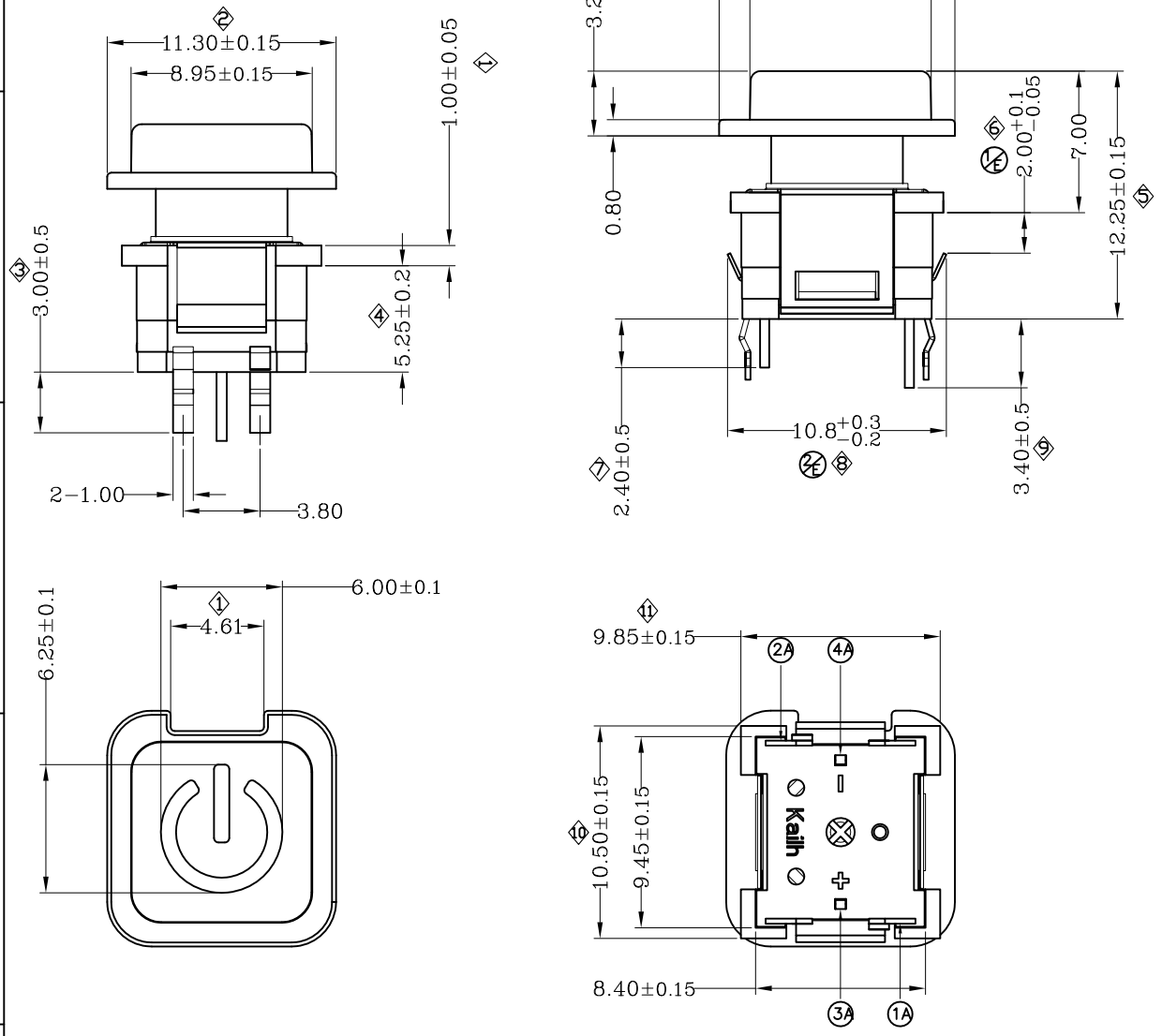
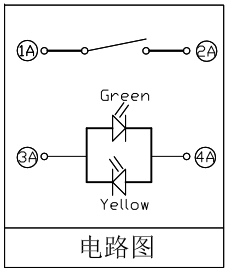
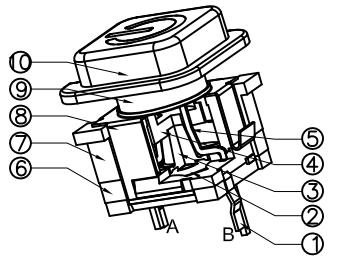
ABIDE BY WEEE & ROHS





