ISO9001: 2015

ISO14001: 2015

APPROVAL SPECIFICATIONS

Title. LOCK-FREE SWITCH

Product Model. PB22M06511-07

Customer's Part NO.

Customer's Model:

Customer's Approval Requested.

Please return this copy as a certification of your approval.

Checked by: Date:

Approved by: Date:

Swiclick

Address:Rm. D1/25F,No 2070,Electronical Technology Building-C,Shennan Mid-road,Futian Dist.,Shenzhen,China.

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1 GENERAL

1.1 APPLICATION

This specification is applied to the requirements for Lock-free switch (mechanical contact)

1.2 Operating Temperature Range

-30 80 ( )

-30 80 (Normal humidity, normal air pressure)

1.3 Storage Temperature Range

-30 85 ( )

-30 85 (Normal humidity, normal air pressure)

1.4 Test Conditions

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

……5 35

Normal temperature……5 35

…… 25% 85%

Normal humidity……relative humidity 25% 85%

……86Kpa 106Kpa

Normal air pressure……86Kpa 106Kpa

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

……20 ±2

Temperature……20 ±2

……65%±5%

Relative humidity…….....…65%±5%

……86Kpa 106Kpa

Air pressure……86Kpa 106Kpa

1.5 Storage method

1. .

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

2. Storage conditions:

Storage temperature -5 ~ 35

Storage humidity 25% **~80**%

6 6

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.

1

Opened status: use up within 1 month;

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

3. .

Do not stack too many switches.

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Detailed specification

2.1

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

2.2

Style and dimension: shall conform to the assemble drawings.

2.3

Type of actuating: Tactile feedback.

2.4 ( )

Contact arrangement: 2 pole, 2 throw

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

2.5 DC 30V 0.1A

Ratings: DC 30V 0.1A

2.6 SPEC

ALL SPEC parameters of this product are consistent with the experimental requirements and experimental reports.

3

ELECTRICAL SPECIFICATION

ITEM		TEST CONDITIONS	REQUIREMENTS
3.1	Contact Resistance	5V 10mA 1KHz 1.5 Applying a static load of 1.5 times operating force to the center of the stem, measurements shall be made by 5V DC 10mA or more than 1KHz AC small-current contact resistance meter.	≤100mΩ
3.2	Insulation Resistance	**500V DC 1** **Apply a voltage of 100V DC shall be applied for 1 min. After which measurement be made:** **1** **Between conductors not to be contact** **2** **Between individual terminals and frame**	≥100MΩ
3.3	Dielectric voltage proof	**AC 250V (50-60HZ) ,1 , 0.5mA,** **AC 250V rms 50-60Hz For 1 MIN ,trip current:0.5mA** **1** **Between conductors not to be contact** **2** **Between individual terminals and frame**	There should be no breakdown and flashover

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MECHANICAL SPECIFICATION

ITEM		TEST CONDITIONS	REQUIREMENTS
4.1	Operating Force	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 switch to come to a stop shall be measured.	200±100 gf
4.2	Full Travel	2 Placing the switch such that the direction of switch operation is vertical and then applying static load of 2times operating force to the center of the stem; the travel distance for the switch to come to a stop shall be measured.	2.1±0.2mm
4.3	**Operating part strength**	15 s Apply following load on the tip of of operating part 15 s. ☐ Operation direction ... 80N ☐ Drawing direction ... 20N ☐ Right direction against operating direction ... 10N	, . **The lever shall have no serious deformation and function is normally.**

