

## - 规格书 -

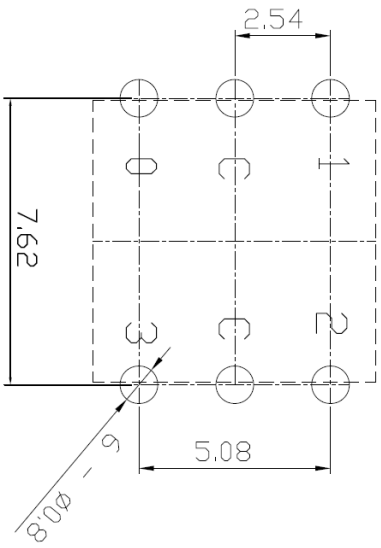
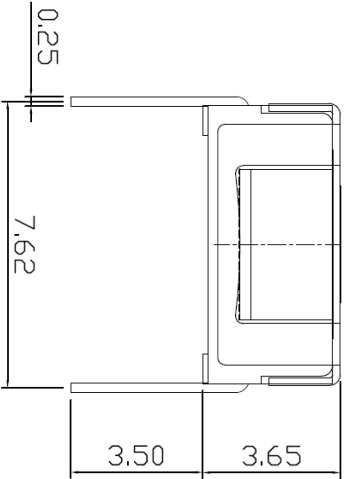
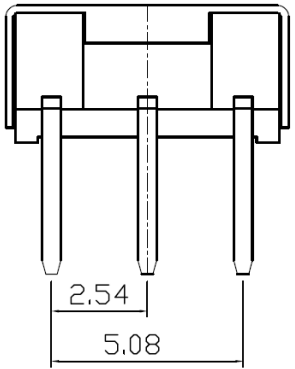
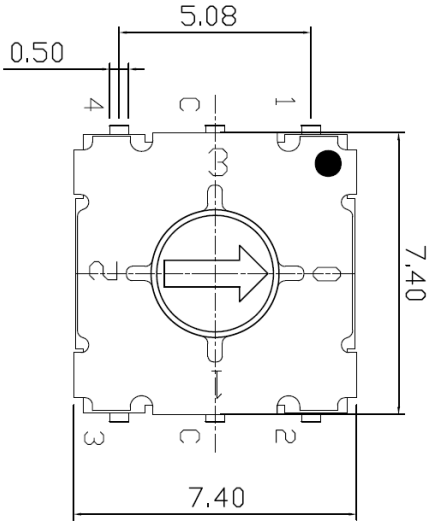
产品型号: SKAL-04

产品名称: 旋转编码开关

# SM SWITCH CO.,LTD

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| MRK | DATE | REMARKS |
|-----|------|---------|
| Δ   |      |         |
| Δ   |      |         |



P.C.B. DIMENSION

| " L " Code |   |   |   |   |
|------------|---|---|---|---|
|            | 0 | 1 | 2 | 3 |
| 04         | ● |   |   |   |
| P          |   | ● |   |   |
| S          |   |   | ● |   |
| I          |   |   |   | ● |
| T          |   |   |   |   |
| T          |   |   |   |   |
| I          |   |   |   |   |
| O          |   |   |   |   |
| N          |   |   |   |   |

|                     |             |         |            |                   |        |         |
|---------------------|-------------|---------|------------|-------------------|--------|---------|
| NO.                 | DESCRIPTION | Q'TY    | MAT'L      | SPEC'             | FINISH | REMARKS |
| 3ANG                | UNIT M/M    | SCL.    | MODEL NAME | ROTARY DIP SWITCH |        |         |
| APPD.               | CHKD.       | D'SGD   | TITLE      | SKAL-04           |        |         |
| YD WANG             | J.S KIM     | H.S LEE | DRAWG.     | Sheet 1 / 2       | REV    | 7       |
| SM SWITCH CO., LTD. |             |         |            |                   |        |         |



# MINI ROTARY DIP SWITCH SPECIFICATION

Rev. 7  
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**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°C ~ +85°C

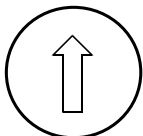
**2. Current Range:**

2.1 None-Switching : 400 mA, 42V

2.2 Switching : 150 mA, 42V

3. Type of Actuation : Rotating

4. Test Sequence :

| ELECTRICAL PERFORMANCE | 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 ±5seconds   | 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 ±30gf  |   |