电路图



■ Specification :

- 1.Rated voltage: DC.12V 50mA;
- 2.Contact Resistance: 100mΩ(Max);
- 3.Insulation resistance: 100MΩ(Min) DC250V;
- 4.Dielectric strength: AC250V(50-60Hz)for 1 minute;
- 5.Operation force:450±100gf;
- 6.Travel closure:1.20±0.25mm;
- 7.Life Test 25,000 Cycles(min).
- 8.LED specifications represent bare lights for reference omly.

ITEM	PART NAME	TER'NO.	QTY.	MATERIAL	FINISHING	REMARK
⑩	KNOB	——	1	PC	Transparent	——
⑨	Keystoke	——	1	PC	Transparent	——
⑧	Shell	——	1	Stainless Steel	——	——
⑦	Cover	——	1	PA10T	Black	——
⑥	Base	——	1	PA10T	Black	——
⑤	LED	——	1	ø2.8mm Super Bright Yellow&Green LED		——
④	Pad	——	1	LCP	Black	——
③	Rubber pad	——	1	Rubber	Gray	——
②	Contact	——	1	Stainless Steel	Plating Au(4u")	——
①	Terminal	A.B	2	Brass	Plating Au(3u")	——

ECN NO.	REV.	DATE.	DESCRIPTION.	CHANGE.	CHECK.	APPRO.
ECN-2210-013	E	2022.10.13	Adjust dimensional tolerances in drawing according to customer drawing.	QK		
ECN-2007-13	D	2020.07.20	Shell Dimension change to 2.0 from 1.9 ①E ②E	JIN		
ECN-1709-16	C	2017.09.20	客户反馈工艺脚与客户端固定架有接地现象，为改善异常将剪除工艺脚	HQC		
ECN-1501-02	B	2015.01.13	客户反映4个角强度不够，会断裂，加厚后增加强度	Zhanghuijun		
——	A	2014.06.12	NEW	——	——	——

APPROVALS		DATE
DRAWN	JIN	2020.10.12
CHECKED		
APPROVALS		

东莞市凯华电子有限公司
KAIHUA ELECTRONICS CO.,LTD

TOLERANCES ARE			ANGLE
	30<L	±0.30	±2°
	10<L≦30	±0.20	
	5<L≦10	±0.15	
	L≦5	±0.10	

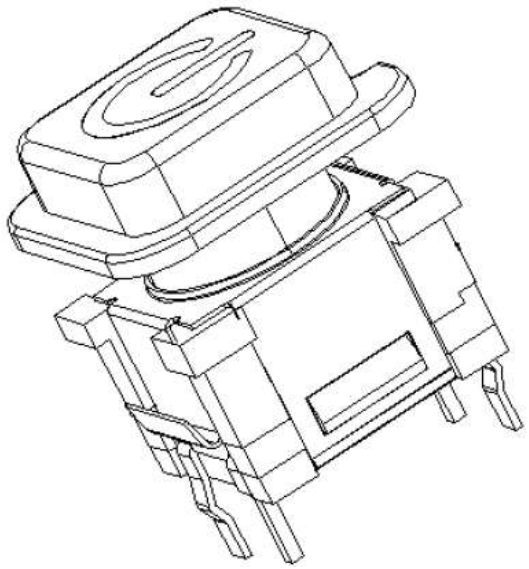
TITLE:	LA9313 Lamp Switch
PART NO:	CLA931301D18
UNIT: mm	SCALE: 1:1 PROJ:
DRAWING NO.	KHA-LA9313-007EN
SHEET:	1OF1

凯华电子 Kailh KAIHUA ELECTRONICS

Document Number:

KH-PS1701-42

Product Specification



P/N: **CLA931301D18**

Title : **Lamp Switch**

Rev.	ECN	Release and Revision Description:	Prepared By /Date:	Checked By/Date:	Approved By/Date:
A	— —	New releasing	HQC 2017/05/20	LPH 2017/05/20	ZJJ 2017/05/20

Content

1. Scope:

This Product Specification covers the requirement of Micro switch on product performance, test methods and quality assurance provisions.

