

## - 规格书 -

产品型号: SKAC-16S

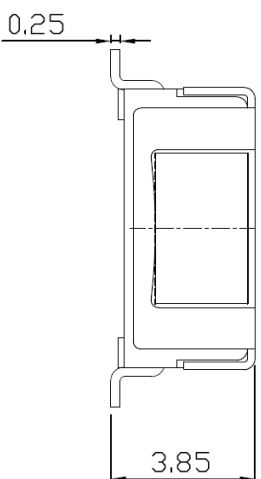
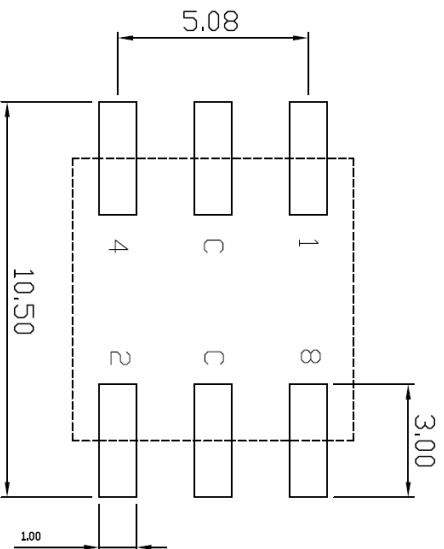
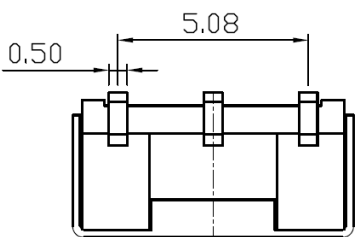
产品名称: 旋转编码开关

**SM SWITCH CO.,LTD**

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Technical drawing of a square mechanical component. The drawing includes the following dimensions and features:

- Overall Dimensions:** The component is square with a side length of 9.50.
- Internal Dimensions:** The central square area has a side length of 7.40.
- Top Edge Features:** A horizontal dimension of 5.08 is shown between the centerlines of two small rectangular features (labeled 1 and 4) located near the top edge.
- Central Feature:** A circular feature with a central arrow pointing to the right. The arrow is labeled with the number 1.
- Peripheral Features:** Eight small rectangular features are arranged around the central circle, labeled with numbers 2 through 8. Features 1, 4, 7, and 8 are located on the top and bottom edges, while features 2, 3, 5, and 6 are located on the bottom and top edges respectively.
- Other Features:** A small circular hole is located on the right side of the component, and a small rectangular feature is located on the left side.



### P.C.B DIMENSION

SM SWITCH CO., LTD.

# MINI ROTARY DIP SWITCH SPECIFICATION

Rev. 7  
P:1/4

## 1. Style:

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

1.1 Operating / Storage Temperature Range :  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

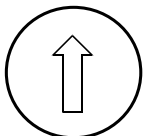
## 2. Current Range:

2.1 None-Switching : 400 mA, 42V

2.2 Switching : 150 mA, 42V

## 3. Type of Actuation : Rotating

## 4. Test Sequence :

| E<br>L<br>E<br>C<br>T<br>R<br>I<br>C<br><br>P<br>E<br>R<br>F<br>O<br>R<br>M<br>A<br>N<br>C<br>E | ITEM | DESCRIPTION                      | TEST CONDITIONS                                                                                                                                                | REQUIREMENTS                                                            |
|-------------------------------------------------------------------------------------------------|------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                                                                 | 1    | Visual Examination               | By visual examination check without any out pressure & testing.                                                                                                | There shall be no defects that affect the serviceability of the product |
|                                                                                                 | 2    | Contact Resistance               | ① To be measured between the two terminals associated with each switch pole<br>② Measurements shall be made with a 1kHz shall current contact resistance meter | 80mΩ max.(initial)                                                      |
|                                                                                                 | 3    | Insulation Resistance            | 250V DC, 1minute $\pm 5$ seconds                                                                                                                               | 100MΩ min                                                               |
|                                                                                                 | 4    | Dielectric withstanding Volotage | 250V 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    | Operation Force                  | Applied in the direction of operation<br>                                   | 120gf $\pm 30$ gf                                                       |

