
连兴旺电子(深圳)有限公司

承认书

SPECIFICATIONS FOR APPROVAL

客户:

Customer:

客户料号:

Customer Part No:

公司料号:

Part No:

BMAxxA-E1B

产品名称:

Description:

TACT SWITCH

发行日期:

Issue Date:

客户签核 (Customer Approval) :

采购	品保	工程

内部签核 (Signature) :

核准	审核	制作
张旭明	蔡雍醇	谭泽沛

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APPROVAL SPECIFICATIONS

Product name	P/N	Verszion	Document No.	Page
TACT SWITCH	BMAxxA-E1B	A/00		2 /7

变更履历表:

[illegible]

1、概述

GENERAL

1.1 工作温度范围

Operating Temperature Range

-25℃~70℃ (在标准大气压、标准湿度条件下)

-25℃~70℃ (Normal humidity, normal air pressure)

1.2 贮藏温度范围

Storage Temperature Range

-45℃~80℃ (在标准大气压、标准湿度条件下)

-45℃~80℃ (Normal humidity, normal air pressure)

1.3 测试条件

Test Conditions

在没有其它特定的条件下, 应该在以下的条件下进行测试和测量:

Unless otherwise specified, tests and measurement shall be made in the following standard conditions:

常温.....5℃~35℃

Normal temperature.....5℃~35℃

标准湿度.....相对湿度 25%~85%

Normal humidity.....relative humidity 25%~85%

标准大气压.....86Kpa~106Kpa

Normal air pressure.....86Kpa~106Kpa

在制造过程中, 测试和测量应该在以下的条件下进行:

If any doubt arise from the judgment, tests shall be conducted at the following conditions:

温度.....20℃±2℃

Temperature.....20℃±2℃

相对湿度.....65%±5%

Relative humidity.....65%±5%

环境气压.....86Kpa~106Kpa

Air pressure.....86Kpa~106Kpa

1.4 存储方法

Storage method

1. 使用前确保包装完整无破损, 无浸湿.

Ensure that the product without package breaking or wetting before use.

2. 存储条件 Storage conditions:

储存温度 Storage temperature: -5 ~ 35 C;

储存湿度 Storage humidity: 25% ~80%;

未开封状态: 6 个月内使用完毕 (从发货日开始计算); 超过 6 个月后再使用的, 使用前请先验证: 端脚无氧化、无发黑、塑料件无吸湿起泡, 确保焊接的适宜性;

Unopened status: Use up the product as soon as possible before 6 months. (calculated from shipment date). Over 6 months, please make sure below before use it: terminal without oxidation or blackening, plastic parts without moisture absorption or bubble, ensure solderability.

已开封状态: 1 个月内使用完毕;

Opened status: use up within 1 month;

储存注意事项: 避开高湿高温和有腐蚀性气体的环境及阳光直射;

Storage precautions: Please avoid the following environment: with high humidity, high temperature, corrosive gases and direct sunlight.

3. 请勿超重叠放.

Do not stack too many switches.

2、详细说明

Detailed specification

2.1 外观: 应无影响、降低产品性能的缺陷;

Appearance: There should be no defects that affect the serviceability of product.

2.2 结构尺寸和安装尺寸: 应符合装配图要求;

Style and dimension: shall conform to the assemble drawings.

2.3 操作形式: 有触觉反应的操作

Type of actuating: Tactile feedback.

2.4 开关结构: 单回路单输出 (具体的触点结构在装配图中已绘出);

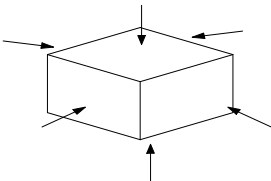
Contact arrangement: 1 pole, 1 throw

(Details of contact arrangement are given in the assembly drawings.)

