

ISO9001: 2000

ISO14001: 2004

APPROVAL SPECIFICATIONS

Title. TACT SWITCH

Part NO. KAN3547-0431C

Customer's Part NO. _____

Model: _____

Customer's Approval Requested.

Please return this copy as a certification of your approval.

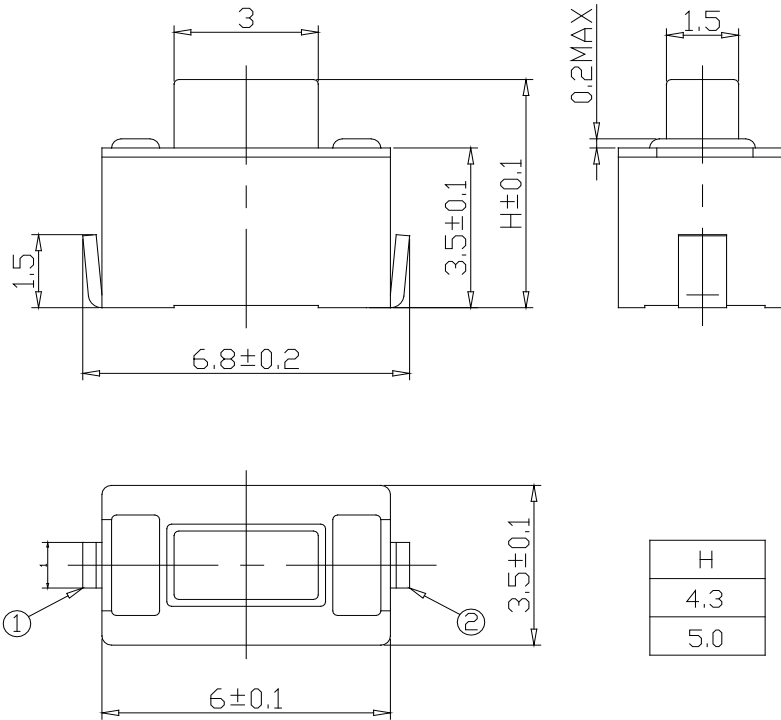
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Approved by: _____ Date: _____

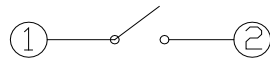
APPROVE	REVIEW	POLT
孙自波	李生勇	金成尧

WENZHOU GANGYUAN ELECTRONICS CO., LTD.

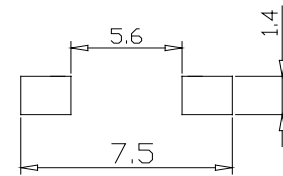
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H=4.3、5



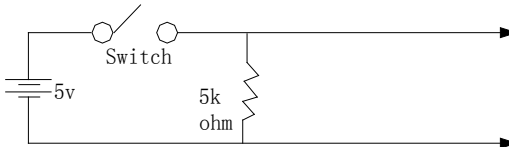
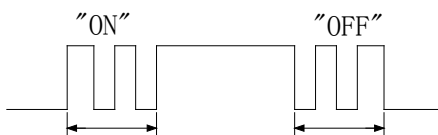
电路图



PCB. 焊接尺寸图

						Model No:	KAN3547-0431C		
						Name:	SMD Tact Switch		
标记	处数	分区	更改文件号	签名	年月日	阶段标记	重量	比例	港源电子有限公司
设计			标准化						
审核									
工艺			批准			共	张	第	张