2. Product Application：

The Switch is applied in all types of electrical appliances. Please let us know before using any of the products in the application not described abovev.

3. Technology Parameters:

Ambient Humidity：	45~85% R.H.；
Operating Temperature Range：	-10℃～+70℃；
Storage Temperature Range：	-20℃～+80℃；
Suggested storage period ：	about 6 months

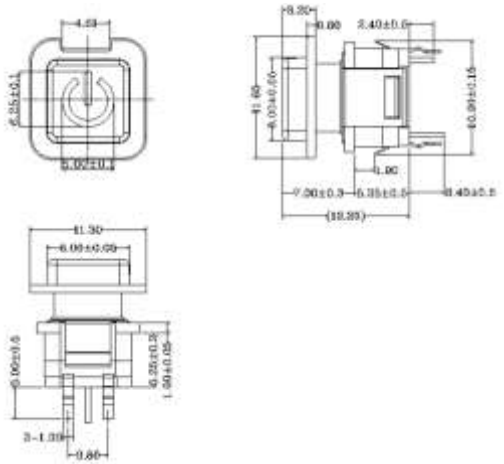
Normal Condition:

Ambient temperature：	20±5
Relative humidity：	65%±5% R.H.；
Air pressure ：	86~101KPa;
Contact Resistance：	100 mΩ Max；
Operation Force：	450±100gf
Solder Ability ：	Tim-lead soldering ： 245℃±5℃ 5s±0.5s；
	Lead-free welding ： 255℃±5℃ 5s±0.5s；
Withstand Soldering Temperature:	Wave soldering： 260±5℃ 5±0.5s；

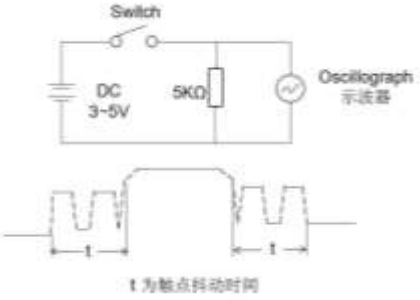
4. Rated Performance Requirements:

Rating：	DC12V / 50mA
Insulation Resistance：	≥100MΩ/DC 250V;
Withstand Voltage：	250V AC 1 Minute;
Mechanical Life：	25,000 Cycles.

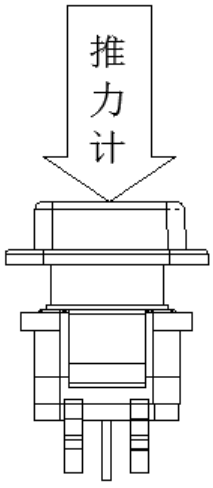
5. Profile Dimensions :

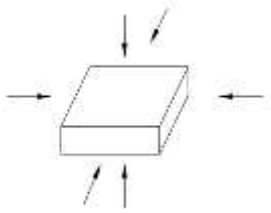


6. Electrical Performance:

Item	Description	Test Condition	Requirement
6.1	Contact Resistance	Static load: (Operation force)x2, which is applied on the center of Switch stem. Be measured when the switch contact stabilization. Measurement tool: Contact resistance Meter. (1KHz, 20mV,5~50mA) Measured at low current (100mA or less).	100mΩ Max
6.2	Insulation Resistance	Apply a Voltage of DC 250 V for 1 minute, according to the below method. (1) Between terminals. (2) Between terminal and Body.	100MΩ Min
6.3	Dielectric withstanding voltage	Apply a Voltage of AC250 V (50~60Hz) for 1 minute, according to the below method. (1) Between terminals. (2) Between terminal and Body.	No evidence of breakdown.
6.4	Bouncing	Operation speed：3~4 times/s Oscilloscope Switch Bouncing Test Circuit. 	Before Life cycle: On:5ms MAX Off: 5ms MAX After Life cycle: On:10ms MAX Off 10ms MAX

