

Product Specification

Number: L-KLS7-KS01-L

Name: Keyboard switch

Customer: _____

Date: 2026-05-06



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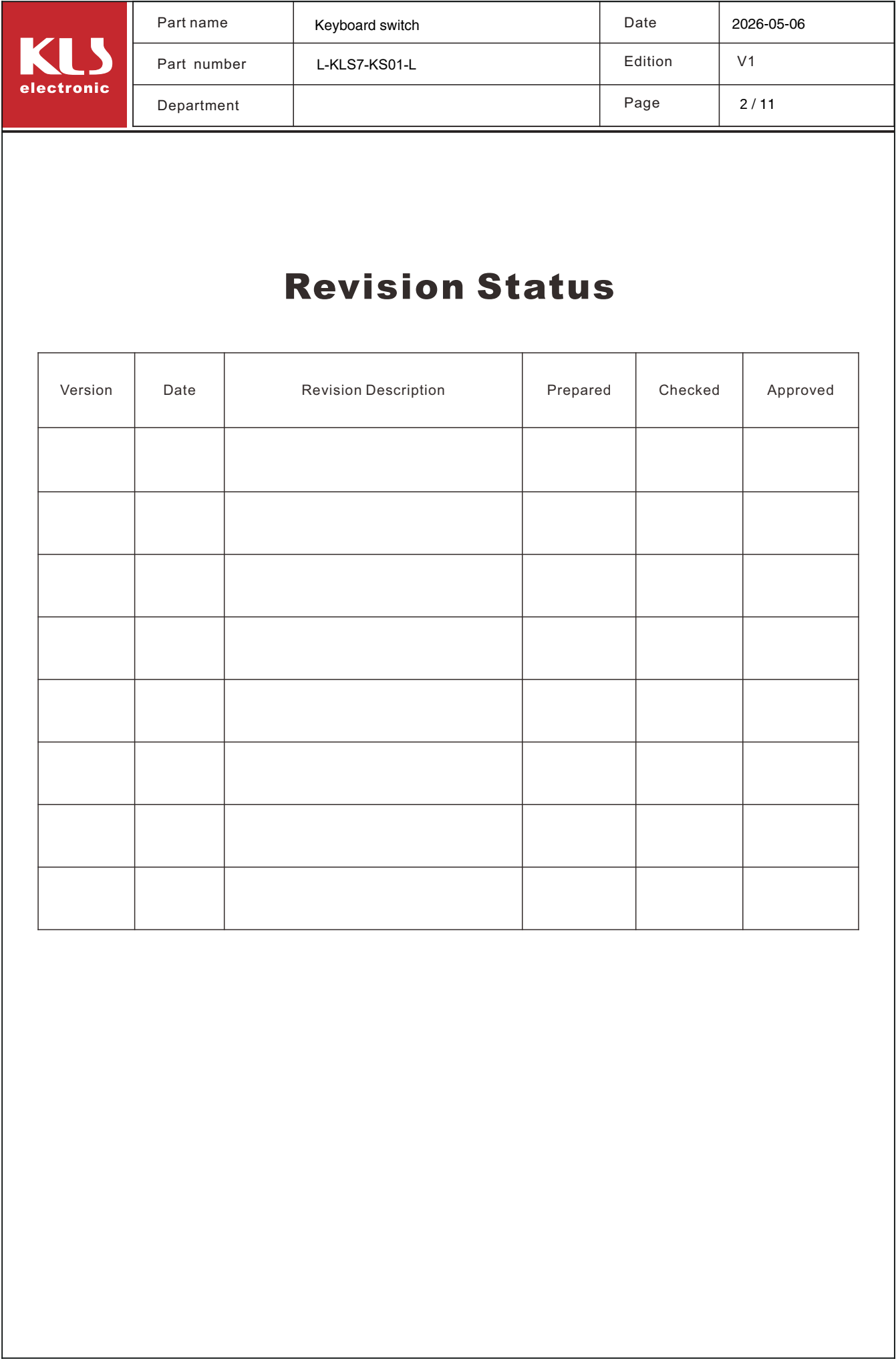
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Compi	Check	Review	Approva
Jenny	Jack.C		