TACT SWITCH SPECIFICATION (轻触开关规格书)						LANGUAGE										
						English /Chinese										
1.General specification 基本说明																
1.1 Scope 范围 This specification covers the requirements for single key switches which have no keytop (TACT SWITCHES:MECHANICAL CONTACT).此规范含盖单推柄和无推柄的轻触开关要求																
1.2 Operating Temperature Range 使用温度范围 -20 to70°C(normal humidity, normal press.) 正常湿度, 标准压力																
1.3 Storage Temperature Range 保存温度范围 -30 to80°C(normal humidity, normal press.)																
1.4 Test Conditions 测试条件 Tests and measurements shall be made in the following standard cnditions unless otherwise specified: 测试和计量按下列标准条件除非特殊说明 Normal temperature (temperature 5 to 35°C) 标准温度 Normal humidity (relative humidity 45 to85%) 正常湿气 Normal pressure (pressure 860 to 1060 mbars) 标准压力 In case any question arises from the judgement made, tests shall be conducted in the following conditions: <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Temperature</td> <td style="width: 30%;">(20±2°C)</td> <td style="width: 40%;">温度</td> </tr> <tr> <td>Relative humidity</td> <td>(65±5%)</td> <td>相对湿度</td> </tr> <tr> <td>Pressure</td> <td>(860 to 1060 mbars)</td> <td>压力</td> </tr> </table>								Temperature	(20±2°C)	温度	Relative humidity	(65±5%)	相对湿度	Pressure	(860 to 1060 mbars)	压力
Temperature	(20±2°C)	温度														
Relative humidity	(65±5%)	相对湿度														
Pressure	(860 to 1060 mbars)	压力														
2.APPEARANCE, STYLE, AND DIMENSIONS 外形,类型和尺寸																
2.1 Appearance 外形 There shall be no defects that affect the serviceability of the product.外形必须无缺陷才不影响产品适用性																
2.2 Style and Dimensions 类型和尺寸 Shall conform to the assembly drawings.符合装配图																
3.TYPE OF ACTUATION 动作类型 <u>Tactile</u> <u>feedback</u> 轻触返回																
4.CONTACT ARRANGEMENT <u>1 poles</u> <u>1</u> throws 接触形式 1 接点 1 回路 (Details of contact arrangement are given in the assembly drawings.) 细接点形式在装配图中																
5.MAXIMUM RATINGS DC <u>12</u> V <u>50</u> mA 最大额定值																
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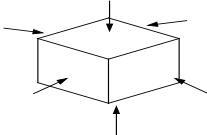
						TACT SWITCH SPECIFICATION (轻触开关规格书)			LANGUAGE	
									English /Chinese	
6.PERFORMANCE 性能										
6.1 Electrical 电气										
Item 项目			Test Condition 测试条件				Requirements 要求			
6.1.1. Contact resistance 接触电阻			Applying astatic load twice the actuating force to the center of the stem,measurements shall be made with a 1 kHz small-current contact resistance meter. 用两倍的动作用力作静负载施加于按钮的中心,并用 1 千赫小电流接触电阻仪测量				<u>100</u> m ohm max.			
6.1.2. Insulation resistance 绝缘电阻			Measurements shall be made following application of DC <u>100V</u> potential across terminals and across terminals and frame for one minute.在端子与端子之间,端子与外壳之间施加 DC100V,一分钟				<u>100</u> M ohm min.			
6.1.3. Dielectric withstanding voltage 电气耐压			AC <u>250V</u> (50Hz or60Hz) shall be applied across terminals and across terminals and frame for one minute. 在端子与端子之间,端子与外壳之间施加 AC250V(50HZ-60HZ)				There shall be no breakdown. 没有击穿			
6.1.4. Bounce 抖动			Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec.), Bounce shall be tested at "ON"and "OFF". 在正常使用中(以每秒 3-4 次周期)轻轻地在手柄中心加力,在通与断瞬间测试抖动				<u>5</u> m sec max.			
										