# MINI ROTARY DIP SWITCH SPECIFICATION

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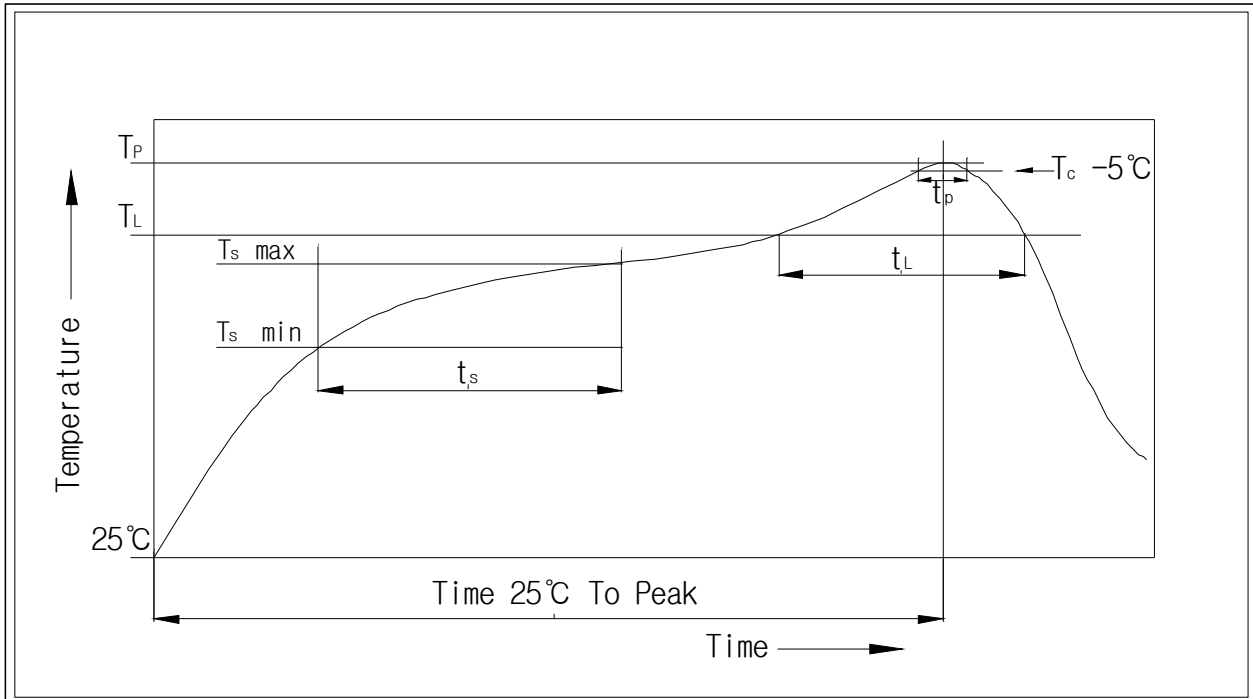
|   |   |                                   |   |   |
|---|---|-----------------------------------|---|---|
| M<br>A<br>C<br>H<br>I<br>N<br><br>P<br>E<br>R<br>F<br>O<br>R<br>M<br>A<br>N<br>C<br>E | 6 | Operation<br>Life                 | <p>Measurements shall be made following the test set forth below: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



# MINI ROTARY DIP SWITCH SPECIFICATION

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## 5. Reflow Soldering Conditions:



### 1) Classification Reflow Profiles

| Profile Feature  | Pb-Free Assembly                |
|--|---------------------------------|
| Average Ramp-UP Rate( $T_s \text{ max}$ to $T_P$ )   | 3°C/second max                  |
| <b>Preheat</b> <ul style="list-style-type: none"> <li>- Temperature Min(<math>T_s \text{ min}</math>)</li> <li>- Temperature Max(<math>T_s \text{ max}</math>)</li> <li>- Time (<math>t_s \text{ min}</math> to <math>t_s \text{ max}</math>)</li> </ul> | 150°C<br>200°C<br>60-180seconds |
| Time maintained above: <ul style="list-style-type: none"> <li>- Temperature (<math>T_L</math>)</li> <li>- Time (<math>t_L</math>)</li> </ul>   | 217°C<br>60-150seconds          |
| Peak/Classification Temperature( $T_P$ )   | 260°C +0°C/ -5°C                |
| Time within 5°C of actual Peak Temperature( $T_P$ )  | min 30 seconds                  |
| <b>Ramp-Down Rate</b>  | <b>6°C/sec max</b>              |
| <b>Time 25°C to Peak Temperature</b>   | <b>8 minutes max</b>            |

6. This item is "ROHS" Compliant



# MINI ROTARY DIP SWITCH SPECIFICATION

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## 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        |               |   |