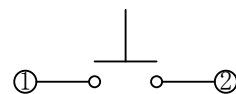
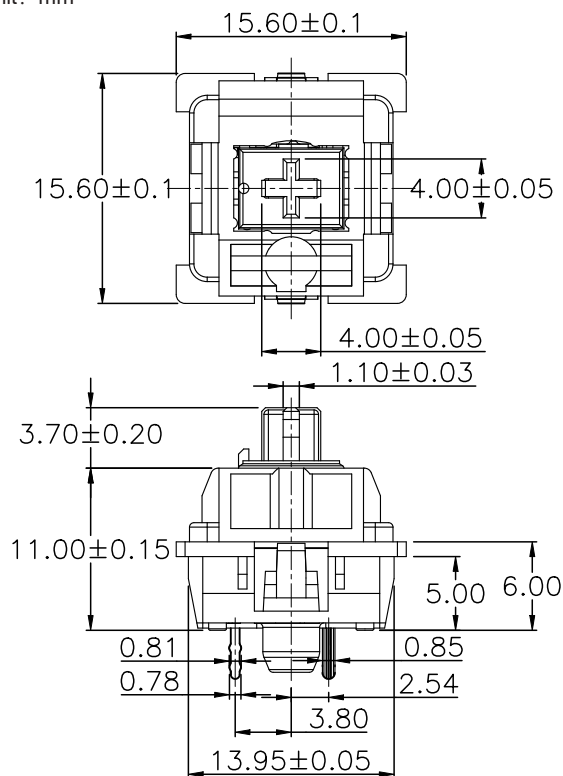


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Revision Status

[illegible]

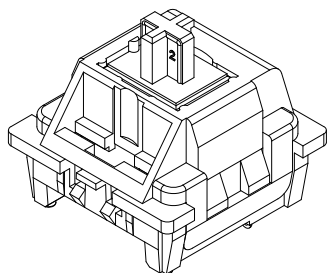
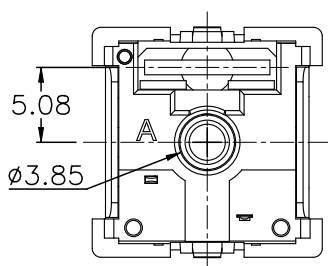
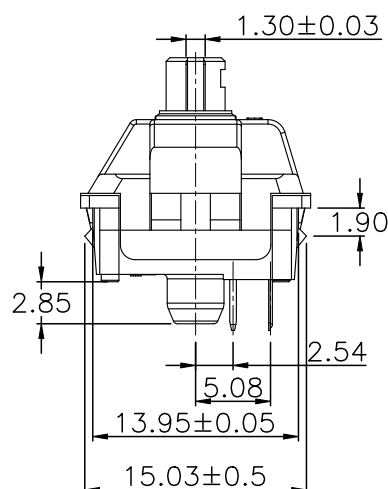
Unit: mm



Circuit Diagram

L-KLS7-KS01-L

L: blue color



Technical parameters:

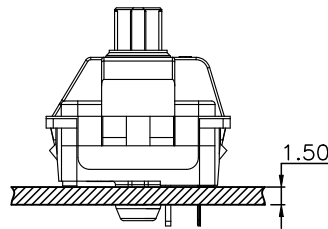
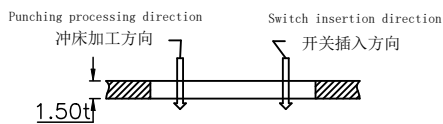
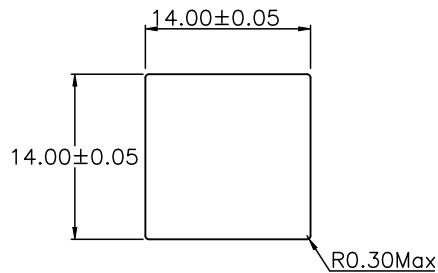
Voltage:	12 VAC/DC max	2 VDC min
Current:	10mA AC/DC max	10µA DC min
Insulation Resistance:	100MΩ at 100V(min)	
Initial Contact Resistance:	200mΩ max	
Bounce Time:	≤5msec	
Capacitance:	<2pF (at 1kHz)	
Operating Temperature:	-10°C to +70°C	
Storage Temperature:	-40°C to +70°C	
Flammability Rating:	UL94HB	
Solderability:	Wave solder, 5 seconds at 260±5°C	
Long life :	50,000,000 cycles	
Operating Force:	60±10gf	
Total Travel:	4.00±0.1mm	
Pretravel:	2.20±0.6mm	
Choice of feel:	click tactile	
Ingress Protection Rating:	N0 (无)	