2.5 开关工作额定值: DC 24V 25mA (常切换最大值) DC 1V 10μA (最小值)

DC 50V 100mA (不常切换最大值) DC 1V 10μA (最小值)

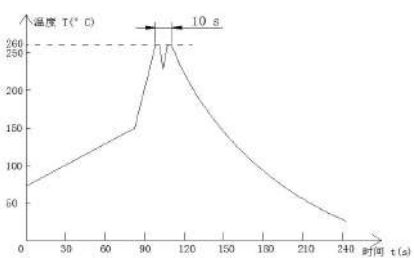
Ratings: DC 24V 25mA (Max) DC 1V 10μA (Min)

3. 电气性能: ELECTRICAL SPECIFICATION			
		试 验 条 件 TEST CONDITIONS	要求 REQUIREMENTS
3.1	接触电阻 Contact Resistance	在 1KHz 微小电流(100mA)以下测试。 Measured at 1KHz small current(100mA or less)	≤100mΩ
3.2	绝缘电阻 Insulation Resistance	在端子之间施加 AC 250V /min 的条件下,测量端子之间底座、盖板的电阻值 Measurement shall be made following application of 250V DC potential, across terminals, and across terminals and cover, for one minute.	≥100MΩ
3.3	介质耐压 Dielectric voltage proof	在相互绝缘的所有接线端子之间 250V (50~60Hz 电流为 10mA)交流电,各接线端子与外壳或非载流金属零件之间加载 250V (50~60Hz) 交流电,持续时间 5S。 250VAC (50~60Hz, cut-off current 10mA) is applied between non-connected terminals and between terminals and the metal frame for 5 s.	无击穿、无飞弧 There should be no breakdown and flashover
3.4	极间电容 Capacitance between adjacent switches	频率为 1MHz±10KHz 适用于相邻排脚和电路 To be measured with frequency 1MHz ± 10KHz, applied between adjacent terminal and circuit	最大 5PF Max 5PF
4. 机械性能: MECHANICAL SPECIFICATION			
4.1	操作力 Operating Force	应用于操作方向。 Applied in the direction of operation.	1000gf (MAX)
4.2	端子强度 Terminal strength	在排脚前端任意一个方向加 500gf 力度测试,时间为 1 分钟。 A static load of 500gf shall be applied To the terminal for 1 minute, in any direction	在排脚中没有裂开. 松动等异常, 满足于机械、电器性能。 Electrical characteristics shall be satisfied without damage or excessive looseness of terminals.
4.3	操作部强度 Operating unit strength	以 1Kg 的静态荷重施于操作方向测定, 操作时间 15S The static load of 1Kg was applied to the operation direction and the operation time was 15S .	在排脚中没有裂开. 松动等异常, 满足于机械、电器性能。 Electrical characteristics shall be satisfied without damage or excessive looseness of terminals.
4.4	振动 Vibration	根据以下给定条件进行测试: Measurement shall be made following the test set forth below: (1) 振动频率范围: 10~55~10Hz Vibration frequency range: 10 to 55 to 10Hz (2) 振幅 (峰-峰): 1.5mm Amplitude: 1.5mm (3) 振动方向: 包括手柄行程方向在内的三个相互垂直的方向 Direction of vibration: Three mutually perpendicular direction including the direction of stem travel (4) 测试时间: 每次 2 小时 Duration: Each 2 hours.	Item 3 Item 4.1 Item 4.2
4.5	冲击 Shock	根据下列条件进行冲击试验 Test by following conditions (1) 安装方法: 正常安装 (1) installation method: normal (2) 加速度: 784m/s ² (2) Acceleration: 784m/s ² (3) 作用时间: 11ms (3) Acting time: 11ms (4) 测试方向: 6 个方向 冲击次数: 每个方向 3 次, 共计 18 次 (4) Test direction: 6 directions Times: 3 times/direction , total 18 times	 Item 3 Item 4.1 Item 4.2

