

NO.:20201207001

SPECIFICATION FOR APPROVAL

PART NAME: TACTILE SWITCH

MODEL NO: TCF-062 H=4.3mm/250GF

DATE : _____ **SAMPLE QUANTITY: 10PCS**

APPROVED BY

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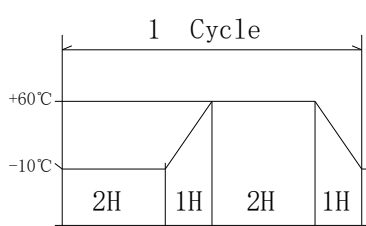
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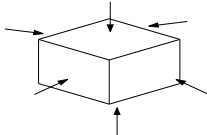


ISO 9001 & IATF 16949 Automotive Quality Management
System Certification Manufacturing Enterprise

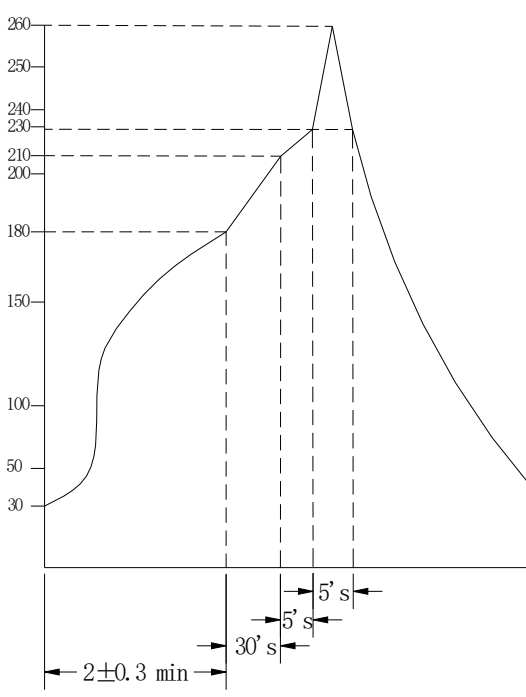
JINBAOLI		TACT SWITCH SPECIFICATION (轻触开关规格书)					FILE NO.:	
							WPTW20160508-A	
6.PERFORMANCE 性能								
6.1 Electrical 电气								
Item 项目		Test Condition 测试条件					Requirements 要求	
6.1.1. Contact resistance 接触电阻		Applying astatic load twice the actuating force to the center of the stem,measurements 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					100 m ohm max.	
6.1.2. Insulation resistance 绝缘电阻		Measurements shall be made following application of DC100V 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					100 M ohm min.	
6.1.3. Dielectric withstanding voltage 电气耐压		AC 250V (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 AC 250V(50HZ-60HZ)					There shall be no breakdown. 没有击穿	
						APPD	CHKD	DSGD
								PART NO: TCF-062 H=4.3mm
								DOCUMENT NO:SPECTSZ.DOC
ZONE	SYMB	DATE	APPD	CHKD	DSGD			2/8

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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					250±50gf			
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					0.45±0.15mm			
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					45gf 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			
					APPD	CHKD	DSGD	PART NO: TCF-062 H=4.3mm	
								DOCUMENT NO:SPECTSZ.DOC	
ZONE	SYMB	DATE	APPD	CHKD					3/8

JINBAOLI		TACT SWITCH SPECIFICATION (轻触开关规格书)				FILE NO.:				
						WPTW20160508-A				
6.3 Environmental 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: 1000 hours 时 间 (1) Water drops shall be removed. 擦除水珠				Contact resistance: <u>200</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>1 Cycle</p> <p>+60°C</p> <p>-10°C</p> <p>2H 1H 2H 1H</p> </div>				Item 6.1 Item 6. 2.1 Item 6.2.2					
						APPD	CHKD	DSGD	PART NO:	
									TCF-062 H=4.3mm	
									DOCUMENT	
ZONE	SYMB	DATE	APPD	CHKD	DSGD				NO:SPECTSZ.DOC	4/8

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							WPTW20160508-A		
6.4Endurance 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:60cycles/min 动作频率:60 次/分 (3)Depression: 375gf 减压力 (动作力 1.5 倍) (4)Cycles of operation: 200,000 cycles 动作次数:200,000 次					Contact resistance: <u>200</u> m ohm 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. ±30%初始动作力 Item 6.1.3 tem 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 directionof 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 6hours.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 6directions, for a total of 18cycles 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			
						APPD	CHKD	DSGD	PART NO: TCF-062 H=4.3mm
									DOCUMENT NO:SPECTSZ.DOC
ZONE	SYMB	DATE	APPD	CHKD	DSGD				5/8