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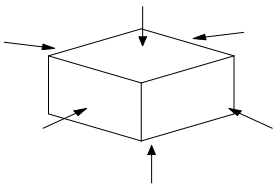
	ITEM	TEST CONDITIONS	REQUIREMENTS
4.4	**Terminal Strength**	**3N , 10** **A static load of 3N shall be applied to the Terminal for 10 Sec.in any direction.**	**, ,** **Electrical characteristics shall be satisfied without damage or excessive looseness of terminals**
4.5	Vibration	Measurement shall be made following the test set forth below: 1 10 55 10Hz Vibration frequency range: 10 to 55 to 10Hz 2 1.5mm Amplitude: 1.5mm 3 Direction of vibration:Three mutually perpendicular direction including the direction of stem travel 4 2 Duration: Each 2 hours.	Item 3 Item4.1 Item4.2 Item4.3
4.6	Shock	Test by following conditions (1) (1)installation method: normal (2) 784m/s² (2)Acceleration: 784m/s² (3) 11ms (3)Acting time: 11ms (4) 6 3 18 (4)Test direction: 6 directions Times: 3 times/direction ,total 18 times 	Item3 Item4.1 Item4.2 Item4.3

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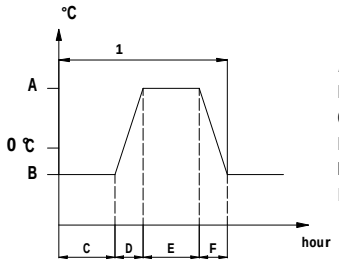
ENVIRONMENTAL SPECIFICATION

ITEM		TEST CONDITIONS	REQUIREMENTS
5.1	Resistance to low temperature	1 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 -20±2 Temperature : -20±2 2 72h Time: 72	Item3 Item4.1 Item4.2 Item4.3
5.2	Heat resistance	1 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 80±2 temperature:80±2 2 72h time: 72h	Item3 Item4.1 Item4.2 Item4.3
5.3	Change of temperature	12 1 . After 12 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 +80 ± 2 B -20 ± 2 C 2 D 1 E 2 F 1	Item3 Item4.1 Item4.2 Item4.3
5.4	Moisture resistance	1 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 40±2 temperature: 40±2 2 90% 96% relative humidity:90% to 96% 3 96h time: 96h	≤200mΩ Contact resistance≤200mΩ ≥10MΩ Insulation Resistance≥10MΩ Item3.3 Item4.1 Item4.2 Item4.3

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ITEM		TEST CONDITIONS	REQUIREMENTS
5.6	Life test	15—18 10 000 . Test at a uniform rate of 15-18 rounds per minute for 10,000 rounds without load.	≤2Ω Contact resistance≤2Ω ≥10MΩ Insulation Resistance≥10MΩ Item3.3 Item4.1 Item4.2 Item4.3
5.7	Solderability	: Measurements shall be made following the test set forth below: (1) :245±5 Solder temperature : 245±5 (2) :2s±0.5s Immersion time:2s±0.5s	90% Except for the edge, the coating should cover a minimum 90%
5.8	Salt Mist	: The switch shall be checked after following test: 1 35 ±2 temperature: 35 ±2 2 5±1% salt solution : 5±1%(solids by mass) 3 8±1h Time: 8±1h After test, salt deposit shall be removed by running water.	No remarkable corrosion shall be recognized in metal part.
5.9	Sulfuration resistance	1 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 H_2S 3ppm±1ppm H_2S gas concentration: 3ppm±1ppm 2 24h Time: 24h 3 40±2 90 95%RH temperature: 40±2 90 95%RH	≤500mΩ Contact resistance≤500mΩ Item3.3 Item4.1 Item4.2 Item4.3
5.10	Resistance to soldering heat test	: Measurements shall be made following the test set forth below: (1) :265±5 Solder temperature : 265±5 (2) :3s±0.5s Immersion time: 3s±0.5s	, Without deformation of case or excessive looseness of terminal selectrical characteristics shall be satisfied

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SOLDERING CONDITIONS:

ITEM		Recommended conditions	
6.1	Hand soldering	(1) ≤ 350 (2) ≤ 3 s Please practice according to below conditions: (1) Soldering temperature: ≤ 350 (2) Continuous soldering time: ≤ 3s	
6.2	Conditions for Auto-dip	Flux built-up	Mounting surface should not be coated with flux
		Preheating temperature	80~132 . Ambient temperature of the soldered surface of PC board 80~132 .
		Preheating time	45s Max
		Soldering temperature	255 ± 5 .
		Continuous dipping time	3 ± 1s
		Number of soldering	1 times max.