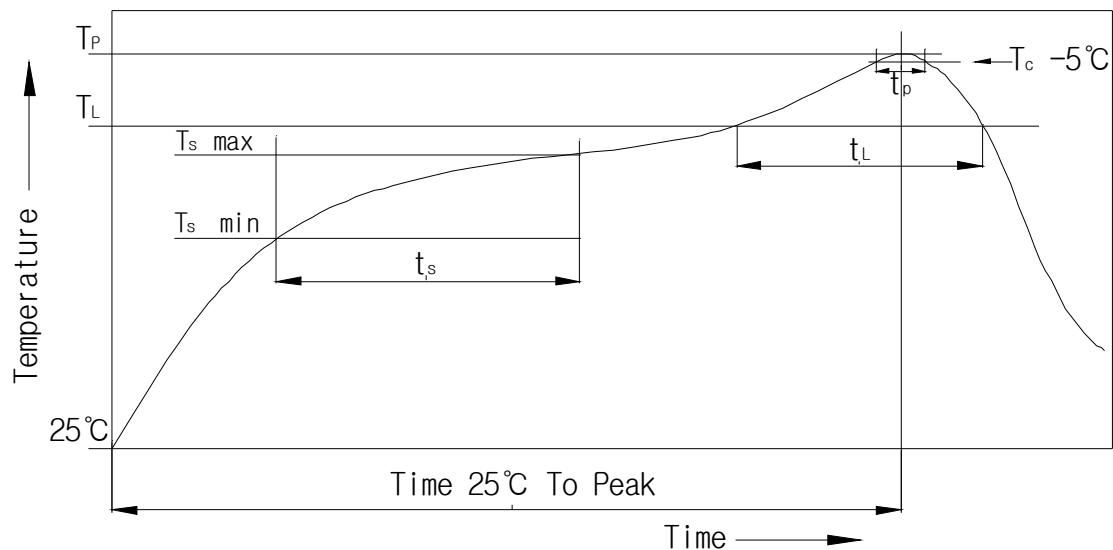


# MINI ROTARY DIP SWITCH SPECIFICATION

Rev. 7  
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|                                                                                       |   |                                   |                                                                                                                                                                                                                                  |                                                                                                    |
|---------------------------------------------------------------------------------------|---|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| M<br>A<br>C<br>H<br>I<br>N<br><br>P<br>E<br>R<br>F<br>O<br>R<br>M<br>A<br>N<br>C<br>E | 6 | Operation<br>Life                 | Measurements shall be made following the test set forth below:<br>1)100mA, 42V DC resistive load<br>2)Rate of operation: 15~20 cycles/ minute<br>3)Step of operation: 25,000 steps                                               | 1)As shown in item 3,4<br>2)Contact Resistance:<br>200mΩ max<br>3)Final-after test                 |
|                                                                                       | 7 | Resistance<br>Low<br>Temperature  | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:<br>1)Temperature: -60℃ ±3℃<br>2)Time: 96 hours                               | As shown in item 2~5                                                                               |
|                                                                                       | 8 | Resistance<br>High<br>Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:<br>1)Temperature: 125℃ ±2℃<br>2)Time: 96 hours                               | 1)As shown in item 3~5<br>2)Contact Resistance:<br>200mΩ max                                       |
|                                                                                       | 9 | Resistance<br>Humidity            | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:<br>1)Temperature: 40℃ ±2℃<br>2)Relative humidity: 90~95%<br>3)Time: 96 hours | 1)As shown in item 4<br>2)Contact Resistance:<br>200mΩ max<br>3)Insulation Resistance:<br>10MΩ min |

## 5. Reflow Soldering Conditions:



### 1) Classification Reflow Profiles

| Profile Feature                                                                                                                                                  | Pb-Free Assembly                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Average Ramp-UP Rate(Ts max to TP)                                                                                                                               | 3°C/second max                  |
| <b>Preheat</b> <ul style="list-style-type: none"> <li>- Temperature Min(Ts min)</li> <li>- Temperature Max(Ts max)</li> <li>- Time (ts min to ts max)</li> </ul> | 150°C<br>200°C<br>60-180seconds |
| <b>Time maintained above:</b> <ul style="list-style-type: none"> <li>- Temperature (TL)</li> <li>- Time (tL)</li> </ul>                                          | 217°C<br>60-150seconds          |
| Peak/Classification Temperature(TP)                                                                                                                              | 260°C +0°C/ -5°C                |
| Time within 5°C of actual Peak Temperature(TP)                                                                                                                   | min 30 seconds                  |
| <b>Ramp-Down Rate</b>                                                                                                                                            | 6°C/sec max                     |
| <b>Time 25°C to Peak Temperature</b>                                                                                                                             | <b>8 minutes max</b>            |

## 6. This item is "ROHS" Compliant

## 7. Part List

| NO | Part Name    | Q'ty | Materials       | Treatment     | Remark                                    |
|----|--------------|------|-----------------|---------------|-------------------------------------------|
| 1  | Cover        | 1    | Stainless Steel |               | Print                                     |
| 2  | Spring Plate | 1    | Stainless Steel |               |                                           |
| 3  | Guide Plate  | 1    | Stainless Steel |               |                                           |
| 4  | Contact      | 1    | Phosphor Bronze | Plating: Gold | Au 0.03 $\mu$ m Min<br>Ni 0.1 $\mu$ m Min |
| 5  | Terminal     | 1    | Phosphor Bronze | Plating: Gold | Au 0.03 $\mu$ m Min<br>Ni 0.3 $\mu$ m Min |
| 6  | Rotor        | 1    | LCP             |               |                                           |
| 7  | Base         | 1    | LCP             |               |                                           |
| 8  | O-Ring       | 1    | Silicone        |               |                                           |