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							WPTW20160508-A		
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		<p>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</p> <p>(2) Temperature (温度): -30°C~80°C</p> <p>(3) Cycling(周期): Ten cycles (10 个周期)</p> <div style="text-align: center;"> <p>1 Cycle</p> <p>80°C</p> <p>-30°C</p> <p>20Min 10M 20Min 10M</p> </div>					Item 6.1 Item 6. 2.1 Item 6.2.2		
7.2 Water Resistance 耐水性(IP67)		<p>According to the standard of IEC 60529:2001 Degrees of protection provided by enclosures (IP Code) 根据 IEC 60529:2001 的标准进行测试;</p> <p>The lowest point of enclosures with a height less than 850mm is located 1000mm below the surface of the water; Test duration: 30min; 产品最低点距离水面 850mm~1000mm; 测试时间: 30 分钟</p>					Item 6.1 Item 6. 2.1 Item 6.2.2		
						APPD	CHKD	DSGD	PART NO: TCF-062 H=4.3mm
									DOCUMENT NO:SPECTSZ.DOC
ZONE	SYMB	DATE	APPD	CHKD	DSGD				6/8

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8.Use Endurance 使用耐久性									
Item 项目	Test Condition 测试条件					Requirements 要求			
8.1 Solderability 可焊性	Oven Temperature:245°C±5°C, Time: 5S±1S 锡炉温度: 245°C±5°C 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°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</p> <p>Soldering heat: Temperature on the copper foil surface should reach the peak temperature of 260°C 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°C</p> 					<p>表面无起泡,变型 Surface of plastics don't frothed And formed</p>			
						APPD	CHKD	DSGD	PART NO: TCF-062 H=4.3mm
ZONE	SYMB	DATE	APPD	CHKD	DSGD				DOCUMENT NO:SPECTSZ.DOC
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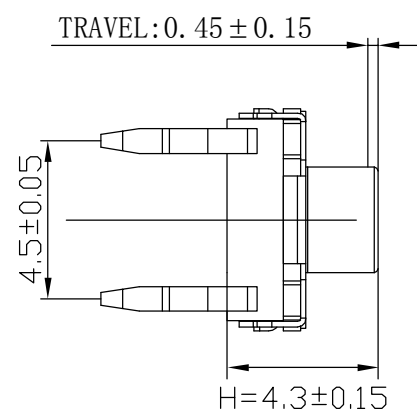
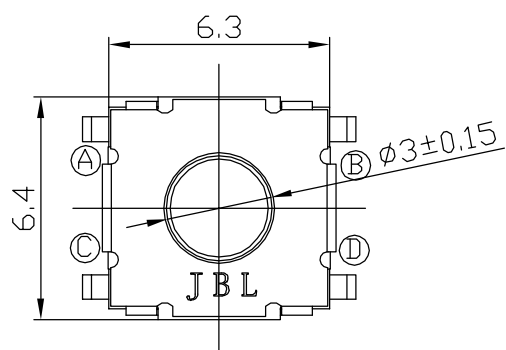
JINBAOLI	TACT SWITCH SPECIFICATION (轻触开关规格书)		FILE NO.:
			WPTW20160508-A
8.3 Salt Mist 盐雾实验(NSS)	<p>The switch shall be checked after the following test:</p> <p>(1) Temperature: $35 \pm 2^{\circ}\text{C}$</p> <p>(2) Salt Solution: $5 \pm 1\%$(Solids by mass), immersing time: 5minute.</p> <p>(3) After immersing, salt deposit shall be removed by runnig water.</p> <p>(4) Durati on: 24 ± 1hours</p> <p>试件在下述实验后测量:</p> <p>(1) 温度$35 \pm 2^{\circ}\text{C}$</p> <p>(2) 盐溶液浓度: $5 \pm 1\%$(质量百分比), 浸泡5分钟。</p> <p>(3) 浸泡后的盐沉积物用水冲掉。</p> <p>时间24小时</p>	<p>No remarkable corrosion shall be recognized in metal part</p> <p>在金属件上没有腐蚀斑点。</p>	

9. Other precautions 其他注意事项

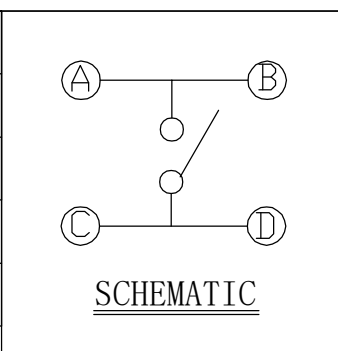
- (1) Following the soldering process,do not try to clean the switch with a solvent or the like.
进行焊接过程中, 不可以用溶剂或类似品清洗开关
- (2) Please have the products keep in close status and the storage time is 90 days guaranty after delivering the goods at most.
交货后保证开关处于封密状态并库存时间 90 天以上