(Notes)

a

Prevent flux penetration from the top of the switch

b

After switches were soldered,please be careful not to clean switches with solvent or other similar products.

c

Right after switches were soldered;please be careful not to load to on the knobs of switches.

d

Please be cautions not to give excessive static load or shock to switches.

e

Please be careful not to pile up P.W.B.after switches were soldered

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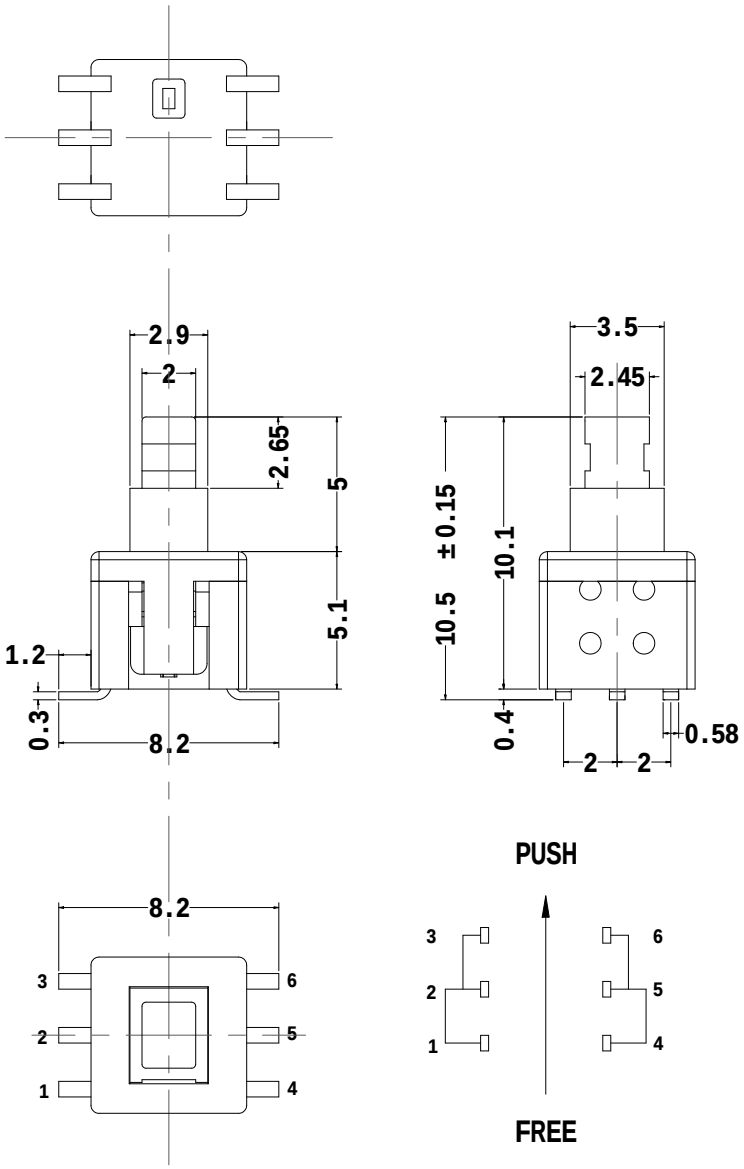

General tolerance ±0.2mm

NO.	NAME	MATERITAL	QTY.	PLATING
7	Crochet	SUS	1	
6	SPRING	CARBON STEELWIRE	1	Natural
5	CONTACT	PHOSPHOR COPPER	1	Ag platingd
4	TERMINAL	BRASS STRIP	1	Ag platingd
3	CASE	PPA	1	BLACK
2	COVER	PPA	1	BLACK
1	KNOB	PA6T	1	YELLOW