										
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		TACT SWITCH SPECIFICATION (轻触开关规格书)			LANGUAGE		
					English /Chinese		
6.2Mechanical 机械特性							
Item 项目		Test Condition 试验条件			Requirements 规格		
6.2.1. Actuating force 动作力		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. 开关的动作方向为垂直放置开关向推柄中心逐渐地增加负荷直到推柄停止时所测量的最大负荷			<u>250</u> ± <u>30</u> gf		
6.2.2. Travel 行程		Placing the switch such that the direction of switch operation is vertical and then applying a static load twice the actuating force to the center of the stem, the travel distance for the stem to come to a stop shall be measured. 开关的动作方向为垂直放置开关,并以双倍动作力的静负荷作用推柄中心,测推柄从开始到停止的行程距离			<u>0.25</u> ± <u>0.1</u> mm		
6.2.3. Return force 返回力		The sample 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. 开关的动作方向为垂直放置开关,在已有行程的推柄中心向上减小压力,推柄回到自由位置时所测量到的力			<u>50</u> gf min		
6.2.4. Stop strength 静止强度		Placing the switch such that the direction of switch operation is vertical, a static load of <u>3</u> kgf shall be applied in the direction of stem operation for a period of <u>60</u> seconds. 开关的动作方向为垂直放置开关,在推柄动作方向施加 3KG 的静负荷,60 秒时间			There shall be no sign of damage mechanically and electrically. 无机械的和电气的损伤迹象		
6.2.5. Stem strength 推柄的强度		Placing the switch such that the direction of switch operation is vertical, the maximum force to withstand a pull applied oppsite to the direction of stem operation shall be measured. 开关的动作方向为垂直放置开关,从推柄动作方向反方向施加拉力所测量到的最大承受力			<u>3</u> kgf		
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TACT SWITCH SPECIFICATION (轻触开关规格书)						LANGUAGE				
						English /Chinese				
6.3Environmental 环境										
Item 项目		Test Condition 测试条件				Requirements 要求				
6.3.1. Resistance to low temperatures 耐低温		Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 样品按下下列条件进行耐低温试验,测试前在正常温度和湿度条件下放置 1 小时 (1) Temperature: $-30\pm 2^{\circ}\text{C}$ 温 度 (2) Time: 96 hours 时 间 (3) Water drops shall be removed. 擦除水珠				Item 6.1 Item 6. 2.1 Item 6.2.2				
6.3.2. Heat resistance 耐热		Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 样品按下下列条件进行耐热试验,测试前在正常温度和湿度条件下放置 1 小时 (1)Temperature: $80\pm 2^{\circ}\text{C}$ 温 度 (2) Time: 96 hours 时 间				Item 6.1 Item 6. 2.1 Item 6.2.2				
6.3.3 Moisture resistance 耐潮湿		Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 样品按下下列条件进行耐潮湿试验,测试前在正常温度和湿度条件下放置 1 小时 (1) Temperature: $85\pm 2^{\circ}\text{C}$ 温 度 (2)Relative humidity: 80 to 85% 相对湿度 (3) Time: 500 hours 时 间 (1) Water drops shall be removed. 擦除水珠				Contact resistance: <u>50</u> m ohm max 接触电阻 Insulation resistance <u>10</u> M ohm min. 绝缘电阻 Item 6.1.3 Item 6.2.1 Item 6.2.2				
6.3.4. Temperature cycling 温度循环		Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made. 样品按下下列条件进行温度循环试验,测试前在正常温度和湿度条件下放置 1 小时 During this test, water drops shall be removed. 在试验期间,擦除水珠 <div style="text-align: center;"> <p>The diagram shows a temperature profile for one cycle. It starts at -10°C for 2 hours (2H), then ramps up to +60°C in 1 hour (1H), stays at +60°C for 2 hours (2H), and finally ramps down to -10°C in 1 hour (1H). The total duration is labeled as '1 Cycle'.</p> </div>				Item 6.1 Item 6. 2.1 Item 6.2.2				
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6.4 Endurance 耐久性

