DATA SHEET

SUNGMUN CODE : ESR-10H1

DESCRIPTION : ROTARY DIP SWITCH

SUNGMUN ELECTRONICS CO., LTD.

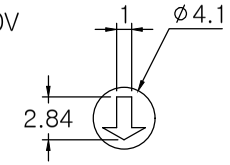
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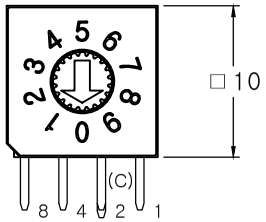
MRK.	DATE	REVISION	SIGN
△	21.12.14	Terminal Length 3.5mm --> 4mm	

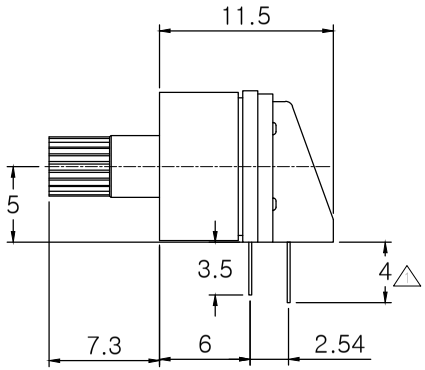
SPECIFICATION

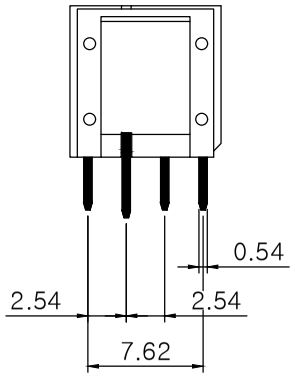
1. Rating : 150mA, DC 42V (Switching)
   200mA, DC 42V (None-Switching)
2. Contact Resistance : 80mΩ Max
3. Insulation Resistance : 100MΩ Min at DC 250V
4. Operating Force : 700gf Max
5. Life cycle : 10,000 steps
6. Sealing : IP67 (Dust & Water proof)
7. Packing : 50pcs Tube



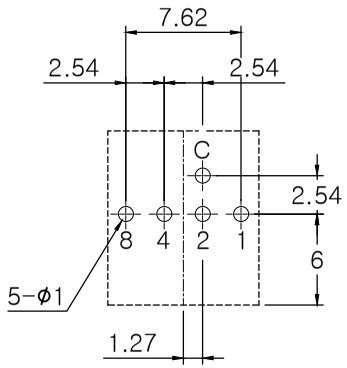
ACTUATOR



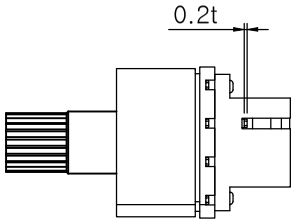


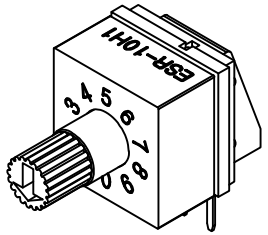


Real Code							
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	6	●		●	●		6
	7	●	●	●	●		7
	8	●				●	8
	9	●	●			●	9



P.C.B DIMENSION (Top View)





DRAW/DESIGNED	CHECKED	APPROVED		G.TOL	TITLE	ROTARY DIP SWITCH	
J.S YANG	W.J LEE	K.I LEE		±0.3			
			UNIT	SCALE	MODEL NO.	ESR-10H1	REV.
2022-01-07	2022-01-07	2022-01-07	mm	2:1			
SUNGMUN ELECTRONICS CO.,LTD				SIZE	DRAW NO.	ESR-10H1-04	04
				A4			

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SUNGMUN ELECTRONICS	ROTARY DIP SWITCH SPECIFICATION (10X10)	Rev. 07 P : 1 / 3

1. Description:

This specification describes "10X10 size of Rotary Dip Switches" which are S, T, F and Q,E series.

1-1 Operating / Storage Temperature Range : -40℃ ~ +85℃

2. Rating:

2-1 None-Switching : 200 mA, DC 42V

2-2 Switching : 150 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.
4-3	Insulation Resistance	250V DC, 1minute ±5seconds	100 ㏁ 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	700gf•cm max
5-2	Operation Life	Measurements shall be made following the test set forth below: 1)150mA, 42V DC resistive load 2)Rate of operation: 15~20 cycles/ minute 3)Step of operation: 10,000 steps	1)As shown in item 4-3, 4-4 2)Contact Resistance: 200mΩ max

6. Environmental Characteristics

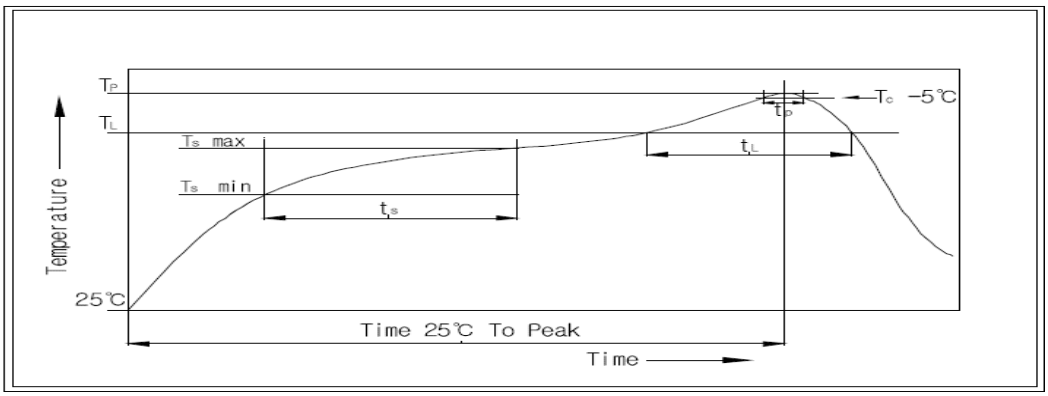
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-1	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made: 1)Temperature: -40℃ ±3℃ 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 2)Contact 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: 85℃ ±2℃ 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℃ ±2℃ 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℃, 3 sec.

9. Wave Soldering : Max 260℃, 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℃/second max
Preheat - Temperature Min(Ts min) - Temperature Max(Ts max) - Time (ts min to ts max)	 150℃ 200℃ 60-180seconds
Time maintained above: - Temperature (TL) - Time (tL)	 217℃ 60-150seconds
Peak/Classification Temperature(TP)	260℃ +0℃/ -5℃
Time within 5℃ of actual Peak Temperature(TP)	5~10 seconds
Ramp-Down Rate	6℃/sec max
Time 25℃ to Peak Temperature	8 minutes max

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MSDM-04S MSDR-16H1 TDR-16H TER-10