

Product Specification

Number: L-KLS7-KL

Name: DIP switches

Customer:

Date: 2025-10-10



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1. 产品命名 PRODUCT NAMING: <i>Order Information:</i> L-KLS7- L: RoHS KL Type Dip Switch No.of 01~12Pin Color:N-Black 0:Non-sealed 1=with sealed Packaging:0=Tube 1=Tape KL- XX- N- 00				
2. 开关种类 jack action : KL系列拨码开关 (SMT SWITCH KL SERIES)				
3. 基本参数 General specification				
3.1 材料 Materials				
上盖: 工程塑料, 黑色 COVER:Engineering Plastics, Black				
底座: 工程塑料, 黑色 BASE: Engineering Plastics, Black				
拨键: 工程塑料, 白色 KEY: Engineering Plastics, White				
端子: 铜合金, 镀金 TMRMINAL:Alloy Coper,Plating Gold				
3.2 额定值 RATING: 开关常切换 (Contact rating) 25mA 25VDC				
开关不常切换 (Non-Contact rating) 100mA 50VDC				
3.3 使用温度试验范围 Operation temperature range : - 20~ + 70℃				
保存温度范围 Preservative temperature range : - 40~ + 85℃				
3.4 外形及尺寸 Appearance and dimensions : 见外形尺寸图 See outside drawing page				
3.5 试验、测定状态 , 在没有指定的情况下测试温度、湿度、气压如下:				
Unless otherwise specifide.the standard range of atmospheric conditions for making measurements and tests are as follows				
温度 Ambient temperature : 5 ~ 35℃				
相对湿度 Relative humidity : 45 ~ 85%				
气 压 Air pressure : 86 ~ 106kPa (860~1060mbar)				
但是在对判定产生疑义时, 按下述状态实施				
However, if doubt arises on the decision based on the measured Values under the above-mentioned conditions, the followingconditions shall be employed:				
温度 Ambient temperature : 20±2℃				
相对湿度 Relative humidity : 65±5%				
气 压 Air pressure : 86 ~ 106kPa (860~1060mbar)				

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4. 电气特性 ELECTRICAL SPECIFICATIONS

ITEM 项 目	TEST DESCRIPTION 测试描述	TEST CONDITIONS 测试条件	Standards 判定基准
4.1	Contact Resistance (initial) 接触电阻（初始值）	To be measure with AC 1KHz±200Hz (Max 20mv, Max 50mA) or 10mA, 5V DC 1千赫兹±200Hz (在最大电压200mv, 最大电流50mA) 或10mA, 5v直流测试	Max 50mΩ 最大50毫欧
	Contact Resistance (after life test) 接触电阻（测试后）		Max 100mΩ 最大100毫欧
4.2	Insulation Resistance 绝缘电阻	To be measure with an insulation measuning device of 500VDC between all the teminals and the frame for 1 minute ±5seconds. 在排脚相互之间或排脚与外壳之间输入500V直流电压1分钟±5秒	Min 1000MΩ 1000MΩ以上
4.3	Dielectric strength 耐压强度	AC500V (50-60HZ, 1mA current) being applied between all the adjacent terminals and between the terminal and frame for 1 minute 在接触端子或排脚之间输入500VAC (50-60赫兹) 电压1分钟, 感应电流为1mA	NO breakdown insulation 没有绝缘破损异常
4.4	Capacitance between adjacent switches 极际电容	To be measured with frequency 1MHz±10KHz, applied between adjacent terminal and circuit 频率为1MHz±10KHz 适用于相邻排脚和电路	Max 5PF 最大5PF

5. 机械特性 MECHANICAL

ITEM 项 目	TEST DESCRIPTION 测试描述	TEST CONDITIONS 测试条件	Standards 判定基准
5.1	Operation force 操作力	Applied in the direction of operation 在同一方向	Max 8N 最大为8N (可正常推动)
5.2	Terminal strength 端子强度	A static load of 500gf shall be applied To the terminal for 1 minute, in any direction 在排脚前端任意一个方向加 500gf 力度测试, 时间为1分钟.	Electrical characteristics shall be satisfied without damage or excessive looseness of terminals. 在排脚中没有裂开, 松动等异常, 满足于机械、电器性能.