产品结构表 (BOM)

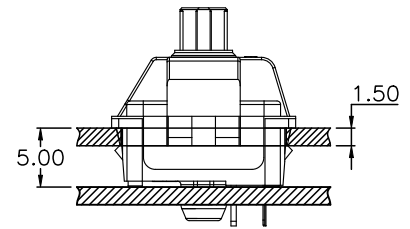
7	Housing	/	1PCS	POM	White	/
6	Spring	/	1PCS	Stainless Steel	/	/
5	Kone	/	1PCS	POM	Cyan-Blue	/
4	Housing	/	1PCS	PA66	White	UL94HB
3	Cover	/	1PCS	PC	Transparent	UL94HB
2	Contacts	/	2PCS	Copper	Plated Gold	/
1	Terminal	/	2PCS	Copper	/	/
序号 ITEM	零件 PART NAME	端子编号 TERNO.	用量 QTY.	材质 MATERIAL	电镀/颜色 FINISHING	备注 REMARK

一般公差	30 < L	±0.80
TOLERANCE	10 < L ≤ 30	±0.50
	5 < L ≤ 10	±0.30
	L ≤ 5	±0.20

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With fixing Pins



Without fixing Pins

组配用铁板角孔尺寸图

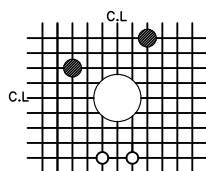
METAL FRAME CUTOUT DIMENSIONS

安装选项

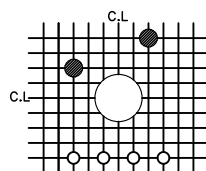
MOUNTING OPTIONS

CIRCUIT BOARD LAYOUTS

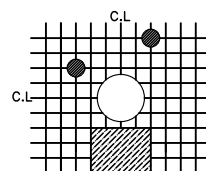
1-Pole



1-Pole w/LED



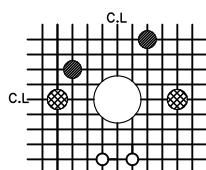
1-Pole w/Diode



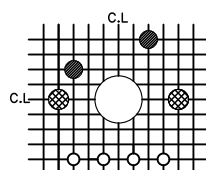
- $\varnothing 4.00 \pm 0.10 \text{mm}$
- $\varnothing 1.50 \pm 0.05 \text{mm}$
- $\varnothing 1.00 \pm 0.10 \text{mm}$
- SQ1.27mm

