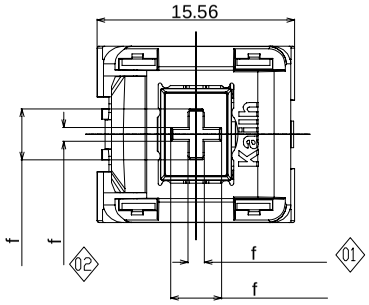
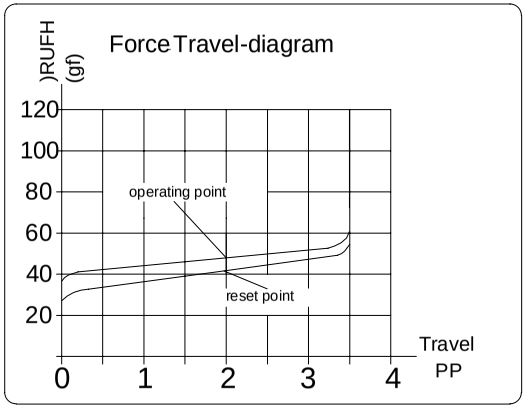
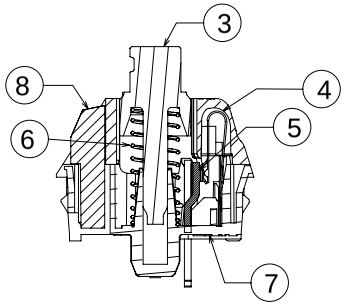
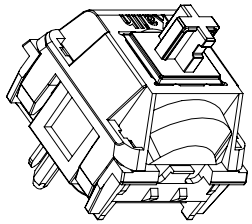
ABIDE BY ROHS





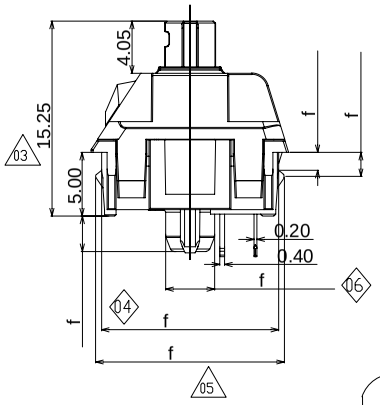


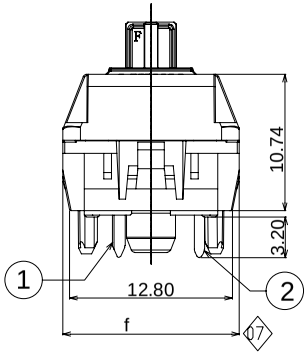


■ Specification :

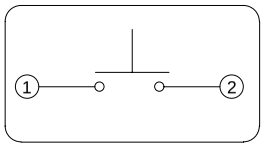
- 1.Rating :12V AC/DC max. 2V DC min. 10mA AC/DC max. 10μA DC min.
- 2.Contact Resistance : 200mΩ Max
- 3.Insulation Resistance :100MΩ Min (DC500V)
- 4.Withstand Voltage :AC100V(50-60Hz) for 1 minute
- 5.Bounce Time:≤5msec (at 16 in/sec. actuation speed)
- 6.Bottom Force :45±8gf
- 7.Pre travel:2.0±0.5mm
- 8.Total travel:3.6±0.4mm
- 9.Operating Life :70,000,000 Cycles(temporary).

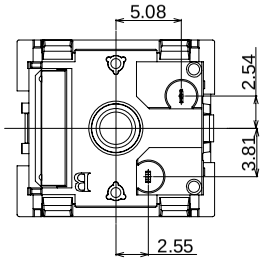
〈Feel is allowed to have difference before and after life test〉

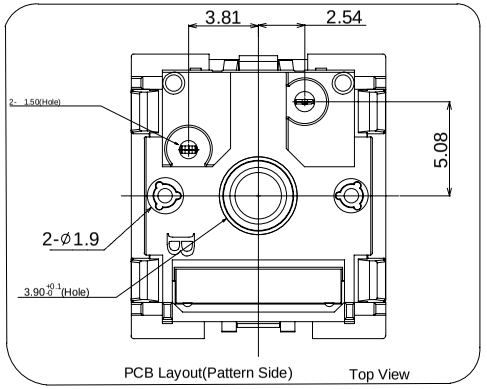


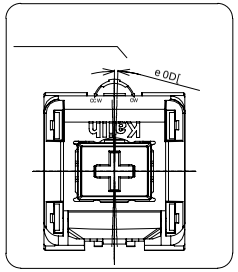


SWITCH FUNCTION









ITEM	PART NAME	TER'NO.	QTY.	MATERIAL	FINISHING	REMARK
⑧	Light guide	——	1	PC	——	——
⑦	Base	——	1	PA66	——	——
⑥	Spring	——	1	Stainless Steel	——	——
⑤	contact	——	2	Composite gold	——	——
④	Cover	——	1	PC	——	——
③	Keystroke	——	1	POM	——	——
②	static plate	——	1	Brass	Sn over Ni-plating	——
①	movable plate	——	1	Copper Alloy	——	——

