



东莞市健阳达电子有限公司  
DONGGUAN CHIPSEN ELECTRONICS TECHNOLOGY CO., LTD

承 認 書  
SPECIFICATION FOR APPROVAL

客戶名稱：  
(CUSTOMER.) \_\_\_\_\_  
零件名稱：  
(DESCRIPTION) TACT SWITCH  
貴公司料號：  
(CUSTOMER PT/NO.) \_\_\_\_\_  
健阳达料號：  
(J.Y.D PT/NO.) TS-TP66H4.3 SMD 开关  
提樣編號：  
(SAMPLES SUBMIT NO.) S20210419001  
發行版本：  
(ISSUE REVISION.) A/0

貴公司承認印鑑 (APPROVED BY) :   (确认后请回传)	本公司發行印鑑 (APPROVED BY) :
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日期： 2021 年 04 月 19 日  
DATE YEAR MONTH DAY

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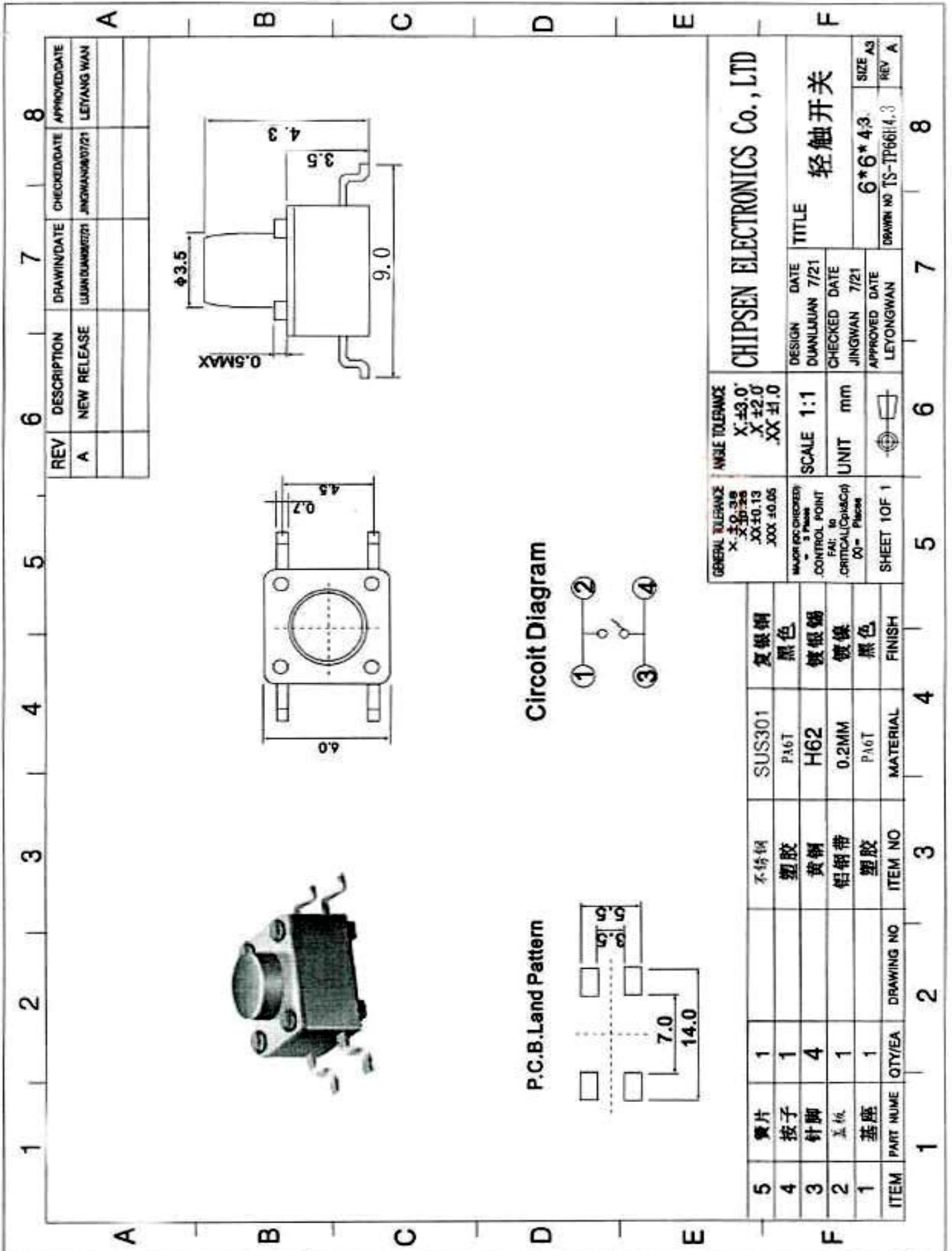
**Deviation and History**

