



东莞市铭标电子科技有限公司

DONG GUAN MING BIAO ELECTRONIC TECHNOLOGY CO.,LTD.



产品规格书

DATA SHEET

客户名称

CUSTOMER

产品名称

DESCRIPTION

Tact Switch

铭标料号

MING BIAO P/N

TVDM04-073JR-R

客户料号

PARTNUMBER

客户地址

ADDRESS

客户确认 CUSTOMER APPEROVAL	核对 CHECK	审查 INSPECTION	核准 APPROVAL	确认日期 DATE
备注 REMARK	签核后请将此副本寄回，以证明您的批准。 Please sign and return this copy as proof of your approval.			

产品图面

Product drawing

材质表

Material table

包装说明

Packing instruction

规格书

Date sheet

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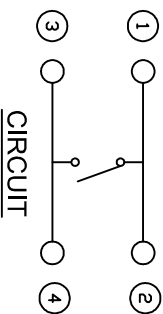
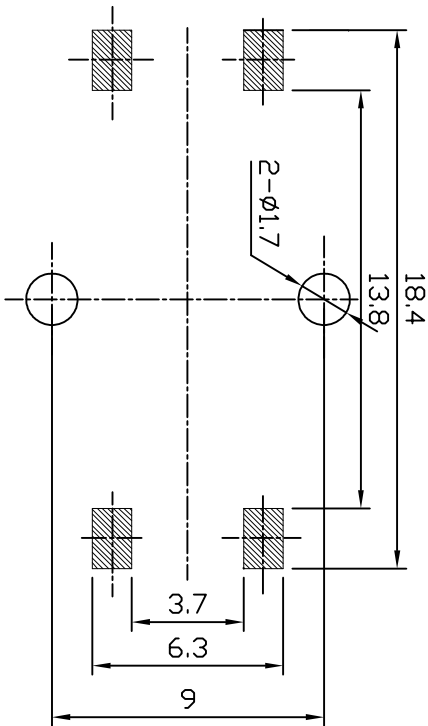
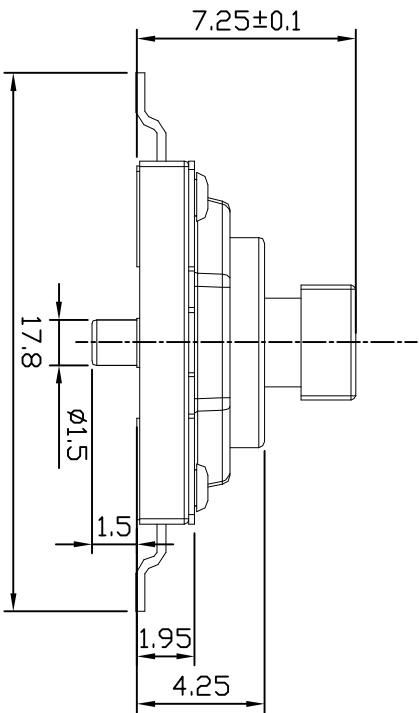
铭标签章确认
COMPANY STAMP



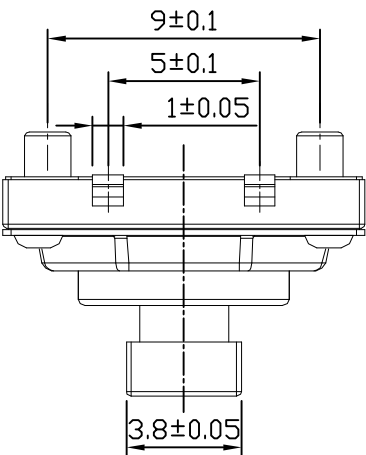
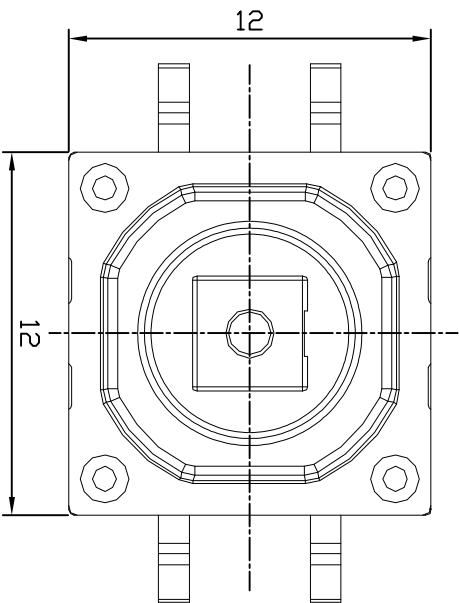
编号(NO.):