APPROVALS		DATE	DONGGUAN CITY KAIHUA ELECTRONICS CO.,LTD
DRAWN	Jiang Zhiwei	2024.07.27	Kailh
CHECKED			TITLE: PG1511 Keystroke Switch
APPROVALS			PART NO. CPG151101S337
TOLERANCES ARE: 30<L f; 10<L≦30 f; 5<L≦10 f; L≦5 f		ANGLE fe	UNIT: mm / SCALE: 1:1 / PROJ / DRAWING NO. KHA-PG1511-543EN / SHEET 1 OF 1

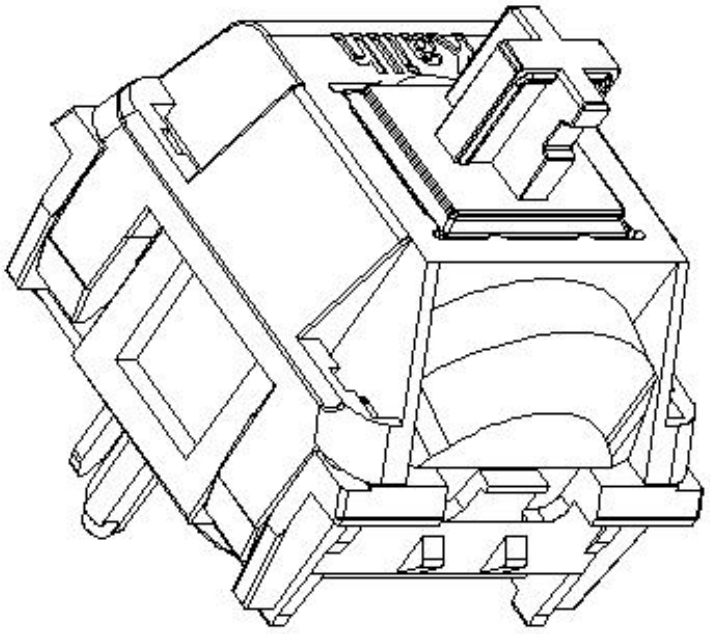
ECN NO.	REV.	DATE.	DESCRIPTION.	CHANGE.	CHECK.	APPRO.
——	A	——	NEW	——	——	——

凱華電子
KAIHUA EELETRONICS

Document Number:

KH-PS2408-01

Product Specification



P/N: CPG151101S337			Title: **PG1511Keyboard Switch**		
Rev.	ECN	Release and Revision Description:	Prepared By /Date:	Checked By/Date:	Approved By/Date:
A	— —	New releasing	2024-08.01	2024-08.01	2024-08.01

1.Scope/ :

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

2.Product Application/

Mainly applied on computer keyboards, cash registers, industrial equipment and Man-Machine interface.

3.Technology Parameters/

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

Require the tin part on the switch terminals should keep good after storage guarantee date

Normal Condition:

Ambient temperature	20± 2
Relative humidity	65%± 5% R.H.
Air pressure	86~101KPa;

Solder Ability :

245± 5 5± 0.5s

255± 5 5± 0.5s

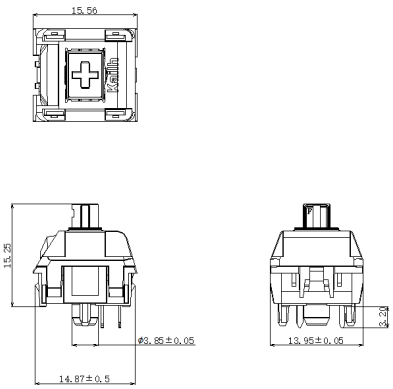
Withstand Soldering Temperature :

260± 5 5± 0.5s

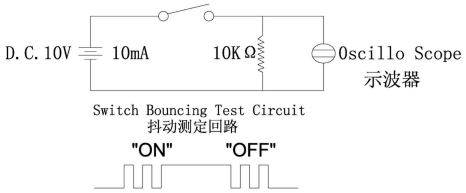
4.Ratings/

Rating	12V AC/DC max.2V DC min. 10mA AC/DC max.10
Insulation Resistance	100M /DC 500V; ADCmin
Withstand Voltage	100V AC 1 Minute;
Mechanical Life	70,000,000 Cycles.