*Please note items listed below does not meet your specifications and requires your consent for deviation:*

Item	Customer specification	Suggestion specification
1		
2		
3		
4		

Remarks:

6				
5				
4				
3				
2				
1	A/0		Chu	2021.04.19
Item	Rev	Description	Sign	Date

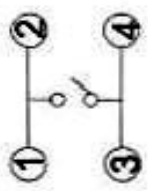


REV	DESCRIPTION	DRAWN/DATE	CHECKED/DATE	APPROVED/DATE
A	NEW RELEASE	LIJIAN/DUAN/07/21	JINGYANG/07/21	LEYANG WANG

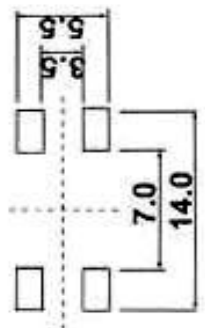
GENERAL TOLERANCE		ANGLE TOLERANCE	
X: ±0.30	X': ±3.0°	X: ±0.13	X': ±2.0°
XX: ±0.13	XX': ±1.0°	XXX: ±0.05	XXX': ±1.0°
MAJOR DIM. DIMENSION		SCALE 1:1	
3 Places		UNIT mm	
CONTROL POINT		SHEET 1 OF 1	
FAI: 10		DRAWN NO TS-TP6614.3	
CRITICAL(Critical Cp) 00= Places		APPROVED DATE	
		LEYONGWANG	
		TITLE	
		轻触开关	
		SIZE A3	
		6*6*4.3	
		REV A	

ITEM	PART NAME	QTY/EA	DRAWING NO	ITEM NO	MATERIAL	FINISH
5	簧片	1		3	不锈钢	复银铜
4	按子	1		4	SUS301	黑色
3	针脚	4		4	塑胶	镀银锡
2	基板	1		4	H62	镀镍
1	底座	1		4	0.2MM	黑色
				4	PA6T	黑色

Circuit Diagram



P.C.B. Land Pattern





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TACT SWITCH 检验标准:

MODELSERIESNAME 系列名稱		TACT SWICHTH	
MODEL NO 產品型號		TS-TP66H4. 3开关	
1、RATING 額定值		DC 50V 0.1A	
2、ELECTRICAL CHARACTERISTICS 電氣性能規格			
ITEM 項目	TEST CONDITIONS 測試條件		PERFORMANCE 規格
2.1	CONTACT RESISTANCE 接觸電阻	MEASURED AT 1KHZ SMALL CURRENT (100MA OR LESS) 在1KHZ 微小電流(100MA 以下)測試	20MΩ MAX 20毫歐以下
2.2	INSULATION RESISTANCE 絕緣電阻	APPLY A VOLTAGE OF 500V DC SHALL BE APPLIED FOR 1MIN AFTER WHICH MEASUREMENT BE MADE: (1) BETWEEN TERMINALS (2) BETWEEN INDIVIDUAL TERMINALS AND FRAME 輸入500V DC 電壓1分鐘, 按以下接觸方法測試: (1) 排腳相互之間; (2) 排腳與外殼之間.	100MΩ MIN 100兆歐以上
2.3	DIELECTRIC STRENGTH 耐電壓	AC 500V rms(50-60HZ) FOR 1 MIN TRIP CURRENT: 0.5MA (1) BETWEEN TERMINALS (2) BETWEEN INDIVIDUAL TERMINALS AND FRAME 輸入 AC 500V(50-60HZ) 電壓1分鐘, 感度電流為0.5MA, 按以下接觸方法測試: (1) 排腳相互之間; (2) 排腳與外殼之間.	WITHOUT DAMAGE TO PARTS ARCING OR BREAKDOWN, ETC. 沒有絕緣破裂等異常
3、MECHANICAL CHARACTERISTICS 機械性能規格			
ITEM 項目	TEST CONDITIONS 測試條件		PERFORMANCE 規格
3.1	OPERATING FORCE 動作力		250gf ± 50gf
3.2	TERMINAL STRENGTH 端子強度	A STATIC LOAD OF 300gf SHALL BE APPLIED TO THE TERMINAL FOR 15 SEC. IN ANY DIRECTION 在排腳前端任意一個方向加300gf 力度測試, 時間為15秒	ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED WITHOUT DAMAGE OR EXCESSIVE LOOSENESS OF TERMINALS 在排腳中沒有裂開, 鬆動等異常, 滿足於機械、電器性能
3.3	DISPLACEMENT OF ACTUATOR (KNOB) 柄強度	A STATIC LOAD OF 10N(1KGF) SHALL BE APPLIED TO THE OF THE ACTUATOR (KNOB) AND THEN DISPLACEMENT SHALL BE MEASURED TO THE DIRECTION OF THE ARROW 在柄的前端施加1KGF 的度, 位移應沿印記的方向上定	THE LEVER SHALL HAVE NO SERIOUS DEFORMATION AND FUNCTION IS NORMALLY 柄部無嚴重變形, 可以正常工作