Keyswitch without Fixation Pins

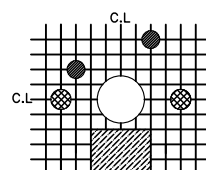
1-Pole



1-Pole w/LED



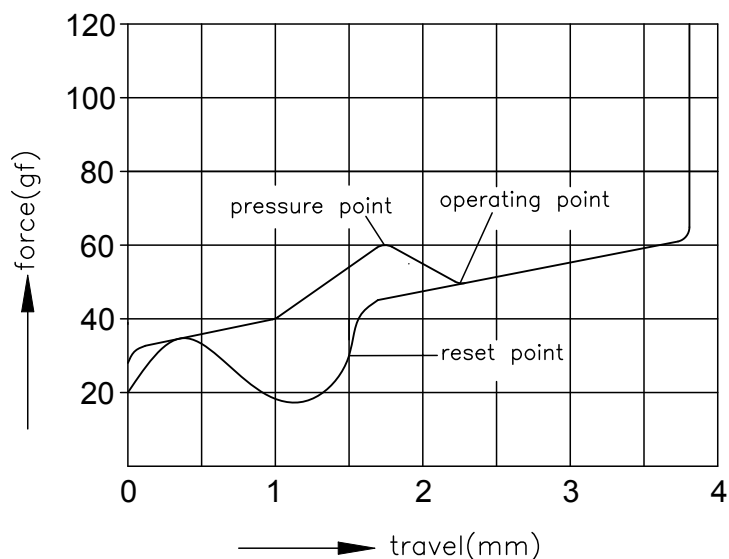
1-Pole w/Diode



- $\varnothing 4.00 \pm 0.10 \text{mm}$
- $\varnothing 1.70 \pm 0.05 \text{mm}$
- $\varnothing 1.50 \pm 0.05 \text{mm}$
- $\varnothing 1.00 \pm 0.10 \text{mm}$
- SQ1.27mm

Keyswitch with Fixation Pins

Force/Travel Diagram



Total Travel/总行程	4.00 ^{+0.1} _{-0.4} mm
Work Travel/导通行程	2.20±0.6mm
Work Force/导通力度	50±10gf
Tactile Force/触觉力度	60±10gf
Tactile Travel/触觉行程	1.80mm
Initial Force/初始力度	30gf Min
End Force/终止力度	65gf Max

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1. General Characteristics 一般特性:

Applicating: This Specification is applied tk rotary Keyswitch switch used for general application.

适用范围: 该承认书适用于按键开关的一般使用范围.

Operating Temperature Range: -10℃ ~ 70℃ Storage Temperature Range:: -40℃ ~70℃

使用温度范围: -10℃ ~ 70℃ 贮藏温度范围: -40℃ ~70℃

1.3 Operating Relative Humidity: 45~85% RH

相对湿度: 45~85% RH

Test Conditions:Unless ktherwise specified,the atmospheric conditions for making measurements and tests are as follows:

实验条件:若没有特别说明,测试大气条件如下:

Environment Temperature: 5 ~ 35℃

环境温度: 5 ~ 35℃

Relative Humidity: 45 ~ 85%

相对湿度: 45 ~ 85%

Atmospheric Pressure: 86 ~ 106Kpa (860 ~ 1060mbar)

大气压力: 86 ~ 106Kpa (860 ~ 1060mbar)

2. Appearance,structure and Dimensions 外观,结构尺寸:

2.1 Appearance The switch shall have good finishing, and no rust,crack or plating defects.

观外: 产品外观良好,无锈蚀,裂纹和镀层缺陷。

2.2 Structure&Dimensions Refer to individual product drawing.

结构及尺寸: 参见产品图纸

2.3 Markings Refer to individual product drawing.

标识: 参见产品图纸。

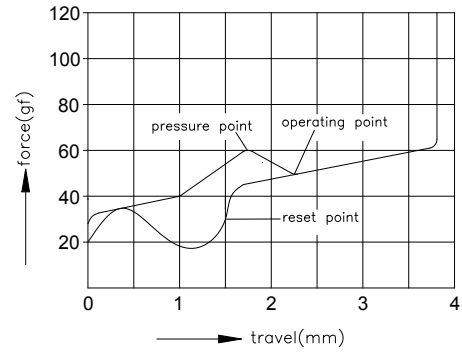
3. Ratings 额定负荷 12VAC/10mA(Max) 2VDC/10uA(Min)