2025.04.26

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P.C.B LAYOUT



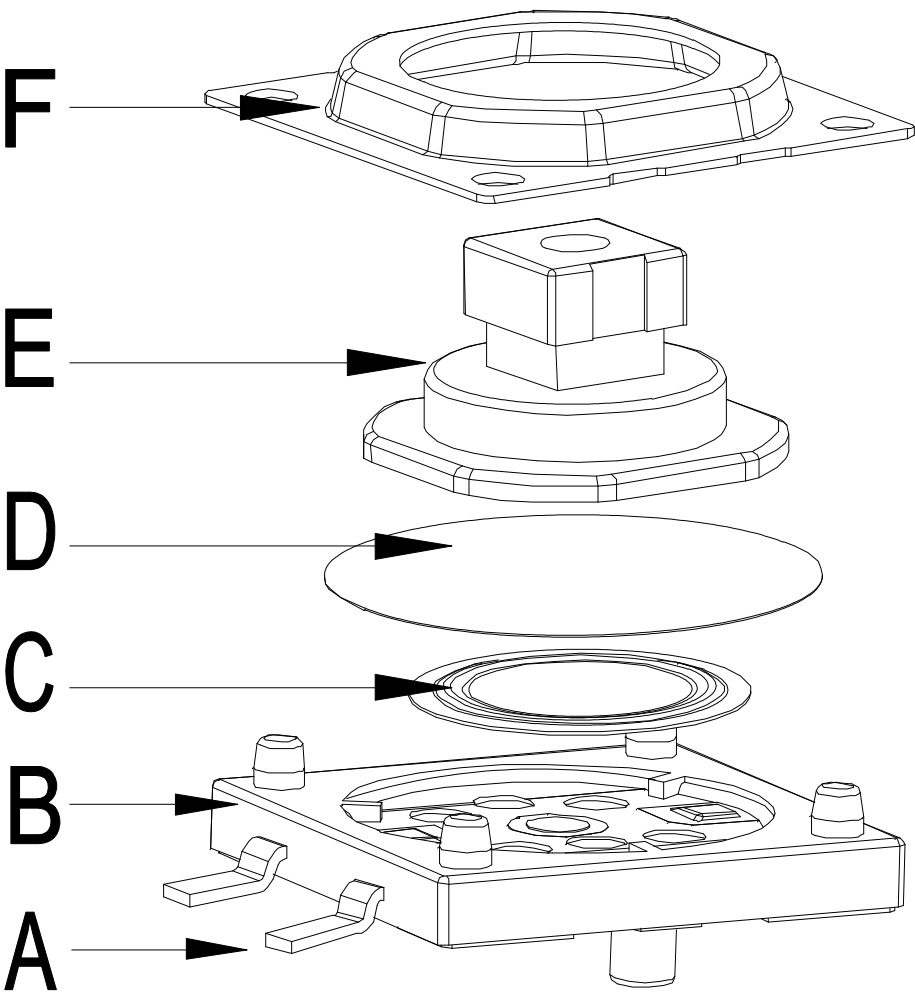
SPECIFICATIONS:

