Preservation temperature range: -25°C to $+70^{\circ}\text{C}$

保存温度范围: -25°C to $+70^{\circ}\text{C}$

Humidity range: 85% RH.MAX.

湿度范围: 85% RH.MAX.

2-3. Rated voltage and current: 12V DC, 50mA

额定电压和额定电流: 12V DC, 50mA

2-4. Appearance: No scratches, soil, rust or discoloration shall be observed.

外观: 表面无划伤、脏污、生锈或变色等现象。

3. Construction / 说明

3-1. Outline And Dimension / 外观和尺寸

Outline and dimension of the switches shown be as attached assembled drawing.

开关的外观和尺寸应与附件图纸相符。

3-2. Part And Material / 部件和材料

The parts and materials shown be in material identification sheet and certification of material.

部件和材料应与材料清单规格一致。

4. Electrical efficiency / 电气特性

Item 项目	Property 特性	Test condition 测试条件	Performance 判定
4-1	Withstand voltage 耐电压	The switch shall be withstood 250V (AC 50/60Hz RMS) between mutually insulated pin contacts for one minute. 在相互绝缘的接触脚之间, 开关能承受250V电压(AC 50/60Hz RMS)并持续1分钟。	No dielectric breakdown shall occur. 无击穿现象发生
4-2	Insulation resistance 绝缘阻抗	Using 250 volts DC insulation resistance meter between mutually insulated terminals 在相互绝缘的端子之间, 开关应能承受施加的250V直流电压。	100 M Ω MIN. 最小100兆欧
4-3	Contact resistance 接触阻抗	Between terminals of the switch to be made a closed circuit. 开关两个端子之间组成一个闭合的回路	100m Ω MAX. 不超出100毫欧

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5. Mechanical efficiency / 机械特性

Item 项目	Property 特性	Test condition 测试条件	Performance 判定
5-1	Actuating force 操作力	<p>Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem the maximum load required for the stem to come to a stop shall be measured.</p> <p>将开关之操作部位置于垂直方向，并在手柄的中央逐渐增加荷重直到手柄不动为止，量取施力期间之最大荷重值。</p>	250±50gf.
5-2	Return force 回复力	<p>The switch is installed such that the direction of switch operation is vertical and upon depression of the stem in its center the whole travel distance the force of the stem to return to its free position shall be measured.</p> <p>将开关之操作部位置于垂直方向，并在手柄的中央施力，使之移动全行程后再测量其回复至原来位置之力。</p>	60gf min.
5-3	Stem strength 手柄强度	<p>Placing the switch such that direction of switch operation is vertical the maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.</p> <p>将开关之操作部位置于垂直方向，并在手柄操作方向之相反方向，施加拉力，测量其最大抗拉力量。</p>	<p>There shall be no sign of damage mechanically and electrically.</p> <p>不得有电气及机械上的破坏之现象。</p>

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6. Solderability / 焊锡试验

Item 项目	Property 特性	Test condition 测试条件	Performance 判定
6-1	Resistance to soldering heat test 耐焊性试验	The switch terminal shall be dipped in solder under the condition as specified below: Temperature of solder: $260 \pm 5^{\circ} \text{C}$. Dip time: 5 ± 1 seconds. 端子浸入锡炉里, 按以下条件测试: 焊锡温度: $260 \pm 5^{\circ} \text{C}$ 浸入时间: 5 ± 1 秒	There shall be no sign of damage mechanically and electrically. 不得有电气及机械上的破坏之现象.
6-2	Soldering test 可焊性试验	Temperature of solder: $240 \pm 5^{\circ} \text{C}$. Time of dip: 3 ± 0.5 seconds. Length of dip: 2.5 mm(from top of terminal). 焊锡温度: $240 \pm 5^{\circ} \text{C}$. 浸入时间: 3 ± 0.5 秒 浸入深度: 2.5 mm(从端子顶部开始).	Areas of soldering shall be capable of 90% or more of dip terminal area. 端子顶端沾锡面积要求达到90%以上.