4. Electrical Characteristics 电气特性

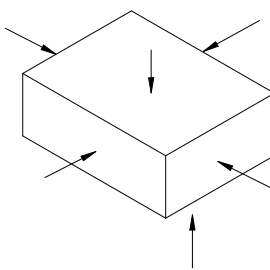
NO.	Item 项目	Criteria 标准	Test Method 实验方法
4.1	Contact Resistance 接触电阻	200mΩ Max	Measured by a voltage drop method at 1mA Max,5VDC.Any equipment with error not more than 5% can be used. Resistance after test in the average of 5 successive measurements(To measure after operated 5 to10 times) 以 1mA, 5V 直流电, 采用电压降法测量。也可用误差不超过 5%的仪表进行测量, 实验后的电阻取 5 次测量的平均值。(按动 5-10 次后测量)
4.2	Insulation Resistance 绝缘电阻	100MΩ Min	100V DC voltage is applied between each pair of terminals between the terminal and the metal frame for 60±5S 在相互绝缘的所有端子之间及各接线端子与外露的非载流金属零件之间加载 100V 直流电, 持续时间 60±5S
4.3	Dielectric Voltage 抗电强度	No dielectric breakdown shall occur 无击穿现象发生。	500VAC(50 ~ 60Hz, cut-off current 2mA)isapplied between non-connected terminals and between terminals and the metal frame for 60±5S 在相互绝缘的所有接线端子之间及各接线端子与外壳或非载流金属零件之间加载 500V (50~60Hz) 交流电, 持续时间 60±5S

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5.Mechanical Characteristics 机械特性

NO.	Item 项目	Criteria 标准	Test Method 实验方法
5.1	操作力-行程 -曲线图 Forco-Travel - Curve	操作力: $60 \pm 10\text{gf}$ Operating Force: $60 \pm 10\text{gf}$ 总行程: $4.00^{+0.1}_{-0.4}\text{mm}$ Total- Travel: $4.00^{+0.1}_{-0.4}\text{mm}$ 启动行程: $2.20 \pm 0.6\text{mm}$ Start- Travel: $2.20 \pm 0.6\text{mm}$	
5.2	Terminal Strength 端子强度	Shall be free from terminal looseness,damage and insulator breakage No functional defectivr occur. 端子无松动, 损坏及绝缘层的破裂。 无功能性不良.	A static load of 3N shall be applied to the tip of terminals for 10s in any direcion 任意方向施加 3N 作用力于接线端末端, 持续时间 10s
5.3	Vibration Proof 振动	After test, Contact resistance: 2Ω max. Insulation resistance: $100\text{M}\Omega$ Min. The electrical performance Specified in item 4.3-4.5 shall be satisfied. No abnormalities shall be recognized in appearance and construction 实验后: 接触电阻: 2Ω max. 绝缘电阻: $100\text{M}\Omega$ Min. 电气性能应符合第 4.3-4.5 条的要求。 表面及结构无明显变形。	Switch shall be secured to a testing machine by a normal mounting device and method. Switch shall be tested according to the following request: (1) Vibration frequency range= $10 \sim 55\text{Hz}$ (2) Total amplitude $=1.5\text{mm}$ (3) Sweep ratio: $10 \sim 55 \sim 10\text{HZ}$ Approx. 1min (4) Method of changing the sweep vibration frequency:linear (5) Direction of vibration:Three perpendicular directions including actuating direction. 开关采用常规的安装方式牢固地安装在试验设备上, 并在下述参数 条件下进行试验: (1) 振频= $10 \sim 55\text{Hz}$ (2) 振幅 1.5mm (3) 振动变化速率: $10 \sim 55 \sim 10\text{HZ}$ 大约 1 分钟 (4) 变频方法: 线性型式 (5) 振动方向: 三个相互垂直的方向, 其中一个方向是促动 无件运动的方向。 (6) 时间: 每个方向 2 小时 (共 6 小时)