## 4、ENDURANCE CHARACTERISTICS 耐久性

ITEM 項目	TEST CONDITIONS 測試條件	PERFORMANCE 規格
4.1  LIFE TEST 壽命試驗	Measurements shall be made following the test set fourth below: (1)DC 6V 5mA,resistive load. DC 6V 5ma 阻性负载 (2)Rate of operation:2 to 3 operations per second 动作频率: 15~18cycles/1 minute (3)Depression: 250gf±50 动作力 (含测试杆的总负重) (4)Cycles of operation: >=30, 000cycles 动作次数>=30,000,测试做 5000cycles 停止检查样品状态后继续测试, 依此循环到目标次数, 测试过程检查样品状态。	(1) WITHOUT DAMAGE TO PARTS ARCING OR BREAKDOWN ETC 測試後外表無損傷, 並且滿足機械性能
4.2  SOLDERABILITY TEST 可焊性試驗	THE TOP OF THE TERMINALS SHALL BE DIPPED 2MM THE SOLDER BATH OF 230±5°C FOR 3±0.5 SECONDS 端子頂部被浸入錫焊池中2MM 深溫度為 230±5°C 時間為3±0.5秒	THE AREA OF SOLDERING SHOULD BE OVER 75% 焊接面積要有75%以上
4.3  RESISTANCE TO SOLDERING HEAT TEST 耐焊性試驗	Preheat: Temperature on the copper foil surface should reach 110°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 110°C SOLDER BATH METHOD: SOLDER TEMPERATURE 260±5°C IMMERSION TIME 3±0.5 SECI IMMERSION DEPTH UP TO THE SURFACE OF THE BOARD 1.6MM DIMENSIONS OF COMPONENT HOLES IN THE PRINTED WIRING BOARD SHALL BEING ACCORDANCE WITH THOSE SPECIFIED IN THE SPECIFICATION 焊爐焊接的時候溫度控制在260±5°C, 過爐時間 3±0.5秒, 於(基板)厚度為1.6MM	WITHOUT DEFORMATION OF CASE OR EXCESSIVE LOOSENESS OF TEMINALS ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED 本體無變形, 能滿足於機械, 電器性能
4.4  COLD TEST 耐冷試驗	THE SWITCH SHALL BE STORED AT A TEMPERATURE OF -25±3°C FOR 48 HOURS, THEN THE SWITCH SHALL BE MAINTAINED AT STANDARD ATMOSPHERIC CONDITIONS FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE 放置在溫度 -25±3°C 中48小時後, 再放置常溫常濕中1小時來進行測試	THERE SHALL BE NO DEFORMATION OR CRACKS IN MOLDED PART 外觀無異常, 滿足於機械, 電器性能



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4.5	HEAT TEST 耐熱試驗	THE SWITCH SHALL BE STORED AT A TEMPERATURE OF 70±2°C FOR 48 HOURS, THEN THE SWITCH SHALL BE MAINTAINED AT STANDARD ATMOSPHERIC CONDITIONS FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE 放置在溫度 80±2°C 中48小時後, 再放置常溫常濕 中1小時來進行測試	THERE SHALL BE NO DEFORMATION OR CRACKS IN MOLDED PART 外觀無異常, 滿足於機械, 電器性能
4.6	HUMIDITY TEST 潮濕試驗	THE SWITCH SHALL BE STORED AT A TEMPERATURE OF 40±2°C AND A HUMIDITY OF 90% TO 95% FOR 96 HOURS THEN THE SWITCH SHALL BE MAINTAINED AT STANDARD ATMOSPHERIC CONDITIONS FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE 放置40±2°C 的相對濕度90%-95%環境中96小時後, 再將樣板放在正常環境1小時後進行測試 UNLESS OTHERWISE SPECIFIED	THERE SHALL BE NO DEFORMATION OR CRACKS IN MOLDED PART 外觀無異常, 滿足於機械, 電器性能
4.7	STANDARD ATMOSPHERIC CONDITIONS 測試標準狀態	AND TESTS ARE AS FOLLOWS: (1) AMBIENT TEMPERATURE: 5°C TO 35°C (2) RELATIVE HUMIDITY: 45% TO 85% (3) AIR PRESSURE: 86Kpa TO 106Kpa 在沒有指定的情況下測試溫度、濕度、氣壓如下: (1) 溫度為 5°C ~ 35°C (2) 濕度為 45% ~ 85% (3) 氣壓為86Kpa ~ 106Kpa	
4.8	PRACTICAL TEMPERATURE RANGE 使用溫度範圍	-16°C ~ +60°C 在 -16°C ~ +60°C 內使用	