						APPD	CHKD	DSGD	PART NO:	
									TCF-062 H=4.3mm	
									DOCUMENT	8/8
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CAD FILE:



NO.	H	COLOUR	
1	3.3mm	BLUE	
2	4.1mm	GREEN	
3	4.3mm	PURPLE	✓
4	5.0mm	BLUE	



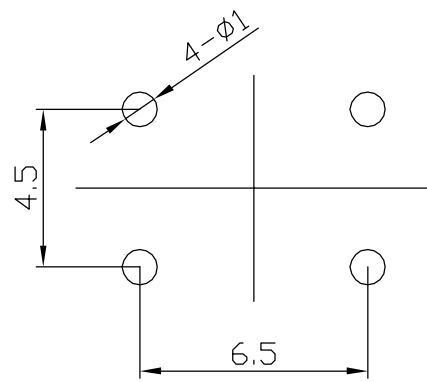
1. ELECTRICAL CHARACTERISTICS:

- 1.1. RATING: DC 12V 50mA
- 1.2. CONTACT RESISTANCE: 100mΩ MAX
- 1.3. INSULATION RESISTANCE: 100MΩ MIN
- 1.4. GENERAL TOLERANCE: ±0.3
- 1.5. DIELECTRIC STRENGTH: AC 250V (50~60Hz)/60S

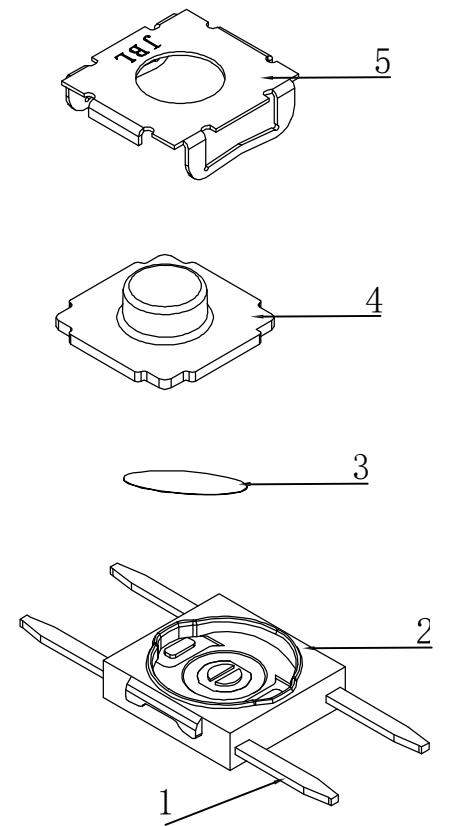
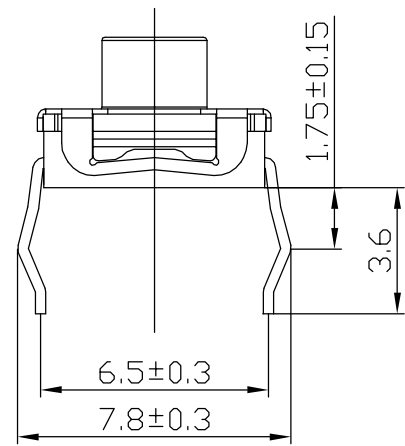
2. MECHANICAL CHARACTERISTICS:

- 2.1. PRACTICAL TEMPERATURE RANG: -40°C ~ +85°C
- 2.2. OPERATING FORCE:
 - 80 ± 30gf
 - 100 ± 30gf
 - 120 ± 30gf
 - 160 ± 40gf
 - 200 ± 50gf
 - 250 ± 50gf
 - 300 ± 60gf
 - 400 ± 60gf

- 2.3. MECHANICAL LIFE: 200,000 cycles
- 2.4. Salt Mist (NSS) Duration: 48hours



P. C. B LAYOUT



NO.	DESCRIPTION	MATERIAL	QTY	PLATING	TOLERANCE UNLESS SPECIFIED	ISSUE	DATE	DESCRIPTIONS	APPD.
8									
7									
6					WITHIN 1.5: ±0.1mm OVER 1.5: ±0.2mm ANGLES: ±2°				
5	COVER	SUS	1	NATURAL					
4	BUTTON	RUBBER	1	BLUE					
3	CONTACT	SUS	1	Ag PLATED					
2	BASE	PPA	1	BLACK					
1	TERMINAL	BRASS	4	Ag PLATED					
					TITLE: TACT SWITCH			UNIT: mm	DRWG. NO.:
					MODEL NO: TCF-062 H=4.3mm			SCALE: 4:1	DWN
					XIAMEN JINBEILI ELECTRONICS CO.,LTD			CHK'D	
								APPD.	