5、环境耐久性： ENVIRONMENTAL SPECIFICATION			
项目 ITEM		试 验 条 件 TEST CONDITIONS	要求 REQUIREMENTS
5.1	低温测试 Resistance to low temperature	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：-40±2℃ Temperature : -40±2℃ 2) 时间：96h Time: 96h	Item3 Item4.1 Item4.2
5.2	高温测试 Heat resistance	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：85±2℃ temperature:85±2℃ 2) 时间：96h time: 96h	Item3 Item4.1 Item4.2
5.3	温度周期性测试 Change of temperature	根据下面的测试要求进行 5 次循环的温度周期性测试， 实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试。测试期间样品应保持干燥。 After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test water drops shall be removed. A: +70±2℃ B: -25±2℃ C: 2 小时 D: 1 小时 E: -25±2℃ F: 1 小时	Item3 Item4.1 Item4.2
5.4	湿湿测试 Moisture resistance	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：40±2℃ temperature: 40±2℃ (2) 相对湿度：90%~95% relative humidity:90% to 95% (3) 时间：96h time:96h	接触电阻：≤200mΩ Contact resistance≤200mΩ 绝缘电阻：≥10MΩ Insulation Resistance≥10MΩ Item3.3 Item3.4 Item4.1 Item4.2
5.5	硫化试验 Sulfuration resistance	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) H₂S 气体浓度：3ppm±1ppm H₂S gas concentration: 3ppm±1ppm (2) 时间：72h Time: 72h (3) 温度：40±2℃ (90~95%RH) temperature: 40±2℃ (90~95%RH)	接触电阻：≤200mΩ Contact resistance≤200mΩ Item3.3 Item3.4 Item4.1 Item4.2

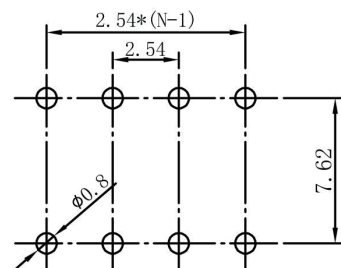
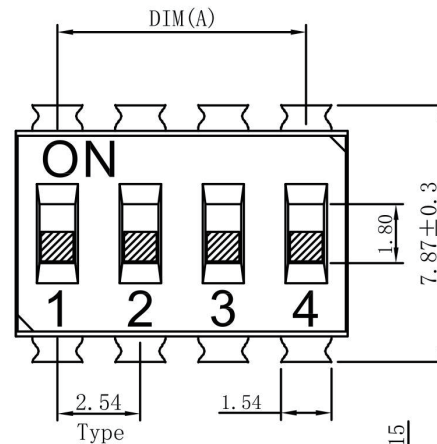
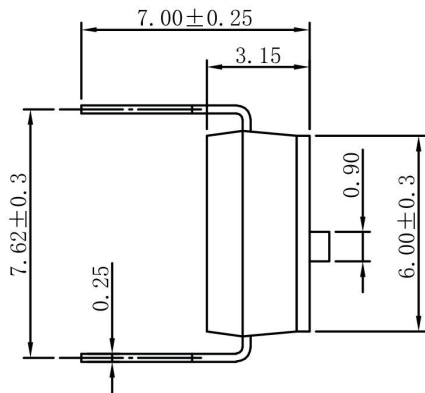
5.6	盐雾试验 Salt Mist	在以下设定条件下进行测量： The switch shall be checked after following test: (1) 温度: $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ temperature: $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (2) 盐溶液浓度: $5 \pm 1\%$ (质量百分比) salt solution : $5 \pm 1\%$(solids by mass) (3) 时间: $8 \pm 1\text{h}$ Time: $8 \pm 1\text{h}$ 实验后的盐沉积物后水冲掉 After test, salt deposit shall be removed by running water.	金属件上没有腐蚀斑点 No remarkable corrosion shall be recognized in metal part.
5.7	动作寿命 Operation life	有负载: 根据下面的测试要求进行测试: No load: Measurement shall be made following the test set forth below: (1) 按动速率: $15 \sim 20$ 次/分 Rate of operation: $15 \sim 20$ cycle/minute 2) 无故障寿命: 2,500 次 fault-free life: 2,500cycles	接触电阻 $\leq 1\Omega$ Contact resistance $\leq 1\Omega$ 绝缘电阻 $\geq 10\text{M}\Omega$ Insulation Resistance $\geq 10\text{M}\Omega$ 触点抖动 ON-20ms max Bounce OFF-20ms max 按力: 初值的 $\pm 30\%$ Operating Force: initial value $\pm 30\%$ Item3.3 Item4.1
5.8	可焊性 Solderability	在以下设定条件下进行测量: Measurements shall be made following the test set forth below: (1) 焊接温度: $240 \pm 5^{\circ}\text{C}$ Solder temperature : $240 \pm 5^{\circ}\text{C}$ (2) 浸入时间: $3\text{s} \pm 0.5\text{s}$ Immersion time: $3\text{s} \pm 0.5\text{s}$	除边缘外涂层应均匀覆盖 90%以上 Except for the edge, the coating should cover a minimum 90%