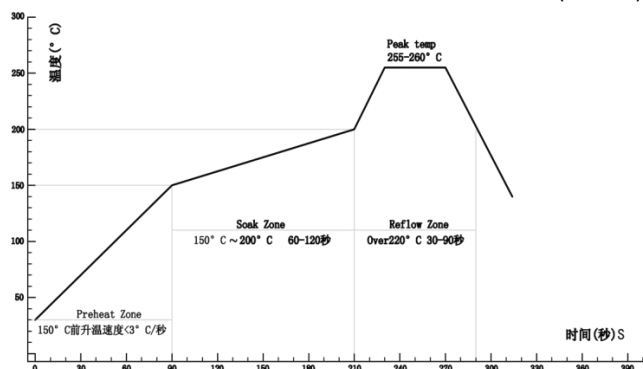
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ITEM 项 目	TEST DESCRIPTION 测试描述	TEST CONDITIONS 测试条件	Standards 判定基准
5.3	Operation life with No load 无负载下的运动寿命	2000 cycle operation at a rate of 15~20 cycle/minute 15-20回/分钟 寿命最少为2000次	Contact resistance Max 100mΩ Insulation resistance min 1000mΩ with DC 250V Dielectric breakdown voltage: 250V 1 minute no breakdown insulation Operating force±30%gf before test No.4.1 shall Be satisfied
	Operation life with load 负载下的运动寿命	24V 25mA 1000 cycle operation at a rate of 15~20 cycle/minute 在DC24V 25mA条件下, 以15-20回/分钟, 寿命最小1000次	There shall be no defects in appearance or in the mechanical functions 接触电阻 Max 100mΩ 绝缘电阻 min 1000mΩ.min.at 500VDC 动作力的变化范围在初始值的±30%以内, 满足 4.1项 无论是在外观上还是在机械功能上, 都不得有任何缺陷
5.4	Solderbility 可焊性	After sprated flux temperature :230± 5℃ soldering time :2±0.5 sec 涂上助焊剂后, 温度: 230± 5℃, 焊接时间: 2±0.5 秒	95% or more of surface area of the portion immersed in solder shall be covered by new solder 95% 或更多的浸焊面积能被焊锡覆盖.
5.5	Soldering heat test 耐焊接热	Soldering temperature : 260± 5℃ soldering time : 5 ±1 sec. 焊接温度: 260± 5℃ 焊接时间: 5 ±1 秒	WITHOUT DEFORMATION OF CASE OR EXCESSIVE LOOSENESS OF TEMINALS ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED. 本体无变形, 能满足于机械、电器性能
5.6	Vibration test 耐振性	Amplitude: 1.5 mm Sweep rate: 10-55-10HZ for 1 minute Sweep method: Logarithmic frequency sweeprate Vibration direction : X, Y, Z(3 directions) Time : Each direction 2 hours (Total 6hours) 全振幅: 1.5 mm 时间: 每个方向2 个小时(共6 个小时) 扫描速度: 10-55-10HZ 1 分钟 扫描方式: 对数频率扫描速度 振动方向: X, Y, Z (3 方向)	No damage (electrical andmechanical) 无异常。(电气、机械特性)

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6. 焊接和清洗 SOLDERING AND CLEANING PROCESSES

1. 在所有操作过程中，请确保开关在OFF位置
2. 波焊：（DIP）型推荐焊接焊锡温度为260℃（500°F），最多5秒
3. 手焊：使用30W烙铁控制温度在350℃，焊接时长约5秒
4. 回炉焊：（SMT）型回焊炉最高温度为260℃，温度为260℃时，最长时间不超过10秒（如图）



5. 清洗过程：清洗使用超音波方式，能给予更好效果
使用蒸气方式时，温度不可超过51℃（125°F）

1. Keep all switch contacts in their "OFF" position for all operations
2. Wave soldering: recommended solder temperature at 260°C (500°F) max. 5 seconds
3. Hand soldering: use a soldering iron of 30 watts controlled at 350°C approximately 5 seconds. while applying solder
4. Reflow soldering profile: (reference)
5. Cleaning process: flux clean using force rinse, high agitation or triple bath cleaning method. freon TF or TE give excellent results, when vapor methods are used do not subject the switch to solvents at temperature above 51°C

