

# DATA SHEET

SUNGMUN CODE : MSDR-04H  
DESCRIPTION : MINI ROTARY DIP SWITCH

## SUNGMUN ELECTRONICS CO., LTD.

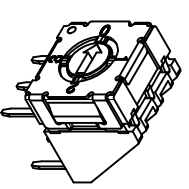
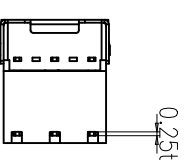
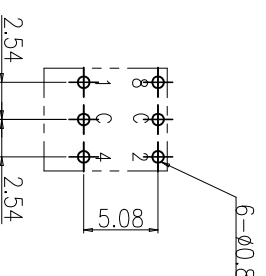
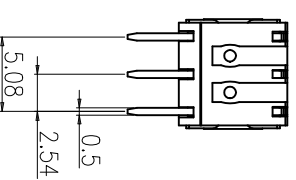
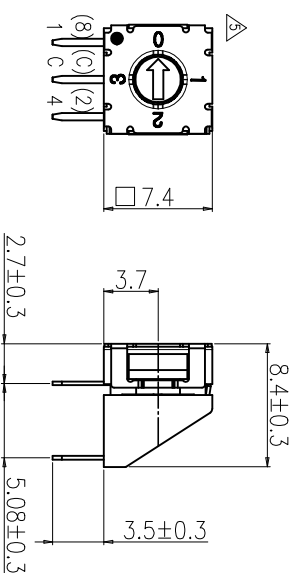
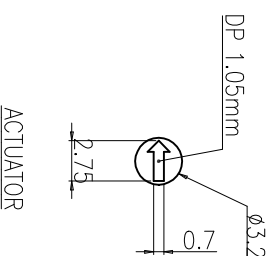
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| REV. NO. | DATE     | REVISION   | DR       | CH      | APP     |
|----------|----------|--|----------|---------|---------|
| △        | 23.10.13 | DIN ISO-2768-1m tolerance applied  | K.N KIM  | W.J LEE | K.I LEE |
| △        | 25.11.07 | Cover Upgrade<br>Changing Operating Force 120±30gf · cm → 250gf · cm Max | M.W SHIN | K.N KIM | W.J LEE |

## SPECIFICATION

1. Rating : 100mA, DC 42V (Switching)  
400mA, DC 42V (None-Switching)
2. Contact Resistance : 80mΩ Max
3. Insulation Resistance : 100MΩ Min
4. Operating Force : Max 250gf · cm △
5. Life cycle : 25,000 steps
6. Sealing : IP67 (Dust & Water proof)
7. Packing : 65pcs Tube



| Real Coded |   |   |   |
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| DRAW/DESIGNED              | CHECKED    | APPROVED   | UNIT  | G.TOL  | TITLE                  |
|----------------------------|------------|------------|---|--------|------------------------|
| K.N KIM                    | W.J LEE    | K.I LEE    | mm <td>±0.3△</td> <td>MINI ROTARY DIP SWITCH</td> | ±0.3△  | MINI ROTARY DIP SWITCH |
| 2022-06-02                 | 2022-06-02 | 2022-06-02 | N:S   |        | MSDR-04H               |
| SUNGUM ELECTRONICS CO.,LTD |            |            | SCALE   | SIZE   | MODEL NO.              |
|                            |            |            | A4  |        | MSDR-04H-05            |
| DIN ISO-2768-1m            |            |            |   |        | REV.                   |
| Ranges                     | 0.5-3      | 3-6        | 6-30  | 30-120 | 120-400                |
| Tolerance                  | ±0.1       | ±0.1       | ±0.2  | ±0.3   | ±0.5                   |

## 1. Style:

This specification describes "7.4X7.4 size of Mini Rotary Dip Switch" which is M series.

1.1 Operating / Storage Temperature Range : -60°C ~ +125°C

## 2. Rating:

2.1 None-Switching : 400 mA, DC 42V

2.2 Switching : 100 mA, DC 42V

3. Type of Actuation : Rotating

## 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.<br>② Measurements shall be made with a 1kHz shall current contact resistance meter. | 80mΩ max. (initial)  |
| 4-3  | Insulation Resistance           | 250V DC  | 100 MΩ min.  |
| 4-4  | Dielectric withstanding Voltage | 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. Mechanical Characteristics**

| ITEM | DESCRIPTION     | TEST CONDITIONS  | REQUIREMENTS   |
|------|-----------------|--|--|
| 5-1  | Operation Force | Operating direction shall be clockwise or counter clockwise direction  | 250gf·cm max   |
| 5-2  | Operation Life  | Measurements shall be made following the test set forth below:<br>1)Rate of operation: 15~20 cycles/ minute<br>2)Step of operation: 25,000 steps | 1)As shown in item 4-3,4-4<br>2)Contact Resistance:<br>200mΩ max<br>3)Final-after test |