6. 焊接条件: SOLDERING CONDITIONS:

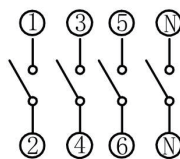
6.1	手工焊接 Hand soldering	请按以下条件进行焊接: (1) 焊锡温度: $\leq 350^{\circ}\text{C}$ (2) 连续焊接时间: $\leq 3\text{ s}$ Please practice according to below conditions: (1) Soldering temperature: $\leq 350^{\circ}\text{C}$ (2) Continuous soldering time: $\leq 3\text{ s}$	
6.2	波峰焊 Wave-soldering		

注意事项(Notes):

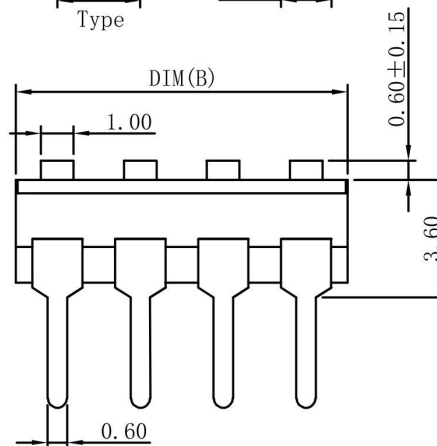
- 印刷基板的焊盘尺寸参见产品图。
The pad size of the printed substrate is shown in the product diagram.
- 在使用烙铁的情况下, 焊锡温度应在 350°C 以下、3 秒以内。
In the case of using soldering iron, soldering conditions shall be 350°C max and 3 sec.max.
- 防止助焊剂从开关的顶端渗入
Prevent flux penetration from the top of the switch
- 开关浸焊后, 注意不要用溶剂或类似品清洗开关。
After switches were soldered, please be careful not to clean switches with solvent or other similar products.
- 浸焊后, 注意不要在顶部施加负荷。
Right after switches were soldered; please be careful not to load to on the knobs of switches.
- 注意不要施加超负荷的压力或晃动开关。
Please be cautions not to give excessive static load or shock to switches.
- 开关浸焊后, 印刷基板注意不要叠放。
Please be careful not to pile up P.W.B. after switches were soldered



[P. C. B. LAYOUT]



[Schematic]



xxP 位: mm	1	2	3	4	5	6	7	8	9	10	11	12
DIM (A)	/	2.54	5.08	7.62	10.16	12.70	15.24	17.78	20.32	22.86	/	27.94
DIM (B)	2.54	5.08	7.62	10.16	12.70	15.24	17.78	20.32	22.86	25.40	/	30.48
管桩 (pcs)	195	100	67	50	40	33	28	25	22	20	/	16

General tolerance: $\pm 0.3\text{mm}$

NO.	NAME	MATERIAL	QTY.	FINISHING
1	端子	PHOSPHOR COPPER	1	Au PLATING
2	接触片	BERYLLIUM COPPER	1	Au PLATING
3	上盖	PPS	1	BLACK
4	手柄	PA	1	WHITE
5	底座	PPS	1	BLACK

CUSTOMER DRAWING		 连兴旺电子(深圳)有限公司 LXWCONN ELECTRONICS (SHENZHEN) CO., LTD				
GENERAL TOLERANCE .X ±0.25 .XX ±0.15 .XXX ±0.05 .ANGLE ±1°		DESIGN Tan 2026. 06. 06	TITLE TACT SWITCH			
		CHECKED Tan 2026. 06. 06	PART NO. BMAxxA-E1B			
SIZE A4		APPROVAL Tan 2026. 06. 06	SCALE 1 : 1	UNITS MM	REV. A	SHEET 1 OF 1