Operating temperature range: -20℃ to +70℃
Rating: 50mA, 12V DC Max
Insulation resistance: 100MΩ min. 250V DC
Dielectric strength: 250V AC for 1Min
Contact resistance: 100mΩ Max
Life: 1, 000, 000 Cycles
Travel: 0.25±0.05mm
Operating force: 160±30gf / 260±50gf

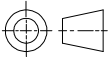


Rohs COMPLIANT Pb-free Halogen Free				东莞市铭标电子科技有限公司 Ming Biao Electronic Technology Co., Ltd.			
TOLERANCE UNLESS OTHERWISE STATED				DESIGN	DATE	TITLE	Tact Switch
X.X	±0.20	SIZE	A4	CHKD	2025. 04. 26	MODEL	TVDM04-073JR-R
X.XX	±0.15	REV	A	DATE		SHEET	1/3
X.XXX	±0.10	UNIT	mm	APPD	DATE	PRINT DATE	2025.04.27
±	±2°	SCALE	4:1				

	1	2	3	4	5	6	7	8
	ITEM	DESC.	Q'TY	MATERIALS			REMARK	
A	A	TERMINAL	1	BRASS			WITH SILVER PLATING	
	B	BASE	1	PPA			BLACK	
	C	CONTACT	1	STAINLESS STEEL			WITH SILVER CLADDING	
	D	SEAL PLATE	1	KAPTON			———	
B	E	STEM	1	PPA			RED	
	F	COVER STENT	1	STAINLESS STEEL			———	



RoHS COMPLIANT Pb Pb-Free HF Halogen Free				 东莞市铭标电子科技有限公司 Ming Biao Electronic Technology Co., Ltd.				
TOLERANCE				DESIGN	DATE	TITLE	Tact Switch	
UNLESS OTHERWISE STATED				<i>wyf</i>	2025. 04. 26			
X.X	±0.20	SIZE	A4	CHKD	DATE	MODEL	TVDM04-073JR-R	
X.XX	±0.15	REV	A					
X.XXX	±0.10	UNIT	mm	APPD	DATE	SHEET	2/3	
	±2°	SCALE	1:1			PRINT DATE	2025.04.26	



1	2	3	4	5	6	7	8	9	10
SYMBOL	A0	B0	K0	P0	P	P2			
SPEC	13.40±0.10	18.00±0.10	9.40±0.10	4.00±0.10	16.00±0.10	2.00±0.10			
SYMBOL	W	T	E	F	D0	D1			
SPEC	32.00±0.30	0.60±0.10	1.80±0.10	14.00±0.10	1.50±0.10	0.00±0.10			