Item 项目	Test Condition 测试条件	Requirements 要求
6.4.1. Operating life 动作寿命	Measurements shall be made following the test set forth below: 按下列条件进行寿命试验 (1) DC 5V 5mA resistive load. DC 5V 5mA 阻性负载 (2) Rate of operation: 1 to 2 operations per second 动作频率: 1-2 次/每秒 (3) Depression: <u>210</u> gf 减压力 (4) Cycles of operation: 10×10^4 cycles 动作次数: 10×10^4 次	Contact resistance: <u>100 m</u> Ω max. 接触电阻 Insulation resistance : <u>10</u> M ohm min. 绝缘电阻 Actuating force: 动作力 + <u>30</u> % or - <u>30</u> % of initial force. $\pm 30\%$ 初始动作力 Item 6.1.3 Item 6.2.2
6.4.2. Vibration resistance 耐振动	Measurements shall be made following the test set forth below: 按下列条件进行抗振动试验 (1) Range of oscillation: 10 to 55Hz 频率范围 (2) Amplitude, pk-to-pk: 1.5 mm 振幅: 峰-峰 1.5mm (3) Cycle of sweep: 10-55-10Hz in one minute, approx. 扫描周期: 10-55-10Hz 约一分钟内 (4) Mode of sweep : Logarithmically sweep or uniform sweep. 扫描方式: 对数扫描式/恒定扫描 (1) Direction of oscillation: 振动方向 Three mutually perpendicular directions, including the direction of stem travel. 3个相互垂直方向, 包括推柄行程方向 (2) Duration of testing: 持续时间 2 hours each, for a total of 6 hours. 每方向 2 小时, 共 6 小时	Item 6.1 Item 6.2.1 Item 6.2.2
6.4.3. Impact shock resistance 抗冲击	Measurements shall be made following the test set forth below: 按下列条件进行冲击试验 (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 <div style="text-align: center;">  </div>	Item 6.1 Item 6.2.1 Item 6.2.2

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TACT SWITCH SPECIFICATION (轻触开关规格书)						LANGUAGE				
						English /Chinese				
7. Environmental Endurance 环境耐久性										
Item 项目		Test Condition 测试条件				Requirements 要求				
7.1. High temperature cycling 高温循环		Following ten cycles of high temperature test . Sample shall be Place in Normal temperature and humidity Condition for one hour before measurements are made. During this test, water drops shall be removed. 样品按下列条件进行高低温循环试验,测试前在正常温度和湿度条件下放置 1 小时,除去水珠 (2) Temperature (温度): -30°C~80°C (3) Cycling(周期): Ten cycles (10 个周期) <div style="text-align: center; margin-top: 10px;"> <p>The diagram illustrates one cycle of temperature cycling. It starts at -10°C for a 20-minute dwell. Then, it ramps up to 60°C over 10 minutes. It remains at 60°C for a 20-minute dwell. Finally, it ramps down back to -10°C over 10 minutes.</p> </div>				Item 6.1 Item 6. 2.1 Item 6.2.2				
7.2 (THB1) High temperature humidity Adds the Rated voltage(12v) electric current (50mA) 加额定电压电流在高温高湿下		Sampl following the test below both condition In the constant temperature and constant humidity testing box 样品按下列条件在恒温恒湿箱中进行试验 (1) T a= 8 5 °C (2) R H= 8 5 % (3) 5 0 0 h				Item 6.1 Item 6. 2.1 Item 6.2.2				
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TACT SWITCH SPECIFICATION (轻触开关规格书)						LANGUAGE				
						English /Chinese				
8.Use Endurance 使用耐久性										
Item 项目		Test Condition 测试条件				Requirements 要求				
8.1 Solderability 焊接性		Oven Temperature:235℃±5℃, Time: 5S±1S 锡炉温度: 235℃±5℃ 时间:5秒±1秒				Tin Area:90% 焊接面积 90%以上				
8.2 Patience high temperature 焊接耐热性		<p>Preheat: Temperature on the copper foil surface should reach 180℃, 2±0.3 minutes after The P.W.B entered into the soldering equipment 预热: 在 P.W.B(印刷线路板)进入焊接设备后, 2±0.3 分钟内铜箔表面要达到 180℃</p> <p>Soldering heat: Temperature on the copper foil surface should reach the peak temperature of 260℃ within 5 seconds after the P.B.W entered into soldering heat zone. 焊接温度: 在 P.W.B(印刷线路板)进入焊接温区 5 秒内, 铜箔表面达到峰值温度 260℃</p>				<p>表面无起泡,变型 Surface of plastics don't frothed And formed</p>				
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	TACT SWITCH SPECIFICATION (轻触开关规格书)	LANGUAGE
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9. Other precautions 其他注意事项