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5.4	Mechanical Shock 冲击	After test: Contact resistance: $2\ \Omega$ max. Insulation resistance: $100\text{M}\ \Omega$ Min. The Electrical performance No functional defectivr occur. Shall be bree from mechanical abnormalities. 实验后: 接触电阻: $2\ \Omega$ max. 绝缘电阻: $100\text{M}\ \Omega$ Min. 无功能性不良. 表面无变形且操作无异常。	Switch shall be tested according to the following request: (1) Mounting Method:Normal (2) Acceleration: $490\text{m}/\text{S}^2$ (50G) (3) Duration: 11ms (4) Test Direction:6 directions  (5) Number of shoks:3times per direction (18times in total) 开关在下述参数条件下进行试验: (1) 安装方法: 常规方法 (2) 加速度: $490\text{m}/\text{S}^2$ (50G) (3) 时间: 11ms (4) 实验方向: 图示 6 方向 (5) 每个方向 3 次 (总共 18 次)
5.5	Solder Ability 可焊性	More than 80% of immersed part shall be covered with solder. 超过 85%的浸锡面积被焊料所覆盖.	Switch shall be tesed according to the following request: (1)Equipment: Wave solder (2)Solder:Normal (3)Flux:Rosin Flux having a nominal composition of 25% solids by mass of white rosin in methyl alcohol solution. (4)Soldering Temperature:$260\pm 5^{\circ}\text{C}$ (5)Immersing Time:$5\pm 0.5\text{s}$ (6) Immersion depth: immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm) 开关在下述参数条件下进行试验: (1)设备:波峰焊 (2)焊料:常规 (3)焊剂:焊剂质量百分比为 25%松香,75%的无色透明溶液 (4)焊接温度: $260\pm 5^{\circ}\text{C}$ (5)浸渍时间: $5\pm 0.5\text{s}$ (6) 浸渍深度:接线端应浸到离开关根部 1.6mm 处.

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5.6	Solder Heat Resistance 耐焊接热	NO abnormalities shall be observed in appearance and operation 无外观及功能损坏	Switch shall be tested according to the following request: (1)Solder:Normal (2)Flux:Rosin Flux having a nominal composition of 25% solids by mass of white rosin in methyl alcohol solution. (3)Soldering Temperature & Immersing Time Wave solder: $260 \pm 5^{\circ}\text{C}$ $5 \pm 1\text{s}$ Manual soldering: $300 \pm 10^{\circ}\text{C}$ 2-3s (4)Immersion depth: (For Dip Soldering) immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm) 开关在下述参数条件下进行试验: (1)焊料:常规 (2)焊剂:焊剂质量百分比为 25%松,75% 的无色透明溶液 (3)焊接温度及浸渍时间: 波峰焊: $260 \pm 5^{\circ}\text{C}$ $5 \pm 1\text{s}$ 手工焊接:$300 \pm 10^{\circ}\text{C}$ 2-3s (4)浸渍深度: (对于手动焊接) 接线端应浸到离开关根部 1.6mm 处.
5.7	Resistance to Flux 抗焊剂能力	Flux shall not be risen up tk contact. The switch shall be free from abnormalities in operation. 焊剂不得上升进入开关内部,影响接触转换. 试件在操作过程中不应发生变形.	Switch shall be tested according to the following request: (1)Solder:Normal (2)Flux:Rosin Flux having a nominal composition of 25% solids by mass of white rosin in methyl alcohol solution. (3)Soldering Temperature:$260 \pm 5^{\circ}\text{C}$ Immersing Time:$5 \pm 0.5\text{s}$ Flux immersing time shall be at 5-10s in normal room temperature. (4) Immersion depth: immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm) 开关在下述参数条件下进行试验: (1)焊料:常规 (2)焊剂:焊剂质量百分比为 25%松香,75%的无色透明溶液 (3)焊接温度: $260 \pm 5^{\circ}\text{C}$ 浸渍时间: $5 \pm 0.5\text{s}$ 焊剂浸渍时间:5-10s (4)浸渍深度:接线端应浸到离开关根部 1.6mm 处.

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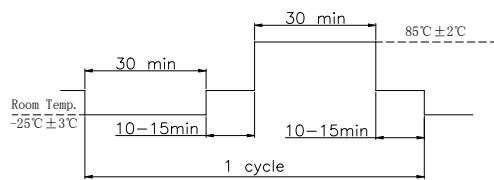
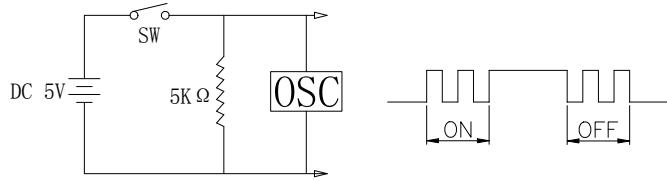
6. Durability characteristics