7. Mechanical Performance:

It	Description	Tes Condition	Requirement
7.1	Operation force	Operate the keystoke of the switch and then increase press strength gradually, Measured maximum operation force while the travel of the switch is full.	450±100gf
7.2	Travel	Operate the keystoke of the switch vertically, the travel distance of keystoke moving from its free position to maximum moving distance shall be measurement.	1.20±0.25mm
7.3	Static Strength	A static load of 3kgf shall be applied in the direction of button operation for a period of 60 seconds. 	No damage (Electrical and mechanical）
7.4	Stem Pull Strength	Break by a pull force applied opposite to the direction of stem operation.	500gf Min

7.5	Shock	Measured by according to the below condition: (1) Acceleration: 80g accelerated speed (2) Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles. . 	Shall meet No.6，7.1，7.2
7.6	Life Test	(1) 1 Weight:550gf (2) Operation speed：60cycles/min (3) Push force：Maximum value of operation force. (4) Cycles：25,000 times Min	No abnormalities shall be recognized in appearance and construction Contact resistance:10 Ω Max Operation force and tactile force：Variation rate within ±30%

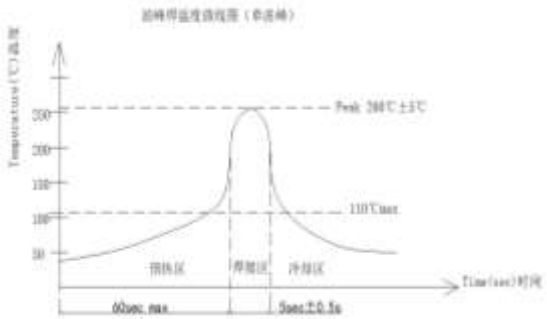
8. Environmental Performance:

Item	Description	Test Cond ion	Requirement
8.1	Cold test	(1) Temperature : - 20±2℃ (2) Duration of test: 96h (3) Take off a drop water (4) Standard conditions after test : 1	Contact resistance: 200mΩ Max Shall meet : No. 6.2 to 6.4 No. 7.1 to 7.2
8.2	Heat test	(1) Temperature : 80±2℃ (2) Duration of test: 96h (3) Take off a drop water (4) Standard conditions after test : 1h	Contact resistance: 200mΩ Max Shall meet : No. 6.2 to 6.4 No. 7.1 to 7.2

<table>
<tr>
<td>8.3</td>
<td>Temperature cycle</td>
<td>(1) Test cycles: 5 cycles
(2) Standard condition after test:1h

<table>
<tr><th></th><th>Temperature</th><th>Duration of test</th></tr>
<tr><td rowspan="4">1 cycle</td><td>20±5℃</td><td>1h</td></tr>
<tr><td>-20±5℃</td><td>1h</td></tr>
<tr><td>20±5℃</td><td>h</td></tr>
<tr><td>80±5℃</td><td>1</td></tr>
</table>
</td>
<td>Contact resistance:
200mΩ Max
Shall meet :
No. 6.2 to 6.4
No. 7.1 to 7.2</td>
</tr>
<tr>
<td>8.4</td>
<td>Soldering heat test</td>
<td>Soldering area: 1/2 of PWB thickness.
(PWB: T=1.6mm)