一 包装流程：图1→图2→图3→图4→图5→图6

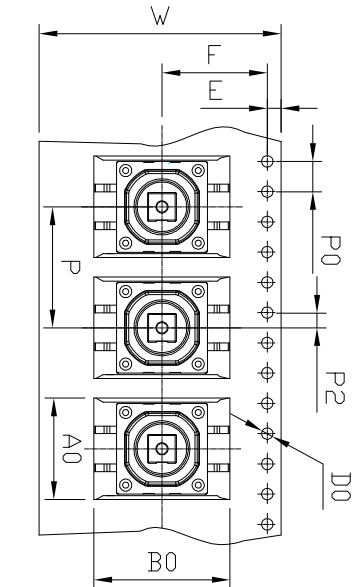


图1：成品载带

出料方向

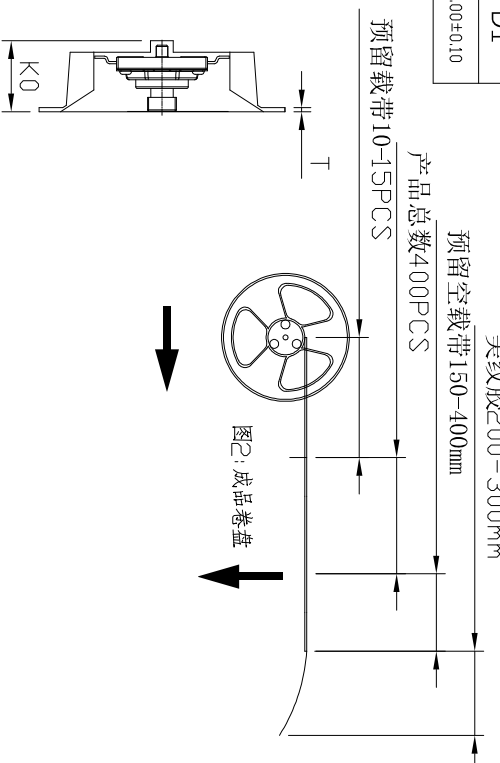


图2：成品卷盘

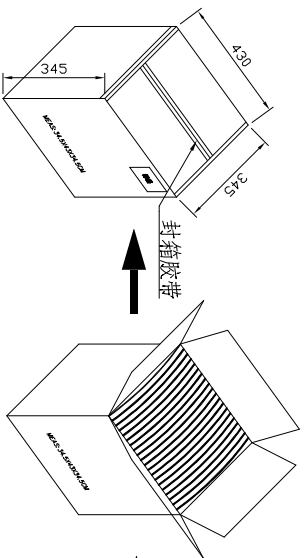


图4：卷盘装箱

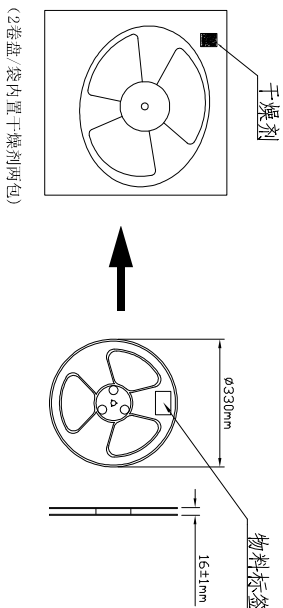


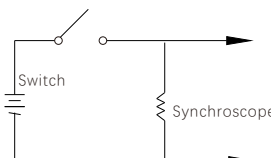
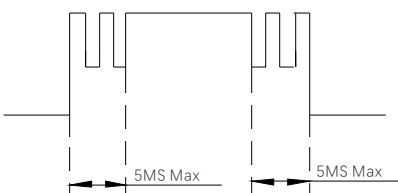
图3：成品卷盘

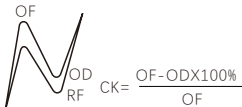
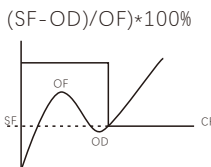
- 三 标签说明：
- 1，标签尺寸：60*75mm不干胶。
 - 2，标签内容详见下方标签样。

合格标签
供应商：
品名：
P/D NO：
Lot. NO：
数量：
生产日期：
出货日期：
检验员：



Rohs COMPLIANT Pb-free Halogen free				东莞市铭标电子科技有限公司 Wing Biao Electronic Technology Co., Ltd.			
TOLERANCE				DESIGN	DATE	TITLE	Tact Switch
UNLESS OTHERWISE STATED				DATE	2025. 04. 26		
X.X	±0.20	SIZE	A4	CHKD	DATE	MODEL	TVDM04-073JR-R
X.XX	±0.15	REV	A				
X.XXX	±0.10	UNIT	mm	APPD	DATE	SHEET	3/3
±2°	SCALE	1:1			PRINT DATE	2025.04.26	