NO	Ltem 项目	Criteria 标准	Test Method 实验方法
6.1	Mechanical life 机械寿命	After test, Contact resistance: 2Ω max. Insulation resistance: $100M\Omega$ Min. Tolerance of operating force Disintegration shall be within 30% of specified value No functional defrctive occur The switch shall be free from abnormalities in appearance	50,000,000 cycles of operation shall be performed continuously at a rate of 200cycles per minute without load. 在不带负荷的条件下,速度为 200 次/分,在寿命试验设备上连续转换 50,000,000 次。
6.2	Electronics life 电气寿命	Construction. 实验后: 接触电阻: 2Ω max. 绝缘电阻: $100M\Omega$ Min. 操作力衰变应在 $\Sigma \pm 30\%$ 以内 无功能性不良 开关外观及结构应无损坏	50,000,000 cycles of operation shall be performed continuously at a rate of 200 cycles per minute load as follow 10mA 5V DC 在带负荷的条件下,速度为 200 次/分,在寿命试验设备上连续转换 50,000,000 次。 10mA 5V DC

7.Weather Proof Characteristics 耐候性能:

7.1	Cold Proof 低温	After test, Contact resistance: 2Ω max.	After testing at $-25\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在 $-25\pm 2^{\circ}\text{C}$ 的温控箱内保持 96 小时,然后在正常温度和湿度下恢复 1 小时,并在此后 1 小时内对试品进行测量,水滴应消失。
7.2	Hot Proof 高温	Insulation resistance: $100M\Omega$ Min. No functional defrctive occur The switch shall be free from abnormalities in appearance Construction.	After testing at $70\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1 hour after that. 试件在 $70\pm 2^{\circ}\text{C}$ 的温控箱内保持 96 小时,然后在正常温度和湿度下恢复 1 小时,并在此后 1 小时内对试品进行测量,水滴应消失。
7.3	Moisture Resistance 恒定湿热	实验后: 接触电阻: 2Ω max. 绝缘电阻: $100M\Omega$ Min. 无功能性不良 开关外观及结构应无损坏	After testing at $40\pm 2^{\circ}\text{C}$, 90~95% RH for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在 $40\pm 2^{\circ}\text{C}$, 90~95%RH 的温控箱内保持 96 小时,然后在正常温度和湿度下恢复 1 小时,并在此后 1 小时内对试品进行测量,水滴应消失。

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7.4	Temperature Cycling 温度转换	After test, Contact resistance: 2Ω max. Insulation resistance: $100M\Omega$ Min. No functional defrective occur The switch shall be free from abnormalities in appearance Construction. 实验后: 接触电阻: 2Ω max. 绝缘电阻: $100M\Omega$ Min. 无功能性不良 开关外观及结构应无损坏	After 5 cycles of following conditions the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour,and measurement shall be made within 1hour after that.Water drops shall be eliminated. 试件按下述实验条件试验 5 次,然后在正常温度和湿度下恢复 1 小时,并在此后 1 小时内对试品进行测量,水滴应消失 
7.5	Salt Mist 盐雾实验	No remarkable corrosion shall be recognized in metal part 在金属件上没有腐蚀斑点。	The switch shall be checked after the following test: (1) Temperature: $35\pm 2^{\circ}\text{C}$ (2) Salt Solution: $5\pm 1\%$(Solids by mass), immersing time: 5minute. (3) After immersing, salt deposit shall be removed by runnig water. (4) Duration: 16 ± 1hours 试件在下述实验后测量: (1) 温度 $35\pm 2^{\circ}\text{C}$ (2) 盐溶液浓度: $5\pm 1\%$(质量百分比), 浸泡 5 分钟。 (3) 浸泡后的盐沉积物用水冲掉。 (4) 时间 16 ± 1 小时
7.6	Bounce 触点抖动	ON: 5ms Max OFF: 5ms Max	

Remarks:

This switch model is not designed with dustproof or waterproof structures; please use it with caution according to the application environment.