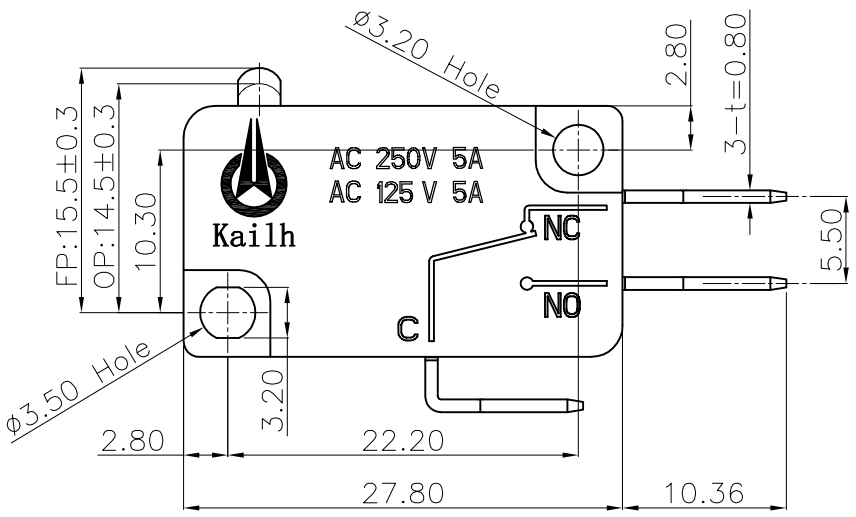
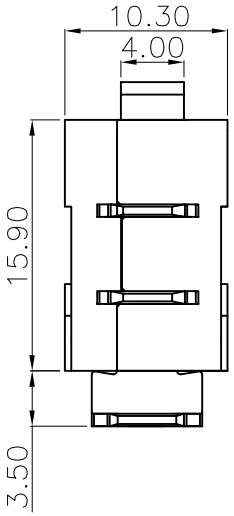
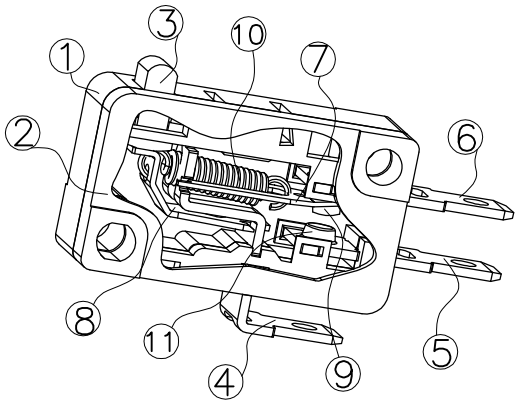
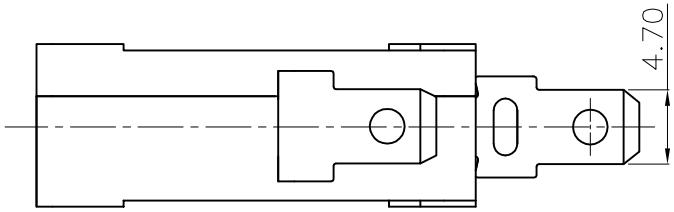
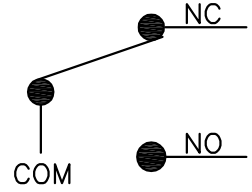
ABIDE BY WEEE & ROHS











Circuit Diagram

? Technical specifications:
? Current Ratings: AC 250V 5A / AC 125V 5A
? 2. Contact Resistance:≤100mΩ
? 3. Insulation Resistance≥100MΩ DC500V
? 4. Withstand Voltage: AC1000V 1 minute
? 5. Operating Force: 250±50gf
? 6. Ambient Temper. Used: -25℃ to 85℃
? 7. Electrical Life: 10,000 cycles.
? 8. Mechanical Life: 1, 000,000 cycles.

ITEM	PART NAME	TER'NO.	QTY.	MATERIAL	FINISHING	REMARK
⑪	Stationary Contact	——	1	Ag Alloy/Cu	Natural	——
⑩	Spring	——	1	Stainless Steel	Natural	——
⑨	Moving Contact	——	1	Ag Alloy/Cu	Natural	——
⑧	Fixed Rod	——	1	Brass	Natural	——
⑦	Change Plate	——	1	Brass	Ag-Plated	——
⑥	NC Terminal	6	1	Brass	Ag-Plated	——
⑤	NO Terminal	5	1	Brass	Ag-Plated	——
④	COM Terminal	4	1	Brass	Ag-Plated	——
③	Keystoke	——	1	PBT	Black	——
②	Cover	——	1	PBT	Black	——
①	Base	——	1	PBT	Black	——

