



规格书

SPECIFICATION

CUSTOMER NAME	客户名称:	
CUSTOMER NO.	客户编号:	
SERIES	系 列:	轻触开关
MODEL NO.	型 号:	XB-TS-904
DRAWING NO.	图 形 号:	Tact Switches

If specification of this product meets your request, please confirm all the items of it and return to us with signature and stamp, it will be basis of our production and record. Thanks your cooperation in advance!

若此产品规格符合贵司要求，敬请确认此规格书内所有项目
并签名和盖章后回传给我司，以作我司产品制作之

依据和存档之用，多谢合作！

EXAMINE & APPROVAL 审批

APPROVE 接受	NOT APPROVE 不接受
 SIGNATURE 签署 STAMP 盖章 DATE 日期	

PREPARED BY.制表人	CHECKED BY.校对	APPROVED BY.审核	APPROVAL BY.批准
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Quality core! Afterburner for Made in China!



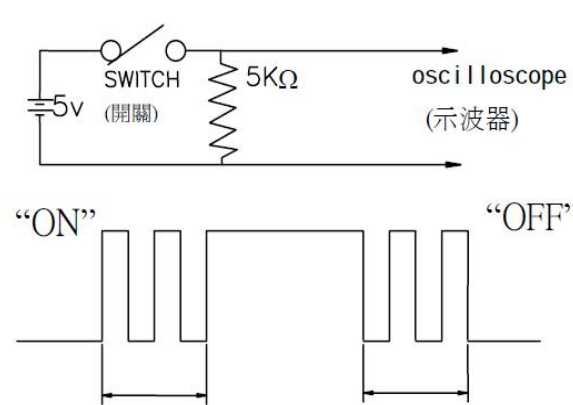
东莞市溪榜电子有限公司

DONG GUAN XI BANG ELECTRONICS CO., LTD

SPECIFICATION 规格书		DOCUMENT NO 文件编号	XB-SPEC-TS075
		EDITION 版本	A/0
		DATE 日期	2011.02.25
WRITTEN 编制	叶细路	APP'D 审批	
SERIES 系列	TACT SWITCH	MODEL NO 型号	XB-TS-904
1.General 一般事项 1.1 Operating Temperature Range $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$ (normal humidity normal press.) 使用温度范围: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$ (常湿常压条件下) 1.2 Storage Temperature Range $-30 \sim +80^{\circ}\text{C}$ (normal humidity normal press.) 存放温度范围: $-30 \sim +80^{\circ}\text{C}$ (常湿常压条件下) 1.3 Test conditions : The standard test conditions shall be $5 \sim 35^{\circ}\text{C}$ in temperature $45 \sim 85\% \text{ RH}$ and $860 \sim 1060 \text{ mbar}$ in atmospheric pressure. Should any doubt arise in judgement, tests shall be conducted at $20 \pm 2^{\circ}\text{C}$, $65 \pm 5\% \text{ RH}$. and $860 \sim 1060 \text{ mbar}$. 试验状态: 若无特别规定限制, 则以温度 $5 \sim 35^{\circ}\text{C}$, 相对湿度 $45 \sim 85\%$, 气压 $860 \sim 1060 \text{ mbar}$ 之标准状态测之。但对此标准状态之测定值发生判定疑问或有特别要求则以基准状态(温度 $20 \pm 2^{\circ}\text{C}$, 相对湿度 $65 \pm 5\%$, 气压 $860 \sim 1060 \text{ mbar}$)为准测定。 2.Appearance, construction and dimensions. 外观. 构造. 尺寸 2.1 Appearance : There shall be no defects that affect the serviceability of the product. 外观: 不得有影响制品机能之缺陷。 2.2 Construction dimensions : Shall conform to the assembly drawings. 构造及尺寸: 必须与组立图符合。 3.Type of actuation : Tactile feedback 动作型式: 有触感之回馈 4.Contact arrangement: 1 poles 1 throws (Details of contact arrangement are given in the assembly drawings.) 接点构成: 单极单投式(详细如组立图所示) 5.Maximum ratings : 最大额定: DC 12 V 50 mA			

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6. Electrical Characteristics 电气性能规格:

ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
6.1	Contact resistance 接触电阻	Applying a static load twice the actuating force to the center of the metal contact measurements shall be made with a 1 kHz small-current contact resistance meter. 将两倍于动作力之静负荷加于金属弹片之中央以1 k Hz小电流接触阻抗计测定之.	100 m ohm Max. 100 mΩ 以下
6.2	Insulation resistance 绝缘阻抗	Measurements shall be made following application of DC 100V potential across terminals and across Terminals and frame for one minute . 以 DC 100V 之电压加于端子相互间及端子与外框间1 分钟测定之	100 M ohm min. 100 MΩ 以上
6.3	Dielectric with standing voltage 耐电压	AC 250V (50~60Hz) shall be applied across terminals and across terminals and frame for one minute. 以 AC 250V (50~60Hz) 之电压加于端子相互间及端子与外框间1 分钟测定之	There shall be no breakdown. 不可有绝缘破坏之现象
6.4	Bounce 接点之瞬间接触跳动时间	Lightly striking the center of the metal contact at a rate encountered in normal use (3 to 4 operations per sec) bounce shall be tested at "ON" and "OFF". 以 3~4 次/秒之正常使用速度轻轻地敲打金属弹片之中央, 开关在"开"及"关" 之位置均需测定之 	"ON"and"OFF":10 m sec max. "开"及"关":10 m sec 以下.

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7. Mechanical performance 机械性能

ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
7.1	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 metal contact the maximum load required for the metal contact to come to a stop shall be measured. 将开关之操作部置于垂直方向,并在金属弹片之中央逐渐增加荷重,直到金属弹片不动为止,量取施力期间之最大荷重值	160gf±50gf
7.2	Travel行程	Placing the switch such that the direction of switch operations vertical and then applying a static load twice the actuating force to the center of the metal contact the travel distance for the metal contact to come to a stop shall be measured. 将开关之操作部置于垂直方向,并在金属弹片之中央加两倍于动作力之静负荷测量金属弹片被压到不动时之移动距离。	See drawings 见图纸
7.3	Stop strength 止动强度	Placing the switch such that the direction of switch operation is vertical a static load of 1 kgf shall be applied in the direction of stem operation for a period of 15 seconds. 固定开关,使开关与操作方向垂直,向按钮的操作方向加1Kgf的静负荷,时间为 15 秒。	There shall be no sign of damage mechanically and electrically. 不得有电气及机构上之破坏现象。
7.4	Stem Strength 推柄强度	Placing the switch such that the direction of switch operation is vertical, the maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured. (static load) 固定开关,使开关与操作方向垂直,测量推柄能承受相反方向拉力的最大值。(静负荷)	Max <u>3</u> k g f

8. Weather-proof 耐候性能

ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
8.1	Resistance to low temperatures 耐寒性能	Switch for testing being kept in the conditions at -30 ±2℃ in temperature for 96 hours, and in anormal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away.	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项

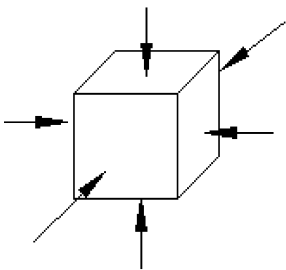
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SERIES 系列	TACT SWITCH	MODEL NO 型号	XB-TS-904
ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
8.1	Resistance to low temperatures 耐寒性能	-30±2℃ 放置96 小时试验后,置于常温常湿中1 小时,除去水滴后,在1 小时内测定之	
8.2	Heat resistance 耐热性能	Switch for testing being kept in the conditions at 85±2℃ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. 85±2℃ 放置96小时试验后,置于常温常湿中1 小时,在1小时内测定之	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
8.3	Moisture Resistance 抗湿性	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 以下的试验必须要先将样品放置于下列实验要求内,然后将其放置于常温常湿的环境下1 小时后进行测试: (1) Temperature 温度: 40±2° C (2) Relative humidity 相对湿度: 90 to 95% (3) Time 时间: 96 hours (4) Water drops shall be removed 必须将水滴排除.	Contact resistance: 100 m ohm max. Insulation resistance: 100 M ohm min. Item 7.1, 7.2 接触阻抗在100 mΩ 以下, 绝缘阻抗在100 MΩ 以上 同7.1, 7.2 项
8.4	Temperature Cycling 循环温度	1. Following five cycles of the temperature cycling test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 以下五个步骤的温度循环测试必须要先将样品放置于下列实验要求内,然后将其放置在常温常湿的环境下1 小时后进行测试: 2. During this test, water drops shall be removed. 试验过程中,必须将水滴排除。 Per cycle 每一个循环 - 25℃±2℃ 60 min, +20℃±5℃ 30 min, +70℃±2℃ 60 min, +20℃±5℃ 30 min	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
8.5	Solderability test 可焊性试验	1. The top of the terminals shall be dipped 2mm in the solder bath of 230±5℃ for 3±0.5 seconds. 端子顶部被浸入焊锡池中2mm深,温度为230±5℃,时间为 3±0.5 秒. 2. Manual Soldering: 350Max Time 3±1S 手工焊锡温度: 350Max 时间3±1秒.	More than 75% of the dipped part shall recovered by solder. 浸泡部份须附着75%以上.



