

DATA SHEET

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

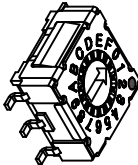
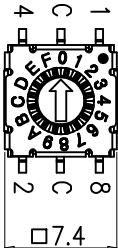
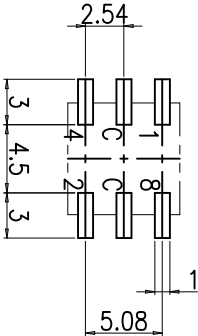
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REV. NO.	DATE	REVISION	DR	CH	APP
	23.10.13	DIN ISO-2768-1m tolerance applied	H.S. LEE	K.N. KIM	W.J. LEE

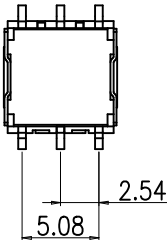
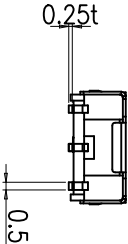
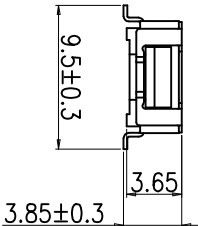
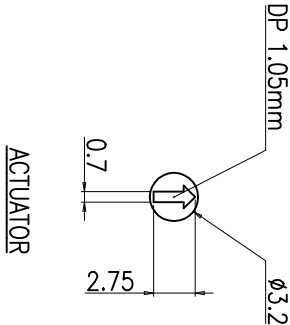
SPECIFICATION

- Rating : 100mA, DC 42V (Switching)
400mA, DC 42V (None-Switching)
- Contact Resistance : 80mΩ Max
- Insulation Resistance : 100MΩ Min
- Operating Force : 120±30gf
- Life cycle : 25,000 steps
- Sealing : IP67 (Dust & Water proof)
- Packing : 70pcs Tube / 1,300pcs Reel Packing



P.C.B DIMENSION (Top View)

Reel Coded								
C	1	2	4	8				
0	●							0
1	●	●						1
2	●		●					2
3	●	●	●					3
4	●			●				4
5	●	●			●			5
6	●		●			●		6
7	●	●	●				●	7
8	●					●		8
9	●	●					●	9
10	●		●			●		A
11	●	●					●	B
12	●			●		●		C
13	●	●			●		●	D
14	●		●			●	●	E
15	●	●	●	●	●			F



DRAW/DESIGNED		CHECKED	APPROVED	G.TOL		TITLE
J.S YANG		W.J LEE	K.I LEE		UNIT	MINI ROTARY DIP SWITCH
2021-11-01		2021-11-01	2021-11-01	mm	SCALE	MSDR-16S
MSDR-16S-04		MSDR-16S-04		SIZE	DRAW NO.	REV.
MSDR-16S-04		MSDR-16S-04		A4		04

Din ISO-2768-1m					
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. 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 $\pm$ 30
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: 200m Ω max 3)Final-after test

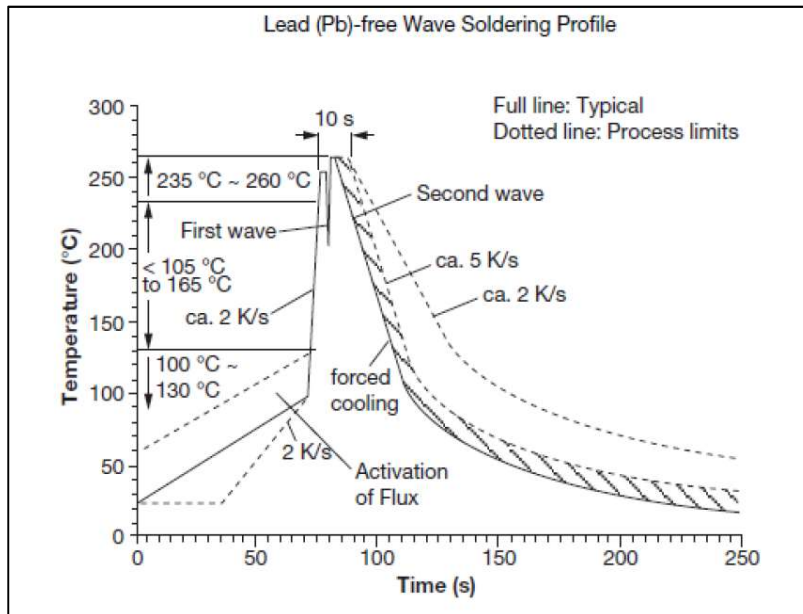
6. Environmental Characteristics

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 $\pm$ 3°C 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 200m Ω 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 $\pm$ 2°C 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 200m Ω 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 $\pm$ 2°C 2)Relative humidity: 90~95% 3)Time: 96 hours	1)As shown in item 4-4, 5-1 2)Contact Resistance: 200m Ω max 3)Insulation Resistance: 10 M Ω min