5、規格及尺寸 ;參見圖紙

6.MATERIAL LISTING 材料清單: 參見圖紙


7.Weather proof characteristics 耐候性能			
No	Item 项目	Test Method 实验方法	Criteria 标准
7.1	Salt mist 盐雾试验	<p>The switch shall be checked after following test:</p> <p>(1) Temperature:35±2℃ (2) Salt solution:5±1%(Solids by mass) (3) Duration: 12±1hour</p> <p>After test, salt deposit shall be removed by running water.</p> <p>试件在下列实验后测量:</p> <p>(1) 温度:35±2℃ (2) 盐溶液浓度:5±1%(Solids by mass) (3) 时间: 12±1hour</p> <p>实验后的盐沉积物用水冲掉擦拭完成。</p>	<p>No remarkable corrosion shall be recognized in metal part.</p> <p>在金属件上没有大于 5%明显腐蚀斑点.</p>
7.2	Temperature Cycling 温度转换	<p>DC Voltage 1.5 times as much as rated voltage shall be applied continuously between adjacent at 60±2℃and 90~95%RH for 500hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1hour after that, water drops shall be eliminated.</p> <p>试件每个相邻端子之间连续加载 1.5 倍于额定电压的直流电压 60±2 ℃90~95%RH 的温控箱内保持 500 小时,然后在正常温度和湿度下恢复 1 小时,并在此后 1 小时内对试品进行测量,水滴应消失.</p>	<p>After test contact resistance:100mΩMax Insulation resistance:10mΩMin</p> <p>The electrical performance requirements specified in item 4.3 shall be satisfied.</p> <p>The switch shall be free from abnormalities in appearance construction.</p> <p>试验后: 接触电阻:100mΩMax 绝缘电阻:10mΩMin</p> <p>电气性能符合第 4.3 条件的要求,开关外观及结构应无损坏/</p>



TACT SWITCH TEST REPORT

4. Endurance 耐久性

Item 项目	Test Condition 试验条件				Requirements 要求		测试结果
4.1 Operating Life 动作寿命	Measurements shall be made following the test set fourth below: (1)DC 6V 5mA,resistive load. DC 6V 5Ma 阻性负载 (2)Rate of operation:2 to 3 operations per second 动作频率: 15~18cycles/1 minute (3)Depression: 250gf±50gf 动作力 (4)Cycles of operation: ≥30, 000cycles 动作次数≥30,000,测试做到要求次数即停止.				(1) WITHOUT DAMAGE TO PARTS ARCING OR BREAKDOWN ETC 测试後外表無損傷, 並且滿足機械性能		PASS
测试样品	1	2	3	4	5	6	
测试结果 大于	30,000	30,000	30,000	30,000	30,000	30,000	

7. Weather proof characteristics 耐候性能

Item 项目	Test Method 实验方法				Criteria 标准		测试结果
Salt mist 盐雾试验	The switch shall be checked after following test: (4) Temperature:35±2℃ (5) Salt solution:5±1%(Solids by mass) (6) Duration: 12±1hour After test, salt deposit shall be removed by running water. 试件在下述实验后测量: (4) 温度:35±2℃ (5) 盐溶液浓度:5±1%(Solids by mass) (6) 时间: 12±1hour 实验后的盐沉积物用水冲掉擦拭完成。				No remarkable corrosion shall be recognized in metal part. 在金属件上没有大于5%明显腐蚀斑点.		PASS
测试样品	1	2	3	4	5	6	
测试结果	洗净无明显 腐蚀斑点	洗净无明显 腐蚀斑点	洗净无明显 腐蚀斑点	洗净无明显 腐蚀斑点	洗净无明显腐 蚀斑点	洗净无明显 腐蚀斑点	
	APPD		CHKD		DSGD		
	朱志勇		林金勇		TS-TP66H4.3 开关		