

DATA SHEET

SUNGMUN CODE : ESR-10
DESCRIPTION : ROTARY DIP SWITCH

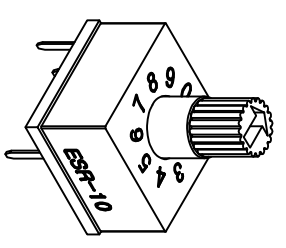
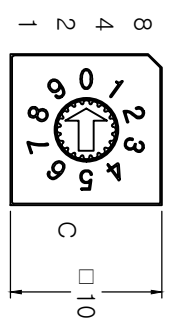
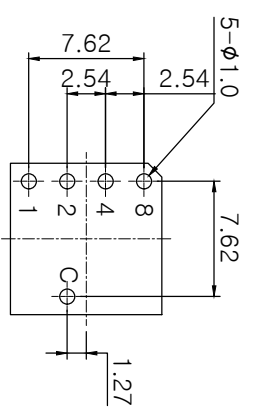
SUNGMUN ELECTRONICS CO., LTD.

Address 301-302,Bucheon Technopark 345, Seokcheon-ro, Ojeong-gu
Bucheon-si, Gyeonggi-do, Korea
TEL. +82-32-328-1941~4
FAX +82-32-328-1945
E-mail sungmun@sungmun.co.kr
Website www.sungmun.com

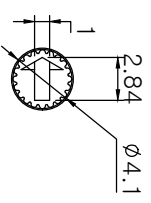
| | | | |
|------|------|----------|------|
| MRK. | DATE | REVISION | SIGN |
|------|------|----------|------|

SPECIFICATION

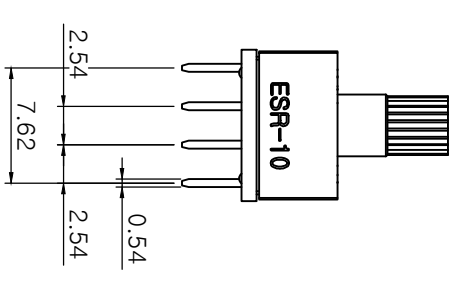
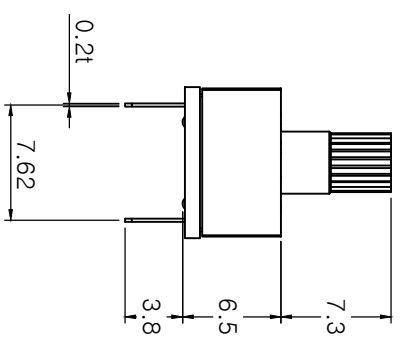
1. Rating : 150mA, DC 42V (Switching)
200mA, DC 42V (None-Switching)
2. Contact Resistance : 80mΩ Max
3. Insulation Resistance : 100MΩ Min at DC 250V
4. Operating Force : 700gf Max
5. Life cycle : 10,000 steps
6. Sealing : IP67 (Dust & Water proof)
7. Packing : 50pcs Tube



P.C.B DIMENSION (Top View)



ACTUATOR



| 10 Positions | Real Code | | | |
|--------------|-----------|---|---|---|
| | C | 1 | 2 | 8 |
| 0 | ● | | | |
| 1 | ● | ● | | |
| 2 | ● | | ● | |
| 3 | ● | ● | ● | |
| 4 | ● | | | ● |
| 5 | ● | ● | | ● |
| 6 | ● | | ● | ● |
| 7 | ● | ● | ● | |
| 8 | ● | | | ● |
| 9 | ● | ● | | ● |

| | | | | | |
|---------------|------------|------------|------------|-----------------------|----------------------------|
| DRAW/DESIGNED | CHECKED | APPROVED | | G.TOL ±0.3 | TITLE ROTARY DIP SWITCH |
| J.S YANG | W.J LEE | K.I LEE | | | |
| 2022-01-07 | 2022-01-07 | 2022-01-07 | UNIT mm | SCALE 2:1 | MODEL NO. ESR-10 |
| | | | SIZE A4 | DRAW NO. ESR-10-03 | REV. 03 |

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°C ~ +85°C

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 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 | 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

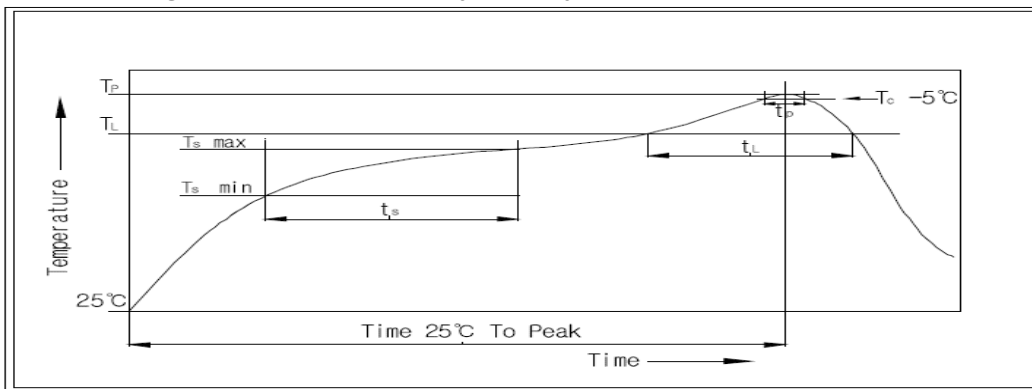
| ITEM | DESCRIPTION | TEST CONDITIONS | REQUIREMENTS |
|------|-----------------------------|--|--|
| 6-1 | Resistance Low Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made: 1)Temperature: -40°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: 85°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 260°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) | 5~10 seconds |
| Ramp-Down Rate | 6°C/sec max |
| Time 25°C to Peak Temperature | 8 minutes max |