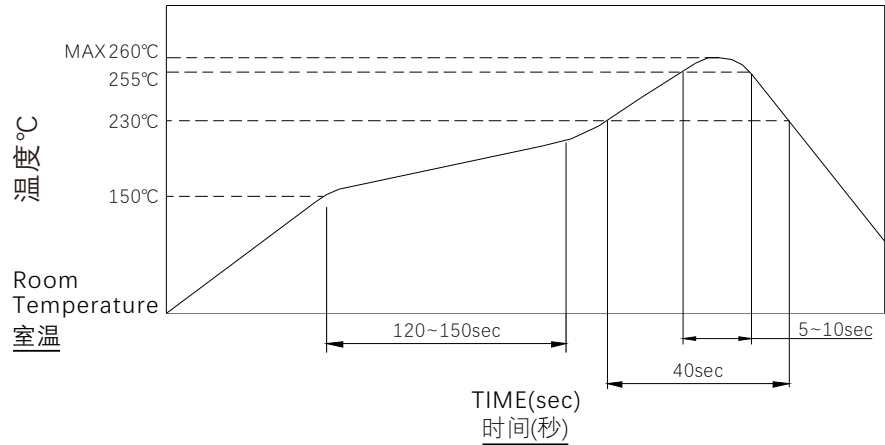
		产品规格书 DATA SHEEL		开关类型 (Title)	轻触开关(Tact Switch)	页码 (Page)	4 / 7				
				产品料号 (Model)	TVDM04-073JR-R	版本 (Version)	A-0				
						日期 (Date)	2025. 04. 26				
一、产品形态(Style):											
本规格书是描述"触动式开关",一般的机械特性与电气特性,而该触动式之开关主要是用来作为讯号开关之电子装置。 This specification describes "TACT SWITCH", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.											
二、一般事项(General):											
1.工作温度范围(Operating Temperature Range): -20℃ ~ +70℃ 2.储存温度范围(Storage Temperature Range): -40℃ ~ +85℃ 3.额定电流(Current Range): 50mA12V DC Max 4.操作类型(Type of Actuatiao): 触动回复式 Tactile feedback											
ROHS COMPLIANT Pb lead-free HF Halogen Free											
三、测试项目(Test Sequence):											
特性 Feature	项次 ITEM	测试种类 DESCRIPTION	测试条件 TEST CONDITIONS	测试要求 REQUIREMENTS							
外观 Appearance	1	视觉检查 Machine vision	在未施加任何外力及试验前,以机器视觉方式检测 By Visual Examination choke without any out pressure & testing	产品的外观不能有影响产品功能之不良缺点 There shall be no defects that affect the serviceability of the product							
	电气特性 Electrical Performance	2	接触阻抗 Contact Resistance	用一作动力1.5-2倍力量的静态荷重,实际按压触钮的中央处,并以1KHz规格的微电流阻抗计,量测接触阻抗值 Applying a static load 1.5-2 times the operating force to the center of the stem, measurements shall be made with a 1 kHz small current contact resistance meter	接触阻抗值不得高于100mΩ 100mΩ Max.						
		3	绝缘阻抗 Insulation Resistance	以250V的直流电压绝缘测量装置,将试验电压施于端子间及端子与金属上盖间,于1分钟±5秒后测定绝缘阻抗值 Measurements shall be made following application of 250 V DC potential across terminals and cover for 1 minute± 5 seconds	绝缘阻抗不得低于100MΩ 100MΩ Min.						
		4	耐电压 Dielectric Withstanding Voltage	以250V的直流电(50Hz或60Hz近似正弦波电压),电压施于端子间及端子与金属上盖间,并保持1分钟之加压状态后,检查是否能耐该值 250 V DC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute.	成品不得有故障,跳火及绝缘体破坏等不良现象 There shall be no breakdown or flashover.						
		5	回弹试验 Bounce	以图示的回路测之,测试时以每秒3-4次的速度为一循环,观察示波器上之显示 3 to 4 operations at a rate of 1 cycles per second 	回弹的反应时间,不得高于5毫秒 5 m seconds max. 						