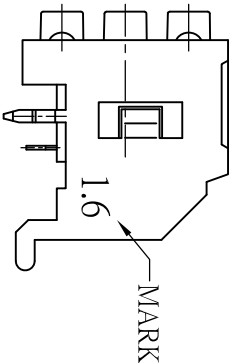
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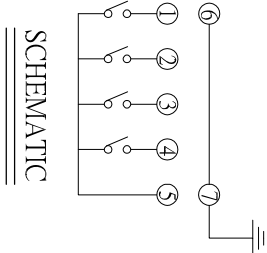
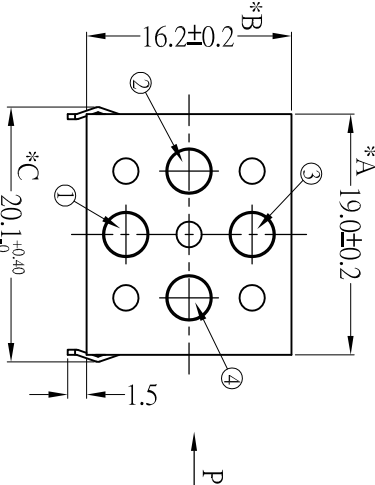
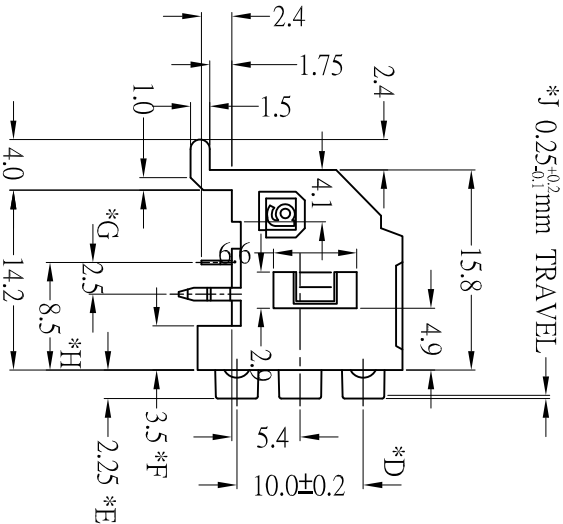
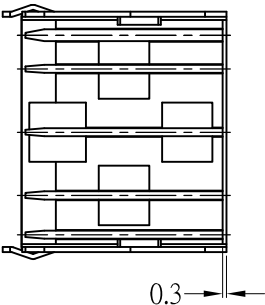
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ITEM 项目	TEST CONDITIONS 测试条件		CRITERIA 判定基准
8.6	Resistance to soldering heat test 耐焊性试验	1.Preheat Temperature 预热温度:120℃ Max. (Ambient temperature of printed circuit board on its soldering side) 耐焊接热印刷电路板的周边温度. 2.Preheat Time 预热时间:90 sec Max. 3.Flux Foaming 助焊剂泡沫:To such an extent that fluxes will be kept flush with the printed circuit board 's top surface on which components are mounted.Preparatory flux must not be applied to that side of printed circuit board on which components are mounted and to the area where terminals located. 在固定的范围内将助焊剂以流体状置于印刷电路板表面, 固定各组装部分。预备的助焊剂不能放在表面已装有各组件及端子的印刷电路板附近。 4.Soldering Temperature 耐焊接热温度:260℃ Max. 5.Duration Of Solder Immersion 焊接持续时间:5 sec Max. 6.Allowable Frequency Of Soldering Process耐焊接热次数:1 time	1.Without deformation of case or excessive looseness of teminals electrical characteristics shall be satisfied. 本体无变形, 能满足于机械, 电气性能.
9.Endurance 耐久性能			
ITEM 项目	TEST CONDITIONS 测试条件		CRITERIA 判定基准
9.1	Life Test 寿命测试	1.Endurance without loading: a switch shall be subjected to 100,000 cycles at a speed of 40-50 cycles for 1 min. 无负荷: 在无负荷的条件下以分钟40-50回的速度进行100,000次的测试. 2.Endurance with loading: a switch shall be subjected to80,000 cycles at a speed of 40-50 cycles for 1 min. 负荷: 在负荷的条件下以每分钟40-50次的频率作80,000回之负荷测试. 3.Depression: Twice the actuating force; 按力: 两倍动作力;	Contact resistance 接触电阻:100 mΩ Max. Actuating force 动作力: + 30 % or- 30 % of initial force初始值的± 30 % Item 6.2 , 7.2 同 6.2 , 7.2项