APPROVALS		DATE
DRAWN	Xiao Yijiang	2022.05.20
CHECKED		
APPROVALS		

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

TITLE: MI1910 MICRO SWITCH
PART NO: CMI271509W200A
UNIT: mm SCALE: 1:1 PROJ:
DRAWING NO. KHA-MI2715-001EN SHEET: 1OF1

TOLERANCES ARE: 30<L ±0.30; 10<L≤30 ±0.20; 5<L≤10 ±0.15; L≤5 ±0.10; ANGLE ±2°

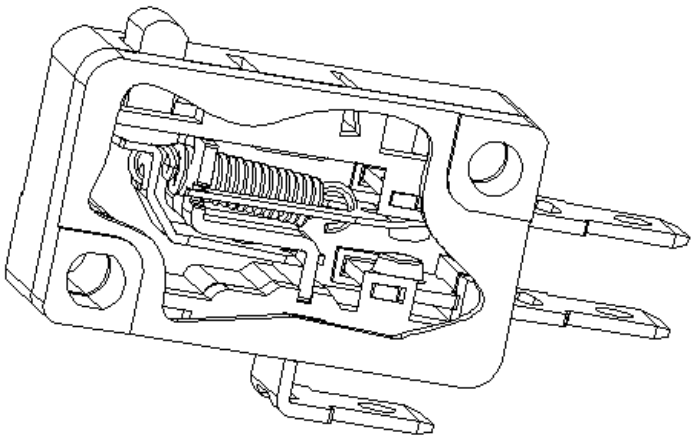
ECN NO.	REV.	DATE.	DESCRIPTION.	CHANGE.	CHECK.	APPRO.
——	A1	2022.05.20	NEW	Xiao Yijiang	——	——

凯华电子 Kailh KAIHUA ELECTRONICS

Document Number:

KH-PS2208-25

Product Specification



P/N: CMI271509W200A

Title : **Micro Switch**

Rev.	ECN	Release and Revision Description:	Prepared By /Date:	Checked By/Date:	Approved By/Date:
A	--	New releasing	XYL/2022/08/22	XYL/2022/08/22	ZJJ/2022/08/22

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 the automobile, home appliances , electric tools, industrial control equipment, medical equipment and security equipment. Please let us know before using any of the products in the application not described above.

3. Technology Parameters:

Ambient Humidity:	45~85% R.H.;
Operating Temperature Range:	-25℃～+85℃;
Storage Temperature Range:	-40℃～+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:	250±50gf;
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;

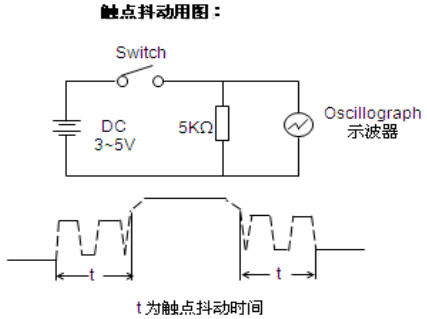
4. Ratings:

Rating:	AC 250V 5A / AC 125V 5A;
Insulation Resistance:	≥100MΩ/DC 500V;
Withstand Voltage:	1000V AC 1 Minute;
Electrical life:	10,000 Cycles;
Mechanical Life:	10,000,000 Cycles(Without Load).

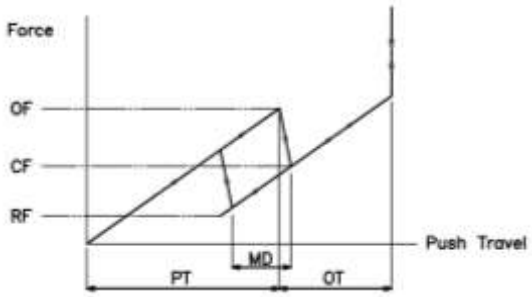
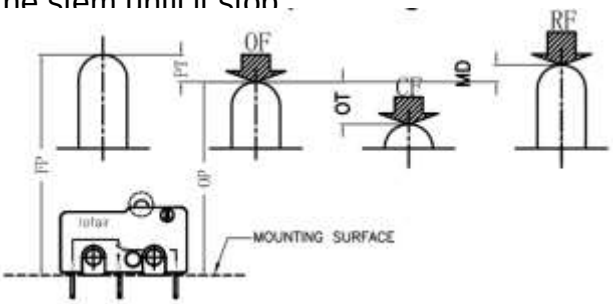
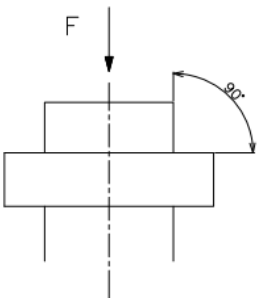
5. Profile Dimensions

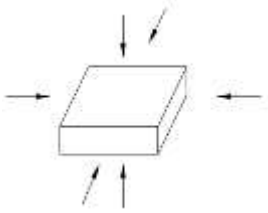
See the product drawing

6. Electrical Performance:

Item	De cription	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)	100mΩ Max
6.2	Insulation Resistance	Apply a Voltage of DC 500 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 AC 1000 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 Slightly push the center of stem by 3~4 times/s, to test the bounce at “ON” and “OFF” Oscillo scope Switch Bouncing Test Circuit 	Before Life cycle: On:5ms MAX Off: 5ms MAX After Life cycle: On:10ms MAX Off: ms MAX