		产品规格书 DATA SHEEL		开关类型 (Title)	轻触开关(Tact Switch)	页码 (Page)	5/7
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						日期 (Date)	2025.04.26
三、测试项目 (Test Sequence):							
特性 Feature	项次 ITEM	测试种类 DESCRIPTION	测试条件 TEST CONDITIONS		测试要求 REQUIREMENTS		
机械特性 MECHANICAL PERFORMANCE	6	作动力 Operating Force	测定推钮操作方向之力量 Applied in the direction of operation. 		160±30gf/260±50gf		
	7	手感值 Click ratio			手感值35% min. 经过两次回流焊 go through reflow process twice.		
	8	作动量 Stroke	将成品放置定位后,以一垂直力慢慢施压在按钮的中央处,使按钮从开始按压到无法按压停止,测量实际按压过程的距离 Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the stem, the stroke distance for the stem to come to a stop shall be measured.		0.25±0.05mm		
	9	延迟导通 Lag ratio			接触延迟0.02mm max Contact delay 0.02mm max.		
	10	操作部强度 Stop Strength	将成品放置定位后,以1.5Kgf (14.7N)垂直力的静态荷重施压于按钮上,时间保持15秒 Placing the switch such that the direction of switch operation is vertical, a static load of 1.5 Kgf (14.7N) shall be applied in the direction of stem operation for a period of 15 seconds.		受测后得成品仍需符合前述4~6测试项规格之要求 经过测试后之接触阻抗值不得高于200mΩ 受测后之绝缘阻抗值不得低于10MΩ As shown in item 4~6. Contact Resistance: 200mΩ Max. Insulation Resistance: 10MΩ min.		
	11	抗焊锡热 Solder Heat Resistance	PCB的厚度为1.6mm PCB is 1.6mm in thickness.		受测后之成品仍需合述4测试项规格之要求 经过测试后之接触阻抗值不得高于200mΩ 受测后之绝缘阻抗值不得低于10MΩ As shown in item 4. Contact Resistance: 200mΩ max. Insulation Resistance: 10MΩ min.		

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				产品料号 (Model)	TVDM04-073JR-R	版本 (Version)	A-0
						日期 (Date)	2025.04.26
三、测试项目 (Test Sequence):							
特性 Feature	项次 ITEM	测试种类 DESCRIPTION	测试条件 TEST CONDITIONS		测试要求 REQUIREMENTS		
机械特性 MECHANICAL PERFORMANCE	12	振动试验 Vibration	请依照MIL-STD-202F,210A所规定的方法作测试 全振幅:1.5mm 频率: 以10-55-10Hz的频率循环测试,周期1分钟 振动方向: 以X.Y.Z三轴向(包含按钮操作方向) 测试时间: 每一方向2小时 Shall be vibrated in accordance with Method 201A of MIL-STD-202F Swing distance:1.5mm Frequency: 10-55-10Hz in 1-min/cycle. Direction: 3 vertical directions including the directions of operation Test time: 2 hours each direction		受测后得成品仍需符合前述4~6测试项规格之要求 经过测试后之接触阻抗值不得高于200mΩ 受测后之绝缘阻抗值不得低于10MΩ As shown in item 4~6 Contact Resistance: 200mΩ max. Insulation Resistance: 10MΩ min.		
	13	冲击实验 Shock	请依照MIL-STD-202F,213B条件A所规定的方法作测试 加速度: 50G 测定时间: 11±1毫秒 受测方向: 以成品全周,三轴六个方向作测试 受测次数: 每一方向三次 Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F Acceleration: 50G Action time: 11±1m seconds Testing Direction: 6 sides Test Cycle: 3 times in each direction		同上 Ditto		
耐久性 DURABILITY	14	寿命测试 Operating Life	测试时需按照下列情况设定: 施以5 mA,5 VDC 之直流电 测定需于开关操作方向以OF上限的静态荷重施于按钮中央 受测次数: 1,000,000次 Measurements shall be made following the test forth below: 5 mA, 5 VDC resistive load. Applying a static load the operating force to the center of the stem in the direction of operation Static Load = OF max. 2 cycles/sec Cycle of Operation: 1,000,000 cycles min.		受测后的成品仍需符合4测试项规格的要求 测试后,作动力之变化需为初始值±50% 测试后的接触阻抗值不得高于200mΩ 受测后的绝缘阻抗值不得低于10MΩ 受测后的回弹反应时间须于10 毫秒内 As shown in item 4 Operating force: ±50% of initial force . Contact Resistance: 200mΩ max. Insulation Resistance:10MΩ min. Bounce: 10 m seconds max.		
耐候性 WEATHER-PROOF	15	耐寒性 Resistance Low Temperature	请依照下列所设定的条件测试后,并于常温常湿中放置1小时后测定 受测温度: -40±2℃ 受测时间: 96小时 Resistance Low TemperatureFollowing the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: Temperature: -40±2℃ Time: 96 hours		受测后得成品仍需符合前述4~6测试项规格之要求 经过测试后之接触阻抗值不得高于200mΩ 受测后之绝缘阻抗值不得低于10MΩ As shown in item 4~6 Contact Resistance: 200mΩ max. Insulation Resistance: 10MΩ min.		
	16	耐热性 Resistance High Temperature	请依照下列所设定的条件测试后,并于常温常湿中放置1小时后测定 受测温度: 80±2℃ 受测时间: 96小时 Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: Temperature: 80±2℃ Time: 96 hours		同上 Ditto		
	17	耐湿性 Humidity Resistance	请依照下列所设定的条件测试后,并于常温常湿中放置1小时后测定 受测温度: 60±2℃ 相对湿度: 90~95% 受测时间: 96小时 Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: Temperature: 60±2℃ Relative Humidity: 90~95% Time: 96 hours		同上 Ditto		