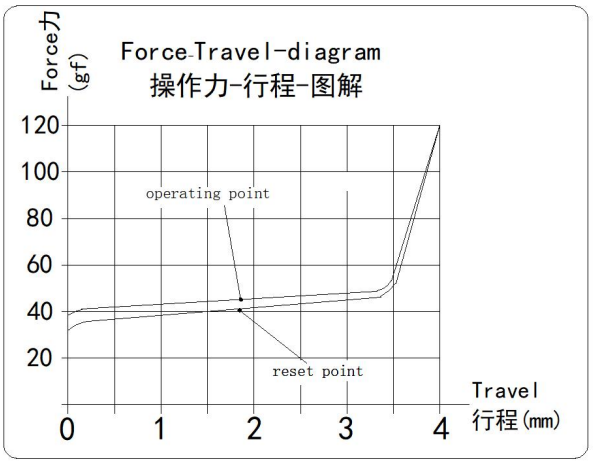
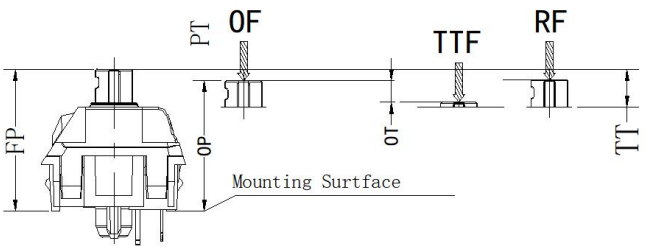
5.Profile Dimensions /

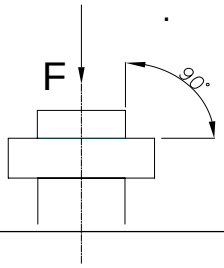
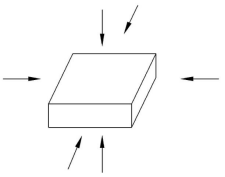


6. Electrical Performance/

Item	Description	Test Condition	Requirement
6.1	Contact Resistance	Static load: (Operation force)x2, which is applied on the center of Switch stem. 2 . Measurement tool: Contact resistance Meter. (1KHz, 20mV,5~50mA) 100mA . Measured at low current (100mA or less).	200m Max 200m
6.2	Insulation Resistance	Apply aVoltage of DC 500 Vfor 1minute, according to the below method. (1) Between terminals. (2) Between terminal and Body. 500V DC 1 . (1) (2)	100M Min 100
6.3	Dielectric withstanding voltage	Apply aVoltage of AC100 V(50~60Hz) for 1 minute, according to the below method. (1) Between terminals. (2) Between terminal and Body. 100V AC 1 . (1) (2)	No evidence of breakdown .
6.4	Bouncing	Operation speed 3~4 times/s 3~4 Oscillo scope Switch Bouncing Test Circuit .  	Before Life cycle: On:5ms MAX,5 Off: 5ms MAX,5 After Life cycle: On:10ms MAX,10 Off: 10ms MAX,10

7. Mechanical Performance/

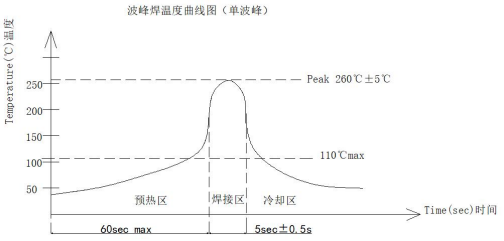
Item	Description	Test Condition	Requirement
7.1	Load Curve	Place the vertical direction of switch operation and gradually increase the load applied to the center of the stem until it stop. . 	See page 10 10
7.2	Loading parameter	Place the vertical direction of switch operation and gradually increase the load applied to the center of the stem until it stop. . 	See page 10 10

7.3	Static Strength	A static load of 3kgf shall be applied in the direction of button operation for a period of 60 seconds. 3kgf 60 , . 	No damage (Electrical) And mechanical .
7.4	Stem Pull Strength	Break by apull force applied opposite to the direction of stem operation. , .	5kgf Min
7.5	Shock	Measured by according to the below condition: (1) Acceleration: 80g (2) Cycles of test:3 cycles each in 6 directions, for atotal of 18 cycles. 3 6 . 18 	Shall meet No.6 7.1 7.2. 6 7.1 7.2 .
7.6	Life Test	1) D.C.12V 10mA resistance load D.C 12V 10mA 2) Operation speed: 5-6 times /s 5-6 / 3) Push force: 150gf : 150gf 4) Operation number: 70,000,000cycles : 70,000,000	Contact resistance: 1000 m Max 1000 10ms Max Bouncing 10 Operation force Variation rate within ± 30% 30% .