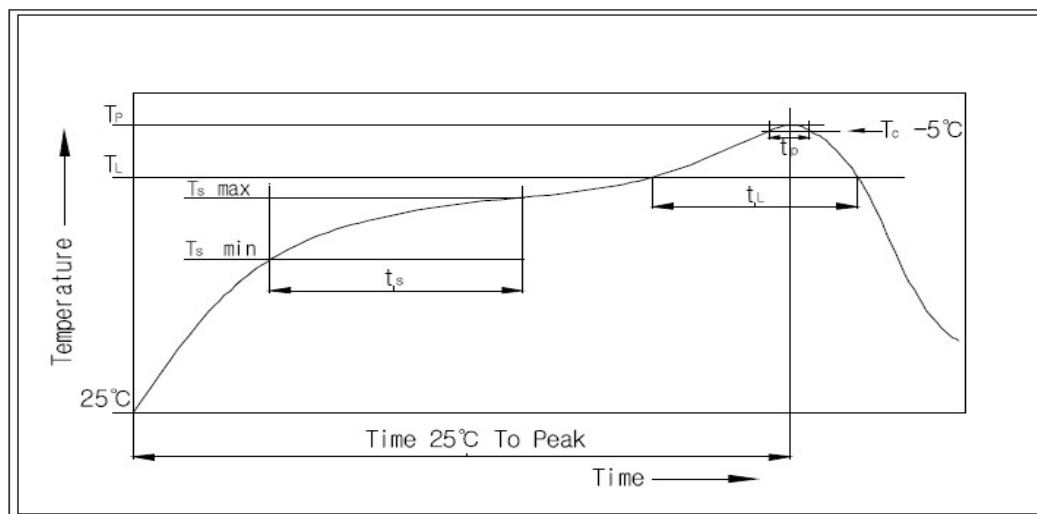
7. This item is "RoHS" Compliant

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

9. Wave Soldering Conditions:



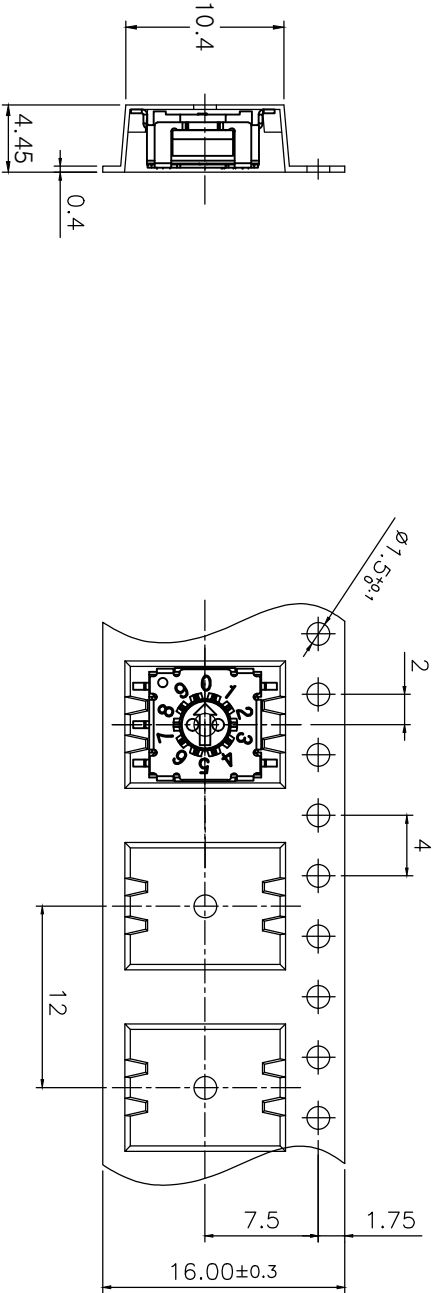
10. Reflow Soldering Conditions: (SMD type only)



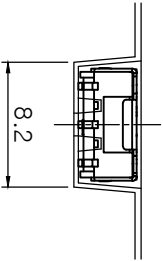
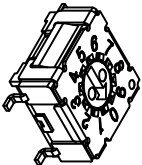
10-1 Condition for Soldering

Profile Feature	Pb-Free Assembly
Average Ramp-UP Rate(Ts max to TP)	3°C/second max
Preheat	
- 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

MRK.	DATE	REVISION	SIGN
△			



DIRECTION OF FEED



Units(pcs)
1,300

DRAW/DESIGNED	CHECKED	APPROVED		G.TOL	TITLE	M Series SMD Reel Packing	REV.
J.S YANG	W.J LEE	K.I LEE		± 0.3			
2021-09-14	2021-09-14	2021-09-14	UNIT	MODEL NO.			
			SCALE	MSDX -XXSJUX-Reel			
			2:1	MSDX -XXSCUCJX-Reel			
SUNGmun ELECTRONICS CO.,LTD				SIZE	DRAW NO.	TR-MSDO-00SJU0-03	03
				A4		TR-MSDO-00SCUCJ-03	