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				日期 (Date)	2025.04.26

四、焊锡条件(Soldering Conditions):



- 上述提到的情况, 是PCB上铜箔之温度。
The condition mentioned above is the temperature on the Cu foil of the PCB surface.
- 有一些情形是这PCB的温度和开关表面之温度会有很大的不同, 这和PCB材质、大小、厚度等有很大的关系, 因此要小心不要让开关表面的温度超过260°C
There are cases where board's temperature greatly differs from switch's surface be used not to allow switch's surface temperature to exceed 260°C.
- 手工焊锡 Manual Soldering
焊锡温度 Soldering Temperature: Max. 350°C
连续焊锡时间 Continuous Soldering: Time Max. 5 seconds
- 处理时注意事项 Precautions in Handling
1. 在P. C. B板面上之助焊剂, 不要黏到开关本身。
2. 不可以清洗到开关本身。
1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
2. Except for washable type do not wash the switch body.

五、储存条件的注意事 (Notes on storage conditions):

- Notes on storage conditions 储存条件的注意事项:
当物品被储存于以下的情形与条件它可能会影响产品功能变差及吃锡性等应避免储存于下列情形:
Do not store in the following environment or it may affect product's function and solderbility:
1. 温度在-10 (max.) ~ +40 (min.) & 湿度在85% (min.) 的地方
temperature of -10 (max.) ~ +40 (min.) °C & humidity at 85% (min.)
 2. 在有腐蚀性气体的地方
environment with corrosive gas
 3. 长时间储存至少6个月
storage over 6 months
 4. 阳光直接照射的地方
place of direct sunlight
- *以包装的状态储存以避免重力承载
Store with proper packaging conditions and to avoid loading heavy force.
- *请尽快使用我们建议3个月之内最多6个月内使用完毕
We suggest to use the products within 3 months or at least 6 months.
- * 打开包装后, 要将未使用完剩余产品存放在适当的防潮&密闭环境中
After opening the package, the rest products must be stored in the appropriate moisture-proof & airtight environment.