

东莞市皓富电子科技有限公司

DONGGUAN HAOFU ELECTRONIC TECHNOLOGY CO., LTD

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规格承认书

APPROVAL SHEET

客 户:

CUSTOMER _____

品 名:

DESC. 轻触开关

型 号:

PARTNO. TD-54XA-1.5 3*3*1.5 贴片 130gf

客户型号:

CUST. NO _____

承认单位 DEPT.	采购部 PURCHING	品管部 QC	研发工程部 R&Q	零件承认单 APPROVAL SLGNET
审核 CHECK				
确认 APPOVAL				

审核结果:

INSPEC. RESULT

合格

ACCEPT

不合格

REJECT

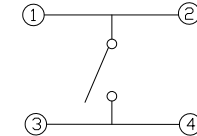
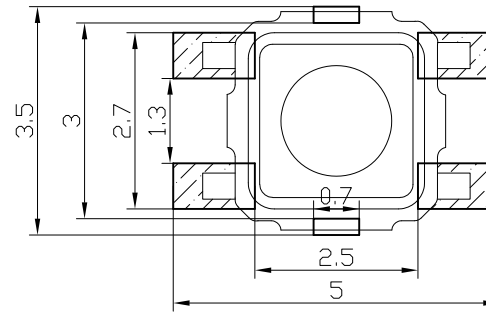
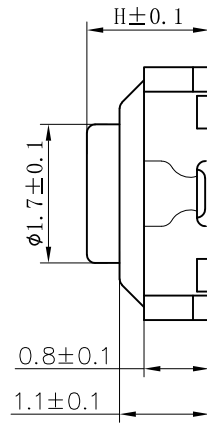
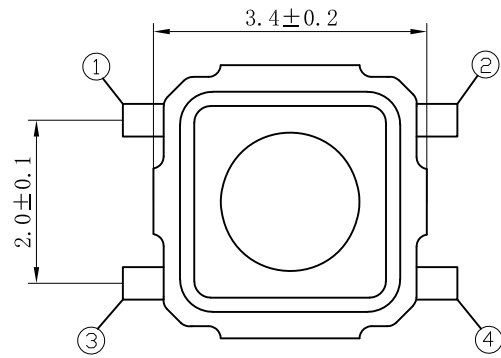
说明

EXPOS: _____



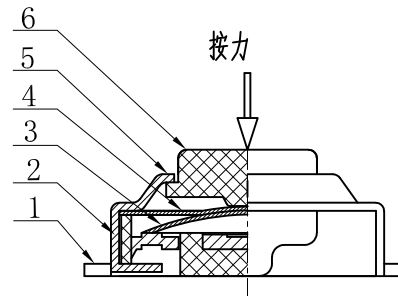
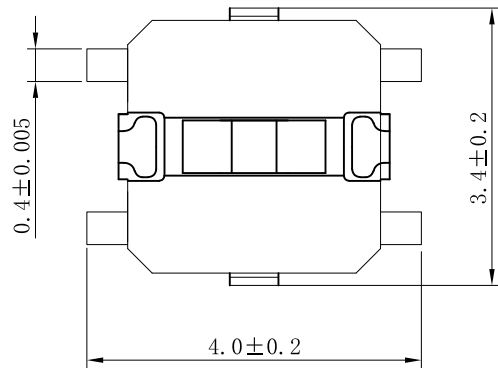
联络人: 范英志 日期: 2022-03-04

工程部



PCB 板焊盘尺寸

电路图



高度	PCS/盘
H=1.5mm	4000
H=1.6mm	4000
H=1.7mm	4000
H=2.0mm	4000
H=2.5mm	3000

NO.	NAME	MATERIAL	FINISHING
1	TERMINAL	phosphorous bronze	Silver plating
2	CASE	LCP	Black
3	CONTACT	SUS301	Silver plating
4	Waterproof membrane	PI	Yellow
5	COVER	SUS304	White
6	STEM	LCP	Black

SPECIFICATIONS				
Operating temperature rangs		-30° to +85°		
Rating		DC 12V 50mA Max.		
Contact Resistance		100mΩ Max		
Dielectric strength		250V AC for 1min.		
Travel		0.15±0.1mm		
Operating Force		1	2	3
		130±30gf	160±40gf	260±40gf
Operating Life(cycles)		50,000	100,000	100,000

HAOFU ELECTRONCS TECHNOLOGY CO.,LTD

.X: ±0.20 X': ±8"
.XX: ±0.10 .X': ±5"
.XXX: ±0.05 .XX': ±2"

PART NO.: TD-54XA-H

APPD.
CHKD. CHECK
DR. DRAW

PART NO.: PART_NO
DRW. NO.: DRW_NO
FINISH: --- MAT'L: ---
SCALE: 1:1 | REV.: A0 | UNIT: MM | PAGE: 1-1

TACT SWITCH SPECIFICATION(轻触开关说明书)

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 to 70 °C(normal humidity, normal press).正常湿度，标准压力

1.3 Storage Temperature Rang 保存温度范围
-20 to 80 °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 to 85%) 正常湿气

Normal pressure (pressure860 to 1060 mbars) 标准压力

In case any question arises from the judgement made, tests shall be conducted in the following conditions:

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

Tactile feedback 轻触返回

4. CONTACT ARRANGEMENT 1 poles 1 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 12 V 10 mA 最大额定值

						APPD	CHKD	DSGD	TD-54XA-1.5 130gf
									1/7
ZONE	SYMB	DATE	APPD	CHKD	DSGD				

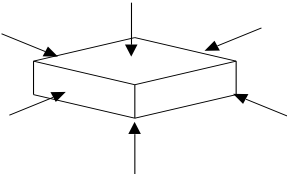
TACT SWITCH SPECIFICATION(轻触开关说明书)

