

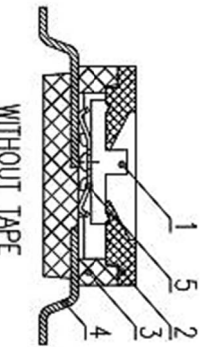
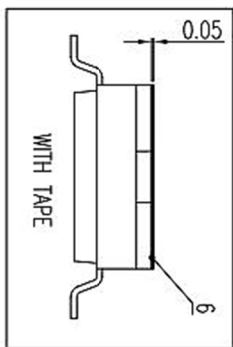
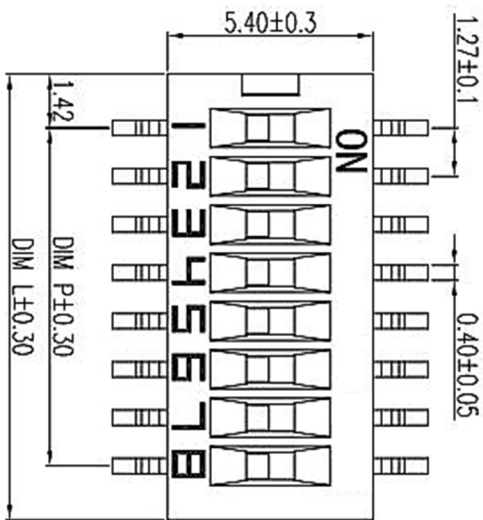
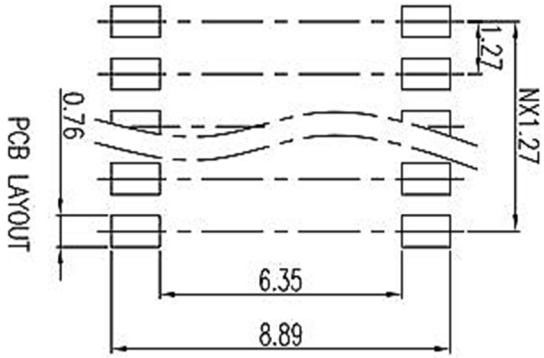
# DATA SHEET

**SUNGMUN CODE :** \_\_\_\_\_ **SHK SERIES**  
**DESCRIPTION :** \_\_\_\_\_ **DIP SWITCH**

## **SUNGMUN ELECTRONICS CO., LTD.**

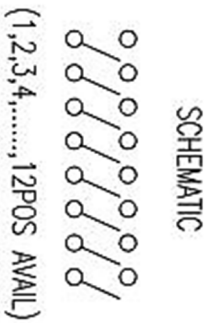
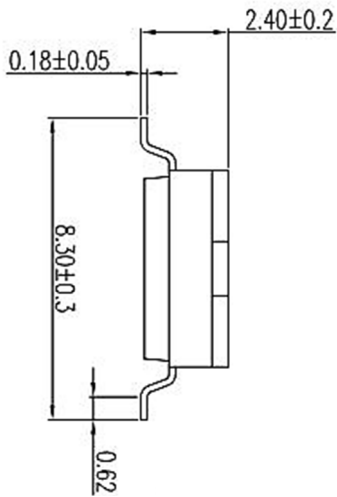
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MRRK	DATE	REVISION	SIGN
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**SOLDERING INFORMATION:**  
 Reflow Soldering: 260°C (Peak Temperature), 240°C~260°C, 20S max  
 Manual Soldering: 30W iron, 320±5°C, 3S max  
 Keep in "off" position during soldering

6	Tape(T=0.05)	XXXX	1	Polyimide	Selectable
5	Spring	XXXX	P	Copper Alloy	Gold Plated
4	Pin	XXXX	2P	Copper Alloy	Gold Plated
3	Base	XXXX	1	Thermoplastic	UL94V-0
2	Cover	XXXX	1	Thermoplastic	UL94V-0
1	Actuator	XXXX	P	Thermoplastic	UL94V-0
ITEM	NAME OF PART	NO. OF PART	Q'TY	MATERIAL	NOTE



POLE	Dim P	Dim L
2P	1.27	4.11
3P	2.54	5.38
4P	3.81	6.65
5P	5.08	7.92
6P	6.35	9.19
7P	7.62	10.46
8P	8.89	11.73
9P	10.16	13.00
10P	11.43	14.27
11P	12.70	15.54
12P	13.97	16.81

01	-		-		1	-	
NO.	DESCRIPTION	MATERIAL	COLOR / FINISH		QTY	VENDOR	
			X	Y			
DRAW/ DESIGNED	CHECKED	APPROVED	TITLE		DIP SWITCH		
			VS.KIM	J.P ROH	K.I LEE		
			UNIT	SCALE	MODEL	SHK-XX Series	
			mm	10:1			
2021-07-22			SIZE		DRAW NO.	SHK-00-K-01	
SUNGUN ELECTRONICS CO., LTD			A4				

### 1. Description:

This specification describes "DIP SWITCHES", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristics.

