

# DATA SHEET

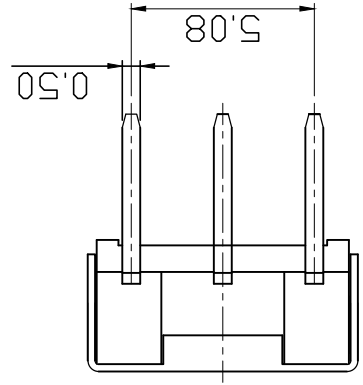
SUNGMUN CODE : MSDR-10

DESCRIPTION : MINI ROTARY DIP SWITCH

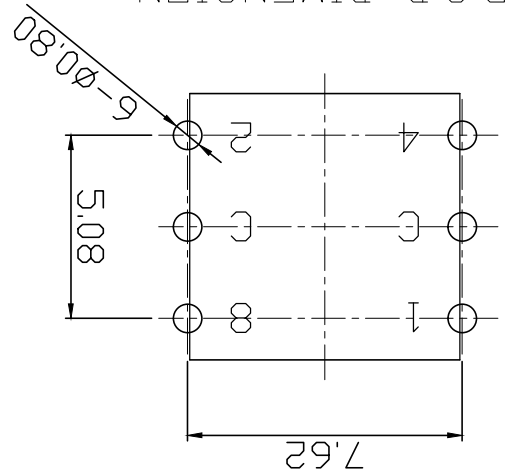


**SUNGMUN**  
ELECTRONICS

APPD	CHKD	D'SGD	TITLE: MINI ROTARY DIP SWITCH
J.P. ROH	S.M. PARK	Y.N. JEON 2018.10.16	MODEL NO.: MSDR-10 SUNGMUN ELECTRONICS CO., LTD. REV 02

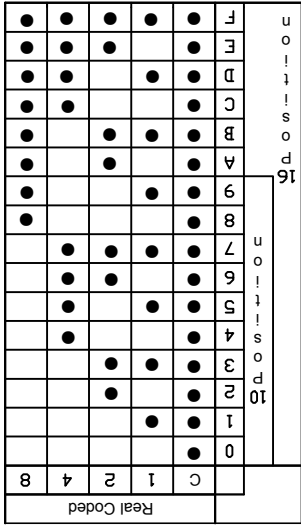


P.C.B. DIMENSION  
(TOP VIEW)



SPECIFICATION

1. Operating Voltage : 42V  
(None-Switching : 400mA)  
(Switching : 100mA)
2. Contact Resistance : 80mΩ Max
3. Insulation Resistance : 100MΩ Min
4. Operating Force : 120gf.cm ±30 Max
5. Life Cycle : 25,000 steps
6. Sealing : Comparable IP67



MARK	DATE	REMARKS
▽		
▽		

## 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 40V

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**

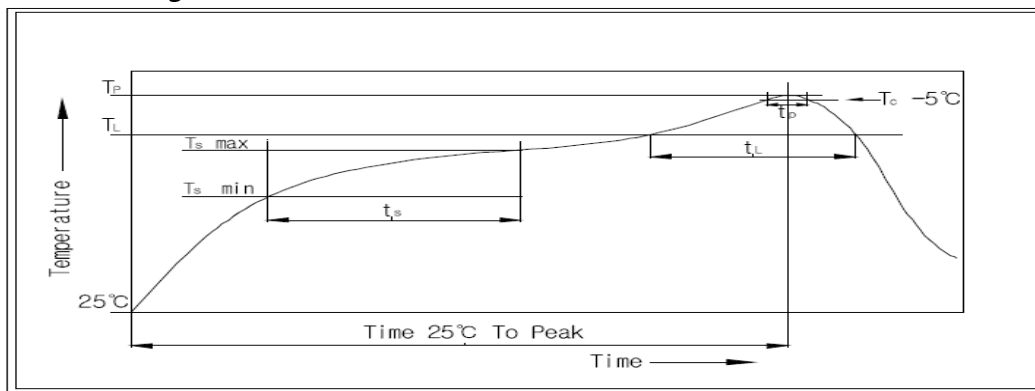
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-1	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made: 1)Temperature: -60°C ±3°C 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 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:



### 10-1 Condition for Soldering

Profile Feature	Pb-Free Assembly
Average Ramp-UP Rate( $T_s\ max$ to $T_P$ )	3°C/second max
Preheat	
- Temperature Min( $T_s\ min$ )	150°C
- Temperature Max( $T_s\ max$ )	200°C
- Time ( $t_s\ min$ to $t_s\ max$ )	60-180seconds
Time maintained above:	
- Temperature ( $T_L$ )	217°C
- Time ( $t_L$ )	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
Ramp-Down Rate	6°C/sec max
Time 25°C to Peak Temperature	8 minutes max

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