7. Environment test / 环境试验

Item 项目	Property 特性	Test condition 测试条件	Performance 判定
7-1	Cold test 低温试验	The switch shall be subjected to temperature of $-25 \pm 2^{\circ} \text{C}$ for a period of 96 hours ,then shall be allowed to remain in room ambient conditions for 30 minutes. 将开关放置在 $-25 \pm 5^{\circ} \text{C}$ 低温条件下持续96小时, 然后在室温条件下静置30分钟。	1. There shall be no sign of damage mechanically and electrically. 2. Contact resistance: $100 \text{m} \Omega$ max. 3. Insulation resistance $50 \text{M} \Omega$ min. 1. 不得有电气及机械上的破坏之现象. 2. 接触电阻: $100 \text{m} \Omega$ 最大. 3. 绝缘阻抗: $50 \text{M} \Omega$ 最小.
7-2	Heat test 高温试验	The switch shall be subjected to temperature of $80 \pm 2^{\circ} \text{C}$ for a period of 96 hours ,then shall be allowed to remain in room ambient conditions for 30 minutes. 将开关放置在 $80 \pm 2^{\circ} \text{C}$ 高温条件下持续96小时, 然后在室温条件下静置30分钟。	

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6. Solderability / 焊锡试验

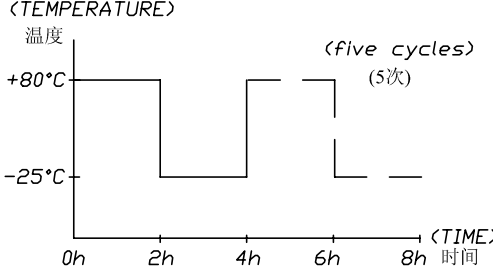
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7-2	Heat test 高温试验	The switch shall be subjected to temperature of $80 \pm 2^{\circ} \text{C}$ for a period of 96 hours ,then shall be allowed to remain in room ambient conditions for 30 minutes. 将开关放置在 $80 \pm 2^{\circ} \text{C}$ 高温条件下持续96小时, 然后在室温条件下静置30分钟。	

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7-3	Humidity test 耐湿试验	<p>The switch shall be subjected to temperature of $40 \pm 2^{\circ} \text{C}$ and relative humidity of 90% to 95% for a period of 96 hours. Upon completion of the exposure, dew drops shall be blown out and removed from the switch, after which the switch shall be conditioned at room ambient conditions for 30 minutes.</p> <p>将开关放置在温度为 $40 \pm 2^{\circ} \text{C}$，相对湿度为 90~95% 的环境下持续 96 小时。完成以上事项后，除去开关上的水珠，然后在室温条件下静置 30 分钟。</p>	<p>1. There shall be no sign of damage mechanically and electrically. 2. Contact resistance: $100 \text{m} \Omega$ max. 3. Insulation resistance $50 \text{M} \Omega$ min.</p> <p>1. 不得有电气及机械上的破坏之现象。 2. 接触电阻: $100 \text{m} \Omega$ 最大。 3. 绝缘阻抗: $50 \text{M} \Omega$ 最小。</p>
7-4	Temperature cycling test 温度循环试验	<p>The switch shall be subjected to conditions as shown in below, and then shall be returned and allowed to remain in ambient condition for 30 minutes.</p> <p>将开关放置于如下所示条件下进行试验,然后在室温条件下放置 30 分钟。</p> <div style="text-align: center;"> <p>(TEMPERATURE) 温度</p>  <p>(five cycles) (5次)</p> <p>(TIME) 时间</p> </div>	<p>1. There shall be no sign of damage mechanically and electrically. 2. Contact resistance: $100 \text{m} \Omega$ max. 3. Insulation resistance $50 \text{M} \Omega$ min.</p> <p>1. 不得有电气及机械上的破坏之现象。 2. 接触电阻: $100 \text{m} \Omega$ 最大。 3. 绝缘阻抗: $50 \text{M} \Omega$ 最小。</p>
7-5	Waterproof test 防水测试	<p>The switch shall be subjected to conditions as shown in below.</p> <p>Water temperature: 100°C Water depth: 10cm. Test time: 120 minutes.</p> <p>将开关放置于如下所示条件下进行试验。 水温: 100°C 水深: 10cm. 测试时间: 120 minutes.</p>	<p>1. There shall be no sign of damage mechanically and electrically. 2. Contact resistance: $100 \text{m} \Omega$ max. 3. Insulation resistance $50 \text{M} \Omega$ min.</p> <p>1. 不得有电气及机械上的破坏之现象。 2. 接触电阻: $100 \text{m} \Omega$ 最大。 3. 绝缘阻抗: $50 \text{M} \Omega$ 最小。</p>