Soldering temperature: 260±5℃
Soldering time: 5±0.5s

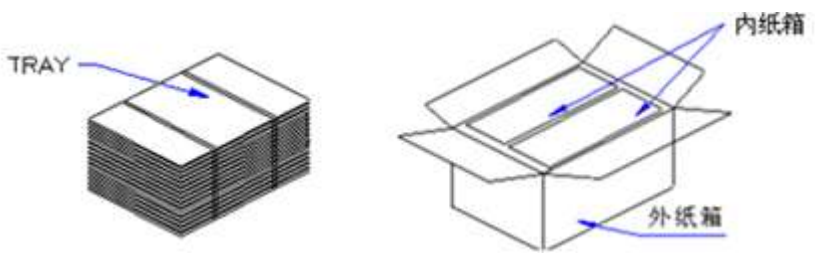
  </td>
<td>Appearance:
No abnormality.</td>
</tr>
<tr>
<td>8.5</td>
<td>Solder ability</td>
<td>Lead-tin soldering：
Soldering temperature: 245±5℃
Soldering time: 5±0.5s

Lead free soldering：
Soldering temperature: 255±5℃
Soldering time: 5±0.5s</td>
<td>At least 90% of surface area of immersed portion shall be covered by solder.
.</td>
</tr>
<tr>
<td>8.6</td>
<td>Humidity test</td>
<td>(1) Temperature : 60±2℃
(2) relative humidity: 90~95% R.H.
(3) Duration of test: 96h
(4) Take off a drop water
(5) Standard conditions after test: 1h</td>
<td>Contact resistance:
200mΩ Max
Shall meet :
No. 6.2 to 6.4
No. 7.1 to 7.2</td>
</tr>
</table>

8.7	Salt Spray	Apply the following environment to test : (1) Temperature : 35±5℃ (2) Salt water density: 5±1% (3) Duration: 24hours (4) After test, the salt deposit shall be removed by running water.	Appearance: No corrosion spot, no crack, no base plate naked. Contact Resistance: 200 mΩ Max
8.8	Withstand K_2S	Apply the following environment to test: (1) Temperature: Natural (2) K_2S Density: 2%； (3) Duration: 2 minute.	Appearance: No corrosion spot, no crack, no base plate naked. Contact Resistance: 200 mΩ Max
8.9	Vibration tes	1) Amplitude: 1.5 mm 2) Sweep rate: 10-55-10HZ for 1 minute 3) Sweep method: Logarithmic frequency sweep rate 4) Vibration direction : X, Y, Z(3 directions) 5) Time : Each direction 2 hours (Total 6 hours)	Shall meet No.6，7.1，7.2

9. Packaging

Packaging type: Tray, 108Pcs/Tray, 1080Pcs/Inner Carton. 4320Pcs/Outer Carton.



10.Precautio

10.1 Immersion Soldering condition

ITEM	CONDITION
Preheat temperature	110℃ Max (Ambient temperature of soldering surface of P.W.B)
Preheat time	60s, Max
Area of flux	1/2 Max of PWB Thickness
Temperature of solder	260±5℃ 260±5℃
Time of immersion	5±0.5s 5±0.5s
Number of soldering	2times Max (But should down heat of the first soldering)
Printed wiring board	Single side copper-clad laminates

(1) After switches were soldered, please be careful not to clean switches with solvent

(2) Under the condition of using soldering iron, soldering temperature shall be 350℃±5℃ with 3±0.5s.

10.2 Notes

(1) Please be cautious not to give excessive static load or shock to switches.

(2) Please be careful not to stack up P. W. B. after switches were soldered.

(3) Preservation under high temperature and high humidity or corrosive gas should be avoided Especially. When you need to preserve for a long period, do not open the carton.

(4) The standard storage period is 3 months, with maximum up to 6months, preferably to be used as soon as possible. After opening the package, you should put the remaining switches in a plastic bag to prevent from damp and corrosive gas.

(5) This Product Specification is considered as the technical agreement on product between the receiving customer and Kailh. Any information on Product Catalogue which is in conflict with or different from the corresponding information of this document is considered as invalid.

(6) It will be considered that customer already confirmed and accepted this specification if customer issue purchase order to us directly.

(7) If there is no order or no request for new specification after 1 year upon this specification is issued, the specification will be regarded as invalid.

(8) Products meet the ROHS & REACH environmental management substances control standards