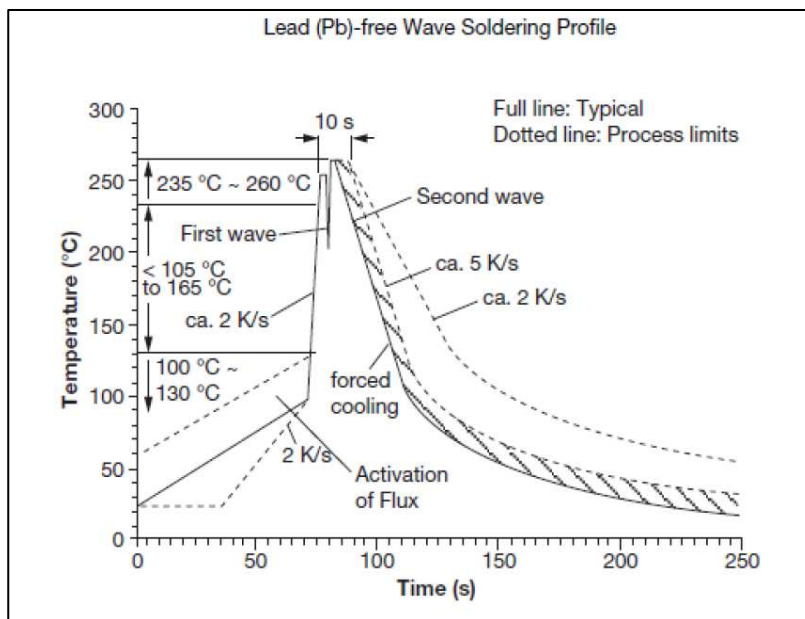
**6. Environmental Characteristics**

| ITEM | DESCRIPTION                 | TEST CONDITIONS  | REQUIREMENTS   |
|------|-----------------------------|--|--|
| 6-1  | Resistance Low 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°C ±3°C<br>2)Time: 96 hours                               | 1)As shown in item 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max                                     |
| 6-2  | Resistance High 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°C ±2°C<br>2)Time: 96 hours                               | 1)As shown in item 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max                                     |
| 6-3  | Resistance 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°C ±2°C<br>2)Relative humidity: 90~95%<br>3)Time: 96 hours | 1)As shown in item 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max<br>3)Insulation Resistance:<br>10 MΩ min |

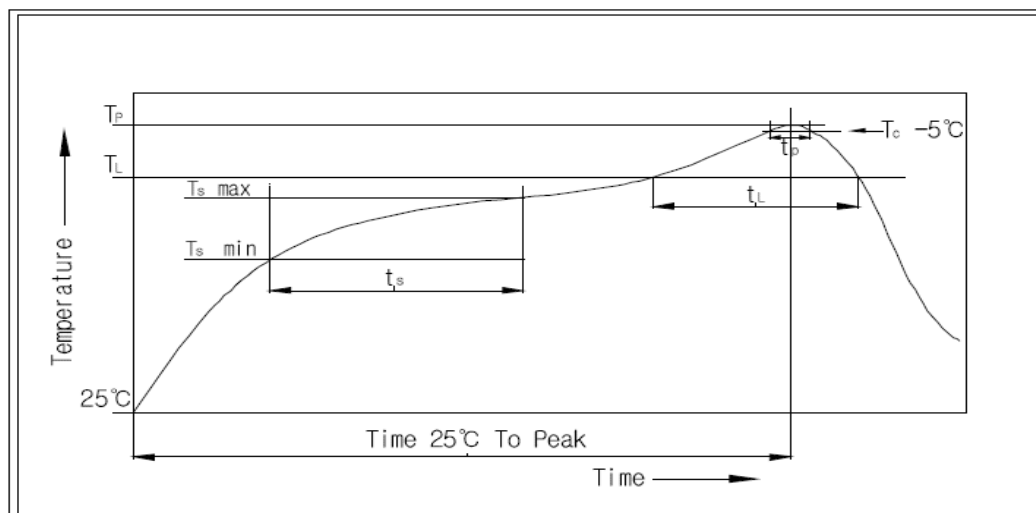
**7. This item is "RoHS" Compliant**

**8. Manual Soldering : Max 350°C, 3 sec.**

**9. Wave Soldering Conditions:**



**10. Reflow Soldering Conditions: (SMD type only)**



**10-1 Condition for Soldering**

| Profile Feature  | Pb-Free Assembly                |
|--|---------------------------------|
| Average Ramp-UP Rate(Ts max to TP)   | 3°C/second max                  |
| Preheat<br>- Temperature Min(Ts min)<br>- Temperature Max(Ts max)<br>- Time (ts min to ts max) | 150°C<br>200°C<br>60-180seconds |
| Time maintained above:<br>- Temperature (TL)<br>- Time (tL)                                    | 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                  |
| Ramp-Down Rate   | 6°C/sec max                     |
| Time 25°C to Peak Temperature  | 8 minutes max                   |