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7-6	Salt mist test 盐雾试验	<p>Testing bath: The temperature shall be $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ in the ambient of the switch during the test.</p> <p>Spray apparatus: The apparatus shall be capable of producing fine dense mist uniformly.</p> <p>Salt water: The concentration of the salt water shall be adjusted at $5 \pm 1\%$ weight ratio at $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$.</p> <p>Testing time: 16 ± 0.5 hours.</p> <p>试验室: 在温度为 $35 \pm 2^{\circ}\text{C}$ 条件下进行测试</p> <p>喷雾设备: 设备应能承受均一浓度的盐雾</p> <p>盐水浓度: 在温度为 $35 \pm 2^{\circ}\text{C}$ 条件下, 盐水浓度为 $5 \pm 1\%$</p> <p>测试时间: 16 ± 0.5 小时</p>	<p>1. Appearance shall not be extremely rust.</p> <p>2. Contact resistance: $100\text{m}\Omega$ MAX.</p> <p>3. Insulation resistance $50\text{M}\Omega$ min.</p> <p>1. 外观没有明显的生锈现象。</p> <p>2. 接触电阻: : 最大 $100\text{m}\Omega$.</p> <p>3. 绝缘阻抗: $50\text{M}\Omega$ 最小.</p>
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8. Test condition / 测试条件

The test and measurement, unless otherwise specified, shall be carry out at a temperature of $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, relative humidity of $45\% \sim 85\%$, and atmospheric pressure of $86\text{kPa} \sim 106\text{kPa}$.
However, when any doubt arises on the judgment value under it, the test and measurement shall be carry out a temperature of $20 \pm 2^{\circ}\text{C}$, relative humidity of $60\% \sim 70\%$, and atmospheric pressure of $86\text{kPa} \sim 106\text{kPa}$.

除非另有指定, 否则测试和测量温度在 $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, 相对湿度在 $45\% \sim 85\%$, 气压在 $86\text{kPa} \sim 106\text{kPa}$ 条件下进行。

当在这个条件下判定出现疑问时, 测试和测量在 $20 \pm 2^{\circ}\text{C}$, 相对湿度 $60\% \sim 70\%$, 气压在 $86\text{kPa} \sim 106\text{kPa}$ 条件下进行。

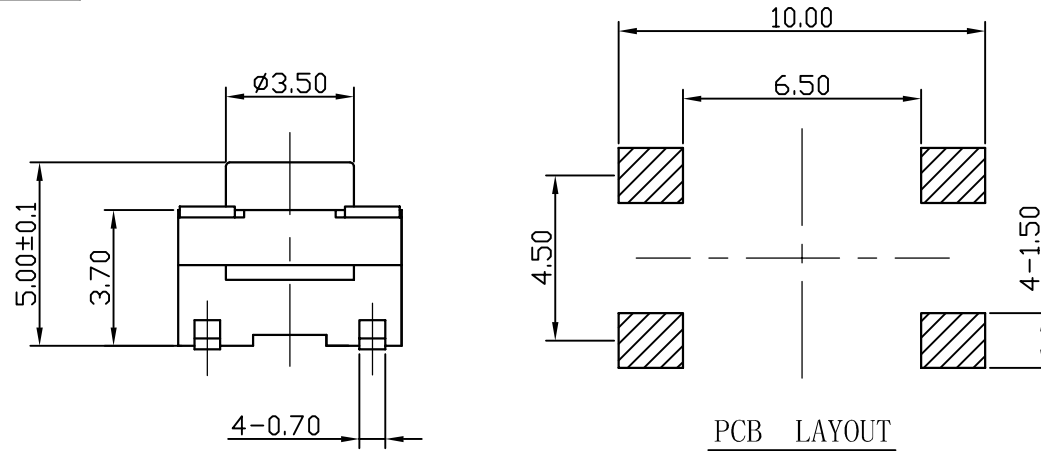
9. Amendment / 变更修正

When the amendment of this specification comes into necessity, it shall made by the mutual consultation and agreement between manufacture and customer.

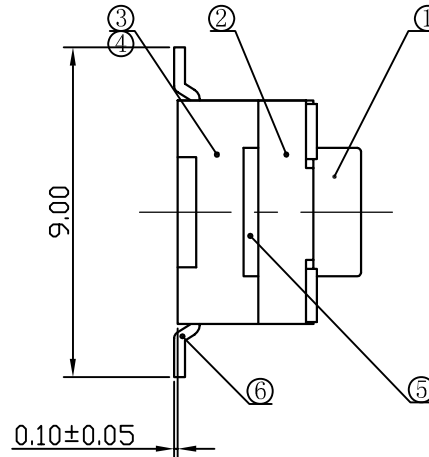
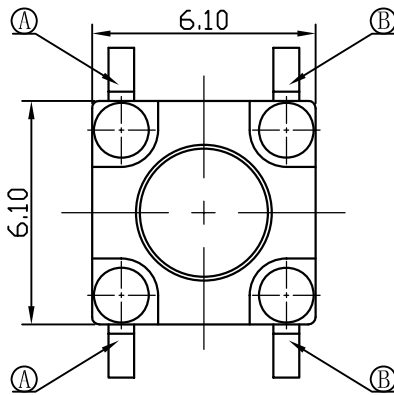
当有必要对规格书进行变更修正时, 应该在制造商和客户共同商议及同意后才可以进行。