1-1 Operating Temperature Range : -40°C ~ +85°C (normal humidity, normal press)

1-2 Storage Temperature Range : -40°C ~ +85°C

### 2. Rating:

2-1 Non-Switching : 100mA, DC 50V


2-1 Switching : 25mA, DC 24V

### 3. Type of Actuation : Actuated by sliding

### 4. Electrical Characteristics

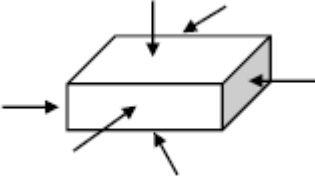
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
4-1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
4-2	Contact Resistance	① To be measured between the two terminals associated with each switch pole. ② Measurements shall be made with a 1kHz shall current contact resistance meter.	100mΩ max. (initial)
4-3	Insulation Resistance	500V DC, 1minute ±5seconds	100 MΩ min.
4-4	Dielectric withstanding Voltage	300V AC(50Hz or 60Hz)shall be applied between all the adjacent terminal and between the terminal and the frame for 1 minute.	There shall be no breakdown or flashover.

### 5. Mechanical Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
5-1	Operation Force	Applied in the direction of operation. ON(OFF OFF(ON 	500 gf max.
5-2	Stop Strength	0.8kgf is applied in the operating direction and pulling direction operated for a period of 15 seconds.	There shall be no sign of damage mechanically.
5-3	Soldering Heat Resistance	1. Duration of Solder Immersion: 5±1seconds. 2. Frequency of Solder Process: 1 time max. (PCB is 1.6mm in thickness.)	1)As shown in item 4-3, 4-4, 5-1, 5-2 2)Contact Resistance: 200mΩ max (final-after test)
5-4	Operation Life	Measurements shall be made following the test set forth below: 1) 25mA, 24V DC resistive load 2) Rate of operation: 15~20 cycles/ min 3) Cycle of operation: 1,000 cycles	1)As shown in item 4-3, 4-4, 5-1, 5-2 2)Contact Resistance: 1Ω max (final-after test)

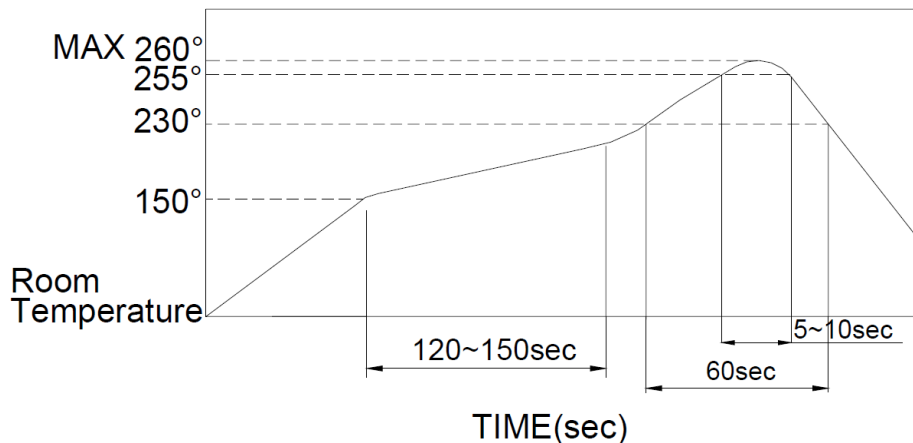
### 6. Environmental Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-1	Moisture Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements. Are made : 1) Temperature : 40±2°C 2) Relative humidity : 90 to 95% 3) Time : 96 hours Water drops shall be removed.	1)As shown in item 4-4, 5-1, 5-2 2)Contact resistance : 200mΩ Max. 3)Insulation resistance : 10MΩ Min.

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-2	Resistance Low Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: <math>-40^{\circ}\text{C} \pm 3^{\circ}\text{C}</math>            2)Time: 96 hours            Water drops shall be removed.</p>	<p>1)As shown in item            4-3, 4-4, 5-1, 5-2            2)Contact resistance:            200m<math>\Omega</math> Max.            (final-after test)</p>
6-3	Resistance High Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: <math>85^{\circ}\text{C} \pm 2^{\circ}\text{C}</math>            2)Time: 96 hours</p>	<p>1)As shown in item            4-3, 4-4, 5-1, 5-2            2)Contact resistance:            200m<math>\Omega</math> Max.            (final-after test)</p>
6-4	Impact Shock Resistance	<p>Measurements shall be made following the test set forth below :</p> <p>1) Acceleration : 50G            2) Action Time : <math>11 \pm 1</math> m seconds            3) Testing Direction : 6 sides            4) Test cycle : 3 times in each direction</p> 	<p>As shown in item            4-2, 4-3, 4-4, 5-1, 5-2</p>
6-5	Vibration Resistance	<p>Measurements shall be made following the test set forth below :</p> <p>1) Frequency : 10-55-10 Hz 1min/cycle.            2) Direction : 3 vertical directions including the direction of operation.            3) Test Time : 2 hours each direction.</p>	<p>As shown in item            4-2, 4-3, 4-4, 5-1, 5-2</p>

7. This item is "RoHS" Compliant

### 8. Soldering Conditions



8-1 The condition mentioned above is the temperature on the Cu foil of the P.C.B surface.

There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc.

Care, therefore, should be used not to allow switch's surface temperature to exceed 260°C.

8-2 Manual Soldering : 350°C max, 5 sec max.

8-3 Precautions in Handling :

- 1) Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
- 2) Don't clean the switch body except with top tape sealed type, which can only spray of cleaning method from top of s/w.