8. Environmental Performance/

Item	Description	Test Condition	Requirement
8.1	Cold test	(1) Temperature: -20± 2 -20± 2 (2) Duration of test: 48h 48 (3) Take off adrop water (4) Standard conditions after test: 1h 1	Contact resistance: 200m Max Shall meet: No. 6.2 to 6.4 No. 7.1 to 7.2 200m : No. 6.2 to 6.4 No. 7.1 to 7.2
8.2	Heat test	(1) Temperature: 70± 2 70± 2 (2) Duration of test: 48h 48 (3) Take off adrop water (4) Standard conditions after test: 1h 1	Contact resistance: 200m Max Shall meet: No. 6.2 to 6.4 No. 7.1 to 7.2 200m : No. 6.2 to 6.4 No. 7.1 to 7.2
8.3	Temperature cycle	(1) Test cycles: 5cycles 5 (2) Standard condition after test:1h 1	Contact resistance: 200m Max Shall meet: No. 6.2 to 6.4 No. 7.1 to 7.2 200m : No. 6.2 to 6.4 No. 7.1 to 7.2
8.4	Soldering heat test	Soldering area: T/2 of PWB thickness. (PWB: T=1.6mm) 1/2 Soldering temperature: 260± 5 Soldering time: 5± 0.5s 260± 5 5± 0.5	Appearance: No abnormality.

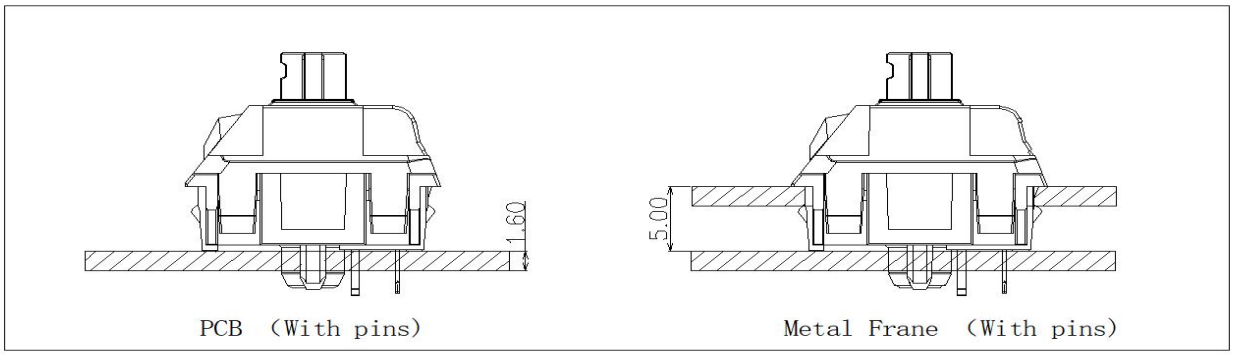
	Temperature	Duration of test
1 cycle	20± 5	1h
	-20± 2	1h
	20± 5	1h
	70± 5	1h



8.5	Solder ability	Lead-tin soldering 5 Soldering temperature: 245± 5 245± 5 Soldering time: 5± 0.5s 5± 0.5 Lead free soldering Soldering temperature: 255± 5 255± 5 Soldering time: 5± 0.5s 5± 0.5	At least 90% of surface area of immersed portion shall be covered by solder. 90% .
8.6	Humidity test	(1) Temperature: 60± 2 60± 2 (2) relative humidity: 90~95% R.H. :90~95% R.H. (3) Duration of test: 48h 48 (4) Take off adrop water (5) Standard conditions after test: 1h 1	Contact resistance: 200m Max Shall meet: No. 6.2 to 6.4 No. 7.1 to 7.2 200m : No. 6.2 to 6.4 No. 7.1 to 7.2
8.7	Salt Spray	Apply the following environment to test: (1) Temperature: 35± 5 : 35± 5 (2) Salt water density: 5± 1 % : 5± 1 % (3) Duration: 12hours : 12 (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 m Max 200