7. Mechanical Performance:

Item	Description	Tes Condition	Requirement
7.1	Loading Curve	Place the vertical direction of switch operation and gradually increase the load applied to the center of the stem until it stop. 	See page 08
7.2	Loading Parameter	Place the vertical direction of switch operation and gradually increase the load applied to the center of the stem until it stop. 	See page 08
7.3	Static Strength	A static load of 1 Kgf shall be applied in the direction of button operation for a period of 60 seconds. 	No damage (Electrical and mechanical） Contact resistance 100mΩ Max
7.4	Stem Pull Strength	Break by a pull force applied opposite to the direction of stem operation	500gf Min

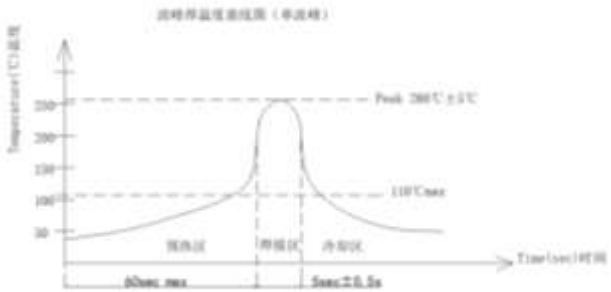
7.5	Shock	Measured by according to the below condition: (1) Acceleration: 80g accelerated speed (2) Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles. . 	Shall meet No.6，7.1，7.2.
7.6	Life Test	(1) Electrical life test: See the safety testing process. (2) Mechanical life test: a. Without Load b. Operating speed : 60 cycles/minute Push force : maximum value of operating force twice c. Mechanical Life: 1，000,000 cycles	(1) Electrical life：10，000 cycles (2) Mechanical life test after:： Contact resistance: 10Ω max. Bounce:10m sec max No 6.2 to 6.4 and 7.2 shall be satisfied

8. Environmental Performance:

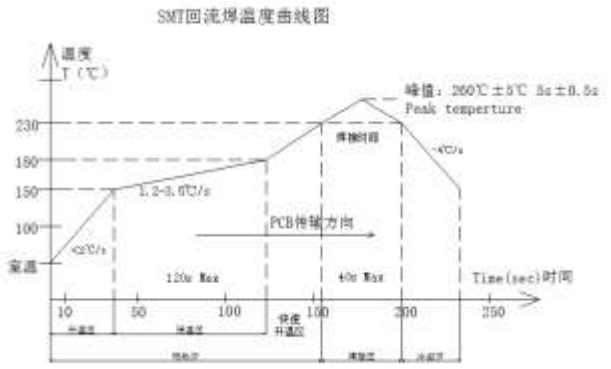
Item	Description	Test Condition	Req ment
8.1	Cold test	(1) Temperature : - 20±2℃ (2) Duration of test: 96h (3) Take off a drop water (4) Standard conditions after test : 1h	Contact resistance: 200mΩ Max Shall meet : No. 6.2 to 6.4 No. 7.1 to 7.2
8.2	Heat test	(1) Temperature : 80±2℃ (2) Duration of test: 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><td></td><td>Temperat e</td><td>Duration t est</td></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>70±5℃</td><td>1h</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: T/2 of PWB thickness.
(PWB: T=1.6mm)
Soldering temperature: 260±5℃
Soldering time: 5±0.5s

Automatic Reflow soldering：
For the product of SMT, according to below condition:
oldering temperature: 260±5℃
Soldering time: 5±0.5s

</td>
<td>Appearance:
No abnormality.</td>
</tr>
</table>

8.5	Solderability	1 Lead-tin soldering： Soldering temperature: 245±5℃ Soldering time: 5±0.5s Lead free soldering： Soldering temperature: 255±5℃ Soldering time: 5±0.5s	At least 90% of surface area of immersed portion shall be covered by solder.
8.6	Humidity test	(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	Contact resistance: 200mΩ Max Shall meet : No. 6.2 to 6.4 No. 7.1 to 7.2
8.7	Salt Spray	Apply the following environment to test(Only for contact 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: 35±5℃ (2) K_2S Density: 2%； (3) Duration: 2 minute.	Appearance: No corrosion spot, no crack, no base plate naked. Contact Resistance: 200 mΩ Max

9. Loading Parameter (FP/OP/PT/OF/OT/MD/RF) Specification：

Parameter	Unit	Specification	Remark
FP	mm	18.30±0.30	
OP	mm	17.30±0.30	
OF	gf	250±50	

10. Packaging :

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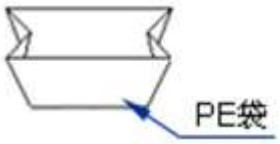
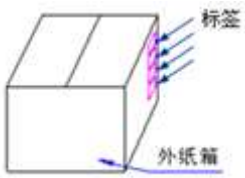
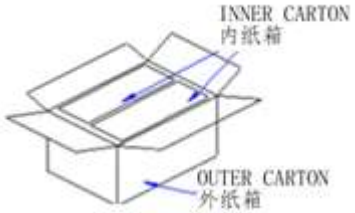
Packing Style	Quantity	Notes
PE Bag	150PCS	150PCS/BAG
Carton	1500PCS.	PE Bag: 10PCS







11.Precaution

11.1 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	2time 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.

11.2 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