

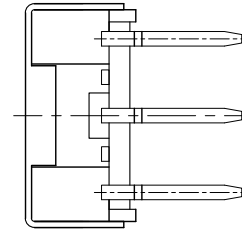
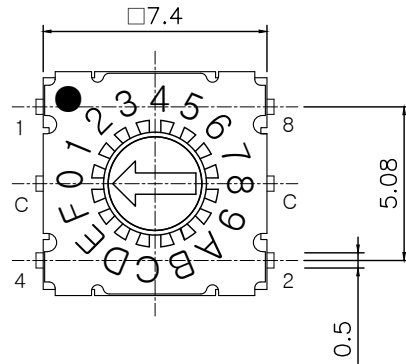
DATA SHEET

SUNGMUN CODE : MADR-16
DESCRIPTION : MINI ROTARY DIP SWITCH

SUNGMUN ELECTRONICS CO., LTD.

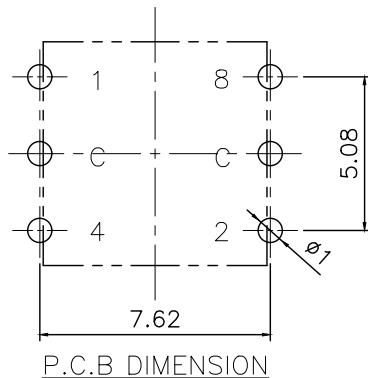
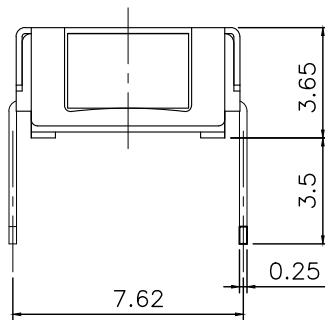
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| MRK. | DATE | REVISION | SIGN |
|------|------|----------|------|
| △ | | | |



SPECIFICATION

- Rating : 100mA, DC 42V(Switching)
400mA(Non-Switching)
- Contact Resistance : 80mΩ Max
- Insulation Resistance : 100MΩ Min
- Operating Force : 120±30gf Max.
- Life Cycle : 25,000 steps
- Sealing : Comparable IP67



| | | Real Coded | | | | |
|--|---|------------|---|---|---|---|
| | | C | 1 | 2 | 4 | 8 |
| 10 P o s i t i o n | 0 | ● | | | | |
| | 1 | ● | ● | | | |
| | 2 | ● | | ● | | |
| | 3 | ● | ● | ● | | |
| | 4 | ● | | | ● | |
| | 5 | ● | ● | | | |
| | 6 | ● | | ● | ● | |
| | 7 | ● | ● | ● | ● | |
| | 8 | ● | | | | ● |
| | 9 | ● | ● | | | |
| 16 P o s i t i o n | A | ● | | ● | | ● |
| | B | ● | ● | ● | | ● |
| | C | ● | | | ● | ● |
| | D | ● | | | ● | ● |
| | E | ● | | ● | ● | ● |
| | F | ● | ● | ● | ● | ● |

| DRAW/DESIGNED | CHECKED | APPROVED | UNIT | G.TOL | TITLE | | |
|-----------------------------|------------|------------|------|-------|----------|--------------------|-------|
| S. M KIM | J. P ROH | K. I LEE | | mm | ±0.1 | MINI ROTARY SWITCH | |
| 2019-07-10 | 2019-07-10 | 2019-07-10 | | SCALE | MODEL | MADR-16 | SHEET |
| | | | | SIZE | DRAW NO. | MADR-16 | 1/1 |
| SUNGMUN ELECTRONICS CO.,LTD | | | | A4 | | | |

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. 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 | 120gf·cm ±30 max |
| 5-2 | Operation Life | Measurements shall be made following the test set forth below: 1)100mA, 42V DC resistive load 2)Rate of operation: 15~20 cycles/ minute 3)Step of operation: 25,000 steps | 1)As shown in item 4-3,4-4 2)Contact Resistance: 200mΩ max 3)Final-after test |

6. Environmental Characteristics

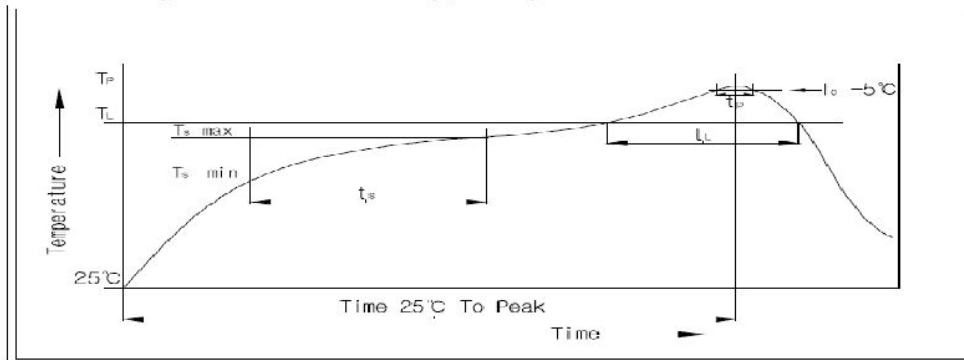
| ITEM | DESCRIPTION | TEST CONDITIONS | REQUIREMENTS |
|------|-----------------------------|--|--|
| 6-1 | Resistance Low Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made: 1)Temperature: -60°C ±3°C 2)Time: 96 hours | 1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 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: 1)Temperature: 125°C ±2°C 2)Time: 96 hours | 1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 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: 1)Temperature: 40°C ±2°C 2)Relative humidity: 90~95% 3)Time: 96 hours | 1)As shown in item 4-4, 5-1 2)Contact Resistance: 200mΩ max 3)Insulation Resistance: 10 MΩ min |

7. This item is "RoHS" Compliant

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

9. Wave Soldering : Max 280°C, 5 sec.

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 | |
| - Temperature Min(Ts min) | 150°C |
| - Temperature Max(Ts max) | 200°C |
| - Time (ts min to ts max) | 60-180seconds |
| Time maintained above: | |
| - Temperature (TL) | 217°C |
| - Time (tL) | 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 |