※ This specification is state with Chinese & English, Chinese is preferential while doubt in interpretation.
规格书同时记入中英文, 但发生疑义的场所以中文优先。

版本	变更单号	描述	承办	日期
A		承认发行	杨石纓	



PCB LAYOUT
TOP VIEW



防 水

型号说明: KFC - 66 - T1 - 5 F

系列名称 — — — — — 手柄高度

规格代号 — — — — — 安装型式

轻触开关性能规格:

1. 电气性能
 - 1>接触电阻: 100mΩ max.
 - 2>耐 电 压: 250V AC, 漏电流1mA.
 - 3>绝缘电阻: 100MΩ min @100VDC.

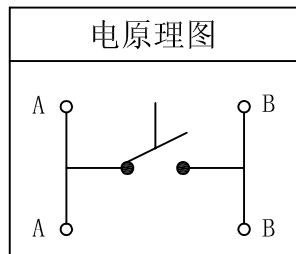
2. 机械性能
 - 1>机械寿命: 100000次.
 - 2>操 作 力: 250gf±50gf.
 - 3>回 复 力: 60gf min.

3. 环境性能
 - 1>适用温度: -25° C~+70° C.
 - 2>湿度范围: 85%RH max.
 - 3>产品符合RoHS环保要求.

技术要求:

1. 各零件安装正确, 不得有错装、漏装等不良现象.
2. 塑胶不得有裂纹, 飞边, 压伤等不良现象.
3. 端子不得变形, 压伤. 镀层不得有发黄脱落等现象.

序号	名称	材 料	数量	备注
⑥	端 子	黄铜H62 T=0.3	2	D. Ag
⑤	防水膜	硅胶		黑色
④	簧 片	进口覆银磷铜	1	覆银
③	基 座	PPA	1	黑色
②	盖 板	PPA	1	黑色
①	手 柄	PPA	1	黑色

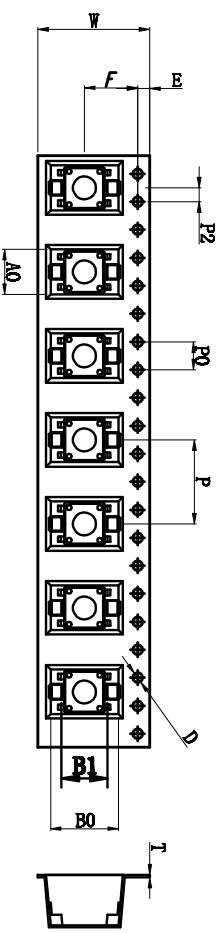


单位	尺寸公差	角度公差
	x.± 0.20	x°.± 2°
mm	.x± 0.20	.x'± 2°
	.xx± 0.20	.xx' 2°
设计		
审核		
工艺		
标准化		
批准		

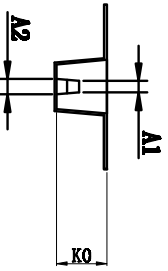
轻触开关	深圳市港源实业发展有限公司	
	图号: Q/GD5.556.193	
KAN0649-0601C1-C15/286	视角	重 量 比 例
	第 1 张	共 1 张

旧底图总号	
底图总号	
日期 签名	

REVISIONS	
NO.	RESERPTION DATE
A	Designed



User Direction of Unreeling



未标注斜角为: 5° .

ITEM	W	A0	B0	K0	P	F	E	D	P0	P2	T	A1	A2	B1
DIM	16.0 ^{+0.10} _{-0.10}	6.40 ^{+0.10} _{-0.10}	10.30 ^{+0.10} _{-0.10}	6.30 ^{+0.10} _{-0.10}	12.0 ^{+0.10} _{-0.10}	7.50 ^{+0.10} _{-0.10}	1.75 ^{+0.10} _{-0.10}	∅1.5 ^{+0.05} _{-0.05}	4.00 ^{+0.10} _{-0.10}	2.00 ^{+0.10} _{-0.10}	0.40 ^{+0.05} _{-0.05}	1.64 ^{+0.10} _{-0.10}	2.20 ^{+0.10} _{-0.10}	6.40 ^{+0.10} _{-0.10}
ALTERNATE														

1. 成品包装数量每盘700只;
2. 裁带编好后每空300mm左右, 后空 (包装后盘内固定端面) 200-300mm左右;
3. 裁带颜色为透明色。

深圳市港源实业发展有限公司

TITLE	编带型号: KAN0649-0601	UNIT	APPROVE
CUSTOMS		mm	AUDITING
FILE NO.		SCALE	DESIGN
		None	DATE