- (1) Following the soldering process,do not try to clean the switch with a solvent or the like.
进行焊接过程中，不可以用溶剂或类似品清洗开关
- (2) Safeguard the switch assembly against flux penetration from its topside.
防止助焊剂从开关的顶端渗入
- (3) Please have the products keep in close status and the storage time is 90 days guaranty after delivering the goods at most.
交货后保证开关处于封密状态并库存时间 90 天以上

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TACT SWITCH SPECIFICATION
(轻触开关规格书)

LANGUAGE

English /Chinese

11. REEL PACKAGING 盘装

1.1 Scope 范围

This specification covers the requirements of the reel packaging for SMD standard type of tact switches.
该规范包含 SMD 标准型拨动开关的绕带封装的要求

1.2 Packaging Materials 封装材料

Item	项目	Description	说明
Package	包装	Cartons	卡通箱
Reel	转轴	Delete Cartons	可降解箱
Carrier Tape	载带	Polypropylene	聚丙烯

1.3 Packaging Quantity 封装数量

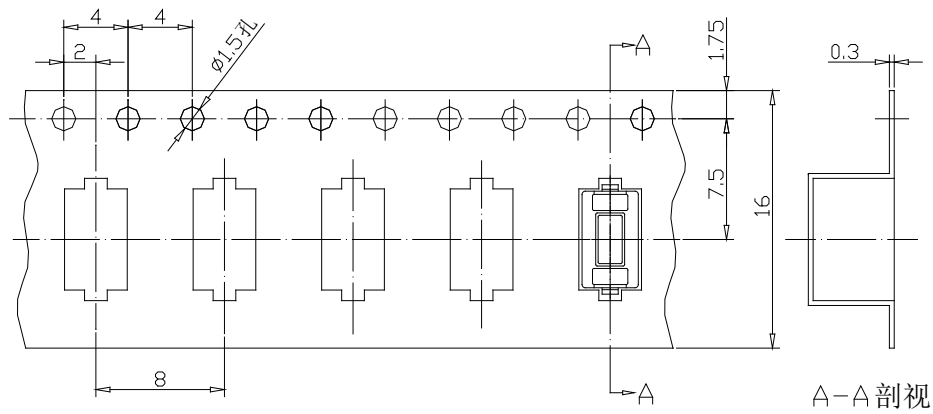
1.3.1. The number of the reels. 转轴数量

Twenty (20) reels at maximum. Which contain 30k pcs switches.
Shall be packed in a package. 一箱装 20 盘,有 30K 只产品

1.3.2 The number of the switches. 产品数量

1.5 k pcs switches shall be packed in a reel. 一个转轴包 1.5K 只产品

1.3.3 It should be noted that we regard two cartons 对出口包装需注意用两个箱子包装 mentioned above as on package for export.



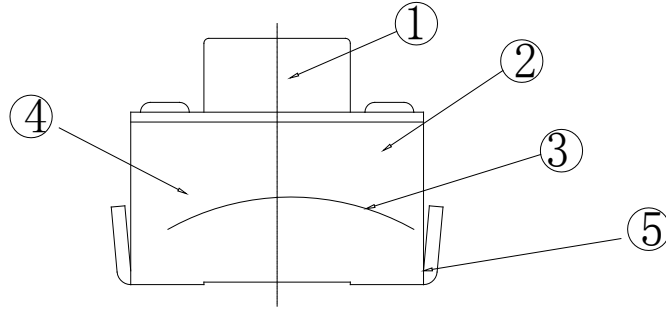
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TACT SWITCH SPECIFICATION

(轻触开关规格书)

LANGUAGE

English /Chinese



ITEM 项目	COMPONENTS 部 件	MATERIAL ARTICLE 材 料	SPECIFICATION 规 格
1	STEM	FR52	TE250F6
2	HOUSING	SUS	304
3	CONTACT	AG-SUS301	Ag=0.5u
4	FRAME	FR52	C230K
5	TERMINAL	TIN PHOSPHORUS BRONZE	Qsn6.5-01
	PLATE LAYER	CYANIDE SILVER-PLATING	SILVER
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