7. 包装资料 PACKING

所有拨码开关产品均以IC管形式包装。

All code switches are shipped in standard IC tube

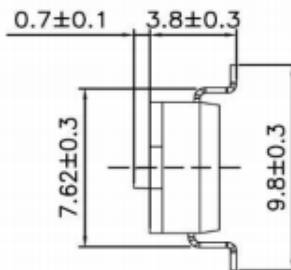
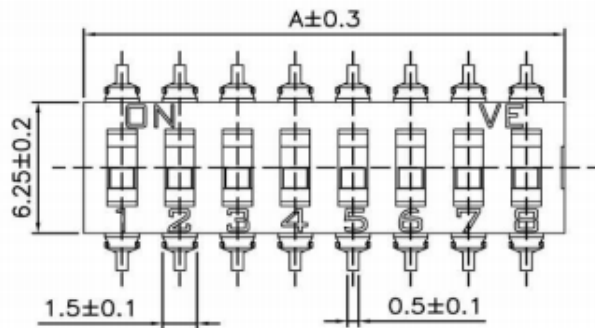
系列 SERIES	开关位数 NO. of POS	每管数量 PER TUBE	每小箱数量 PER BOX	外箱包装 PER CTN
KL	1	140	14000	2 BOXES 53X27.5X14CM
	2	79	7900	
	3	56	5600	
	4	43	4300	
	5	35	3500	
	6	29	2900	
	7	25	2500	
	8	22	2200	
	9	20	2000	6 BOXES 53X40X27CM
	10	18	1800	
	12	15	1500	

贴片型可采用盘带包装，每卷为1000只

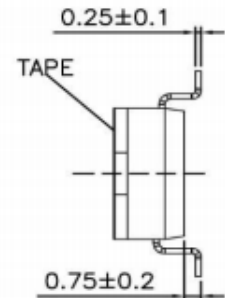
SMT type can be shipped in tape & reel packing, the quantity is 1000 pcs/reel

DIMENSION A

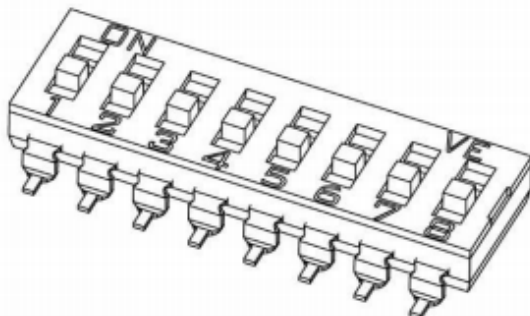
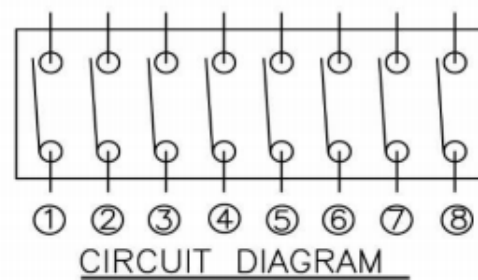
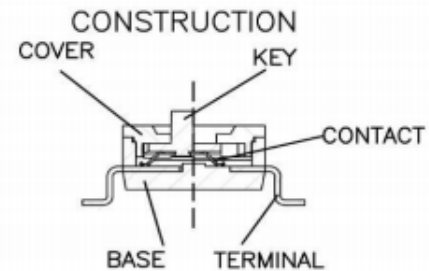
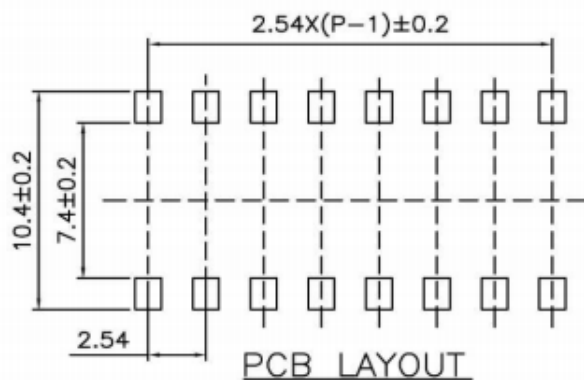
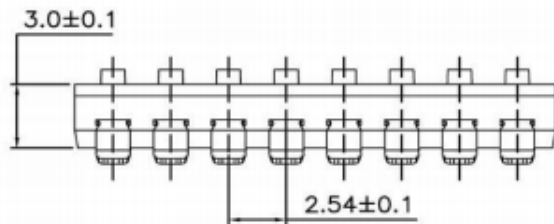
POSITIONS	1	2	3	4	5	6	7	8	9	10	12
DIMA(MM)	3.5	5.95	8.50	11.0	13.55	16.1	18.63	21.2	23.7	26.25	31.3



(H)HIGH KEY



(L)LOW KEY



NOTES:

1.Materials

Cover: engineering plastics, black

Base: engineering plastics, black

Key: engineering plastics, white

Terminal: alloy copper, plating gold or Tin

Contact: alloy copper, plating gold or Tin

Tape : kapton

2.Technical parameters

1>Operation force: 8N Max

2>Mechanical life: 2000 operations

3>Operating temperature: -25° to +70°

Storage temperature: -40° to +85°

4>Contact resistance(initial):≤50mΩ

Contact resistance(after life test):≤100mΩ

5>Resistance to soldering heat:

260±5° for 5±1seconds