6.3 Environmental 环境

Item 项目	Test Condition 试验条件	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: 样品按下列条件进行耐低温试验, 测试前在正常温度和湿度条例上放置 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: $80\pm 10^{\circ}\text{C}$ 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: $60\pm 2^{\circ}\text{C}$ 温度 (2) Relative humidity: 90 to 95% 相对湿度 (3) Time: 96 hours 时间 (4) Water drops shall be removed 擦除水珠	Contact resistance: 100 m ohm max 接触电阻 Insulation resistance 100 M ohm min. 绝缘电阻 Item 6.1 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;"> </div>	Item 6.1 Item 6.2.1 Item 6.2.2							
	APPD CHKD DSGD	TD-54XA-1.5 130gf							
ZONE	SYMB	DATE	APPD	CHKD	DSGD	APPD	CHKD	DSGD	4/7

TACT SWITCH SPECIFICATION(轻触开关说明书)

6.4 Endurance 耐久性

Item 项目	Test Condition 试验条件	Requirements 要求
<p>6.4.1. Operating Life 动作寿命</p>	<p>Measurements shall be made following the test set forth below:</p> <p>(1)DC 5V 5mA resistive load . DC 5V 5mA 阻性负载</p> <p>(2) Rate of operation : 2 to 3 operations per second 动作频率: 2-3 次/每秒</p> <p>(3)Depression : 260±50 gf 动作力</p> <p>(4) Cycles of operation : 50,000cycles 动作次数 50,000</p>	<p>Contact resistance: 50mΩ max 接触电阻</p> <p>Insulation resistance 100MΩmin. 绝缘电阻</p> <p>Actuating force: 动作力 + <u>30</u> % or -<u>30</u>%of initial force. ±30%初始动作力</p> <p>Item 6.1.3 Item 6.2.2</p>
<p>6.4.2. Vibration Resistance 耐振动</p>	<p>Measurements shall be made following the test set forth below: 按下列条件进行抗振动试验</p> <p>(1) Range of oscillation : 10 to 55 Hz 频率范围</p> <p>(2) Amplitude,pk-to -pk : 1.5mm 振幅: 峰-峰 1.5mm</p> <p>(3) Cycle of sweep : 10-55-10Hz in one minute, approx</p> <p>(4) Mode of sweep : Logarithmically sweep or</p> <p>(5) uniform sweep. 扫描周期: 10-55-10-Hz 约一分钟内</p> <p>(6) 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</p> <p>(7) Duration of testing 持续时间 2 hours each ,for a total of 6hours. 每方向 2 小时, 共 6 小时</p>	<p>Item 6.1 Item 6.2.1 Item 6.2.2</p>
<p>6.4.3. Impact Shock Resistance 抗冲击</p>	<p>Measurements shall be made following the test set forth below: 按下列条件进行冲击试验</p> <p>(1) Acceleration : 80g 加速度</p> <p>(2) Cycles of test :3 cycles each in 6 directions,</p> <p>(3) for a total of 18cycles 试验次数: 每个方向 3 次, 6 个方向共 18 次</p> <div style="text-align: center;">  </div>	<p>Item 6.1 Item 6.2.1 Item 6.2.2</p>

						APPD	CHKD	DSGD	TD-54XA-1.5 130gf	
									5/7	
ZONE	SYMB	DATE	APPD	CHKD	DSGD					

TACT SWITCH SPECIFICATION(轻触开关说明书)

7. Conditions for soldering 焊接条件

Reflow soldering conditions 回流焊条件

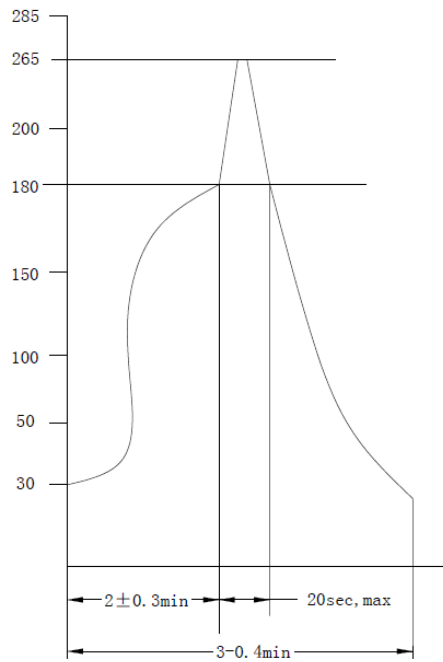
Preheat: Temperature on the copper foil surface should reach 180°C, 2±0.3 minutes after

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°C

Soldering heat: Temperature on the copper foil surface should reach the peak temperature of 265°C within 20 seconds after the P.W.B entered into soldering heat zone.

焊接温度: 在 P.W.B(印刷线路板)进入焊接温区 20 秒内, 铜箔表面达到峰值温度 265°C



Time inside soldering Equipment

Temperature Profile

						APPD	CHKD	DSGD	TD-54XA-1.5 130gf	
									6/7	
ZONE	SYMB	DATE	APPD	CHKD	DSGD					

TACTING SWITCH SPECIFICATION

7.1 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不超过 90 天以上

						APPD	CHKD	DSGD	TD-54XA-1.5 130gf	
ZONE	SYMB	DATE	APPD	CHKD	DSGD					7/7