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ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
9.2	Vibration resistance 耐振动性	Measurements shall be made following the set forth below: 依下列设定方式测试: (1).Range of oscillation : 10 to 55 Hz 振动数范围: 10~55 Hz (2).Amplitude pk-to-pk : 1.5 mm 全振幅:1.5 mm (3).Cycle of sweep : 10-55-10 Hz in one minute approx. 扫瞄周期:10-55-10 Hz 约1 分钟 (4).Mode of sweep:Logarithmic sweep or uniform sweep. 扫瞄振动之变化方式:近似对数或直线 (5).Direction of oscillation: Three mutually perpendicular directions. 振幅方向:相互垂直之三个方向(含柄移动之方向) (6).Duration of testing : 2 hours each for a total of 6 hours. 试验时间:各2 小时(计6 小时)	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
9.3	Impact shock resistance 耐冲击性	Measurements shall be made following the test set forth below:(1).Acceleration : 784m/s² (2).Cycle of test : 3 times per direction , 18 times in total(6 directions). (1).用784m/s² 加速度 (2).沿图示 6 个方向, 每方向3 次共18 次. 	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项

REVISION		
POSITION	DESCRIPTION	DATE
△		



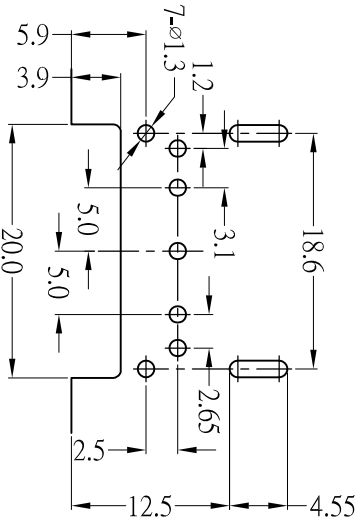
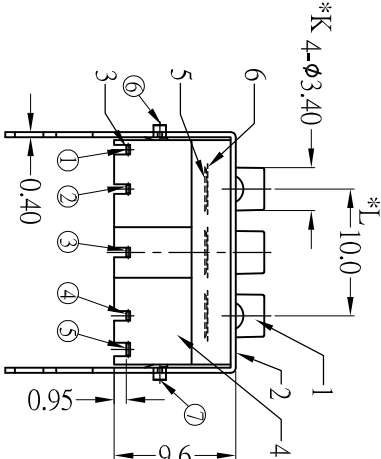
P VIEW



SCHEMATIC

NOTES:

1. OPERATING TEMPERATURE:-20℃ TO +70℃.
2. STORAGE TEMPERATURE:-30℃ TO +80℃.
3. CURRENT RATING:DC 12V 50mA.
4. CONTACT RESISTANCE:100 m ohms MAX.
5. INSULATION RESISTANCE:100 M ohms min.(DC 100V)
6. DIELECTRIC WITHSTANDING VOLTAGE:AC 250V (50Hz OR 60Hz)1 MINUTE.
7. TRAVEL:0.25^{+0.2}_{-0.1} mm.
8. ACTUATING FORCE:1.60±50gf.
9. RETURN FORCE:50gf min.
10. LIFE CYCLE:100K CYCLES min.



PCB LAYOUT (TOP VIEW)
TOLERANCE:±0.05mm

* CRITICAL DIMENSION



东莞市溪榜电子有限公司
DONG GUAN XI BANG ELECTRONI CS CO., LTD.



SERIES : TACT SWITCH

DRAWING NO. XB-TS-904

PART NAME :

GENERAL TOLERANCE

UNIT : MM

DWN.

SCALE : 5:1

CHKD

REV : A/0

APPD.

X.XXmm±0.25mm
X.Xmm±0.35mm

7				
6	MEMBRANE	SILICONE	4	YELLOW
5	CONTACT	SUS 301	4	Ag CLAD(3u"min)
4	HOUSING	PA66-G40	1	BLACK
3	TERMINAL	BRASS STRIP	1	Ag COATING(3u"min)
2	FRAME	SPCC	1	Sn COATING (50u"min)
1	STEM	PA66-G40	4	BLACK
NO.	PART NAME	MATERIAL	QTY	FINISHING