9. Recommended PCB Layout PCB

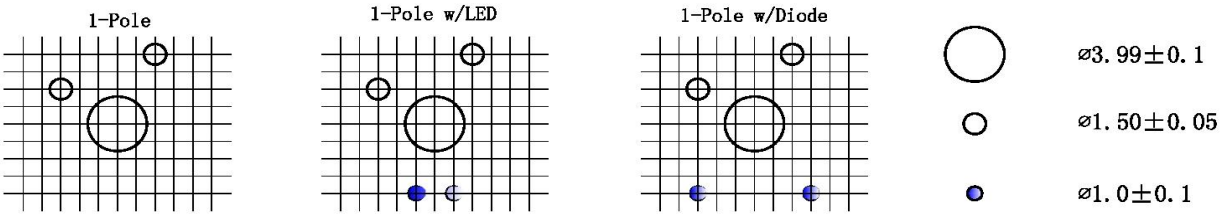
Mounting Options 安装选项



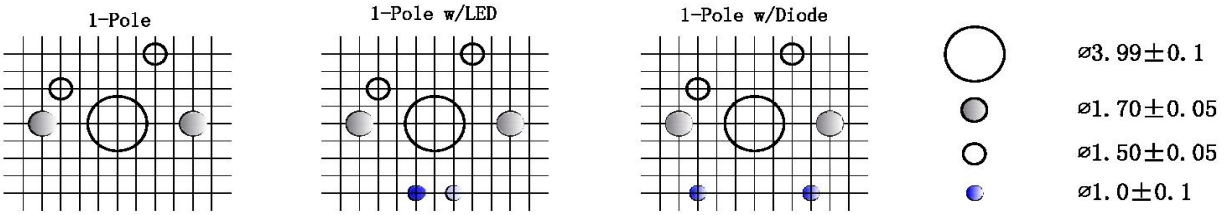
Circuit Board Layouts 电路板布局

Grid line spacing = 1.27mm 网格线间距= 1.27毫米

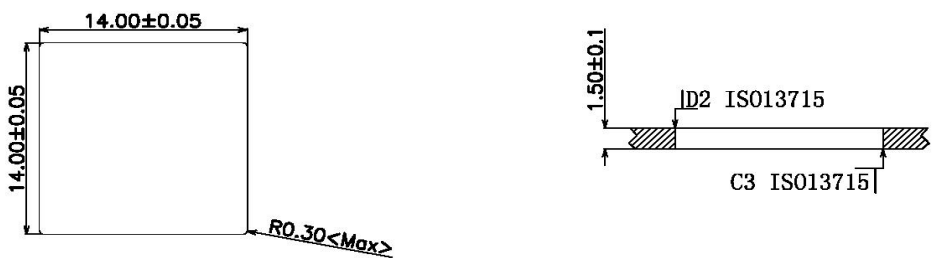
Keyswitch without fixation pins
按键开关不带定位柱



Keyswitch with fixation pins
按键开关带定位柱



Metal Frame Cutout Dimensions



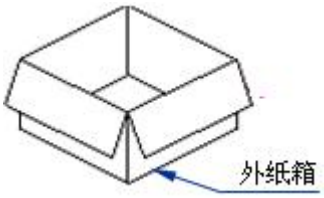
10. Loading Parameter (FP/OP/PT/OF /OT/TT) Specification

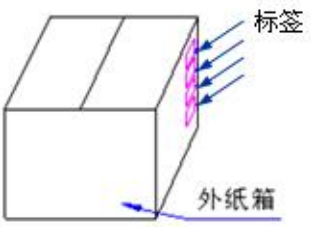
Parameter	Unit	Specification	Remark
FP( )	mm	15.25± 0.2	
OP( )	mm	13.25± 0.7	
PT( )	mm	2.0± 0.5	
OF( )	gf	45± 8	
TT( )	mm	3.6± 0.4	

11. Packaging

Packaging type: Tray, 1000Pcs/Tray, 4000Pcs/Carton.

: Tray ,1000Pcs/ , 4000Pcs/ .





12.Precaution

12.1 Immersion Soldering condition

ITEM	CONDITION
Preheat temperature	110 Max (Ambient temperature of soldering surface of P.W.B) 110 ( )
	60s, Max 60
	1/2 Max of PWB Thickness 1/2
Temperature of solder	260± 5 260± 5
Time of immersion	5± 0.5s 5± 0.5
Number of soldering	2time Max (But should down heat of the first soldering) 2
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

350±5 , 3±0.5

12.2 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 along period, do not open the carton.

. , .

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

3 6 .

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(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.

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(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 1year upon this specification is issued, the specification will be regarded as invalid.

1 .

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

ROHS &REACH