

# DATA SHEET

**SUNGMUN CODE :** FER-16

**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



## 1. Description:

This specification describes "10X10 size of Rotary Dip Switches" which are S, T, F and Q 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.<br>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:<br>1)150mA, 24V DC resistive load<br>2)Rate of operation: 15~20 cycles/ minute<br>3)Step of operation: 10,000 steps | 1)As shown in item 4-3, 4-4<br>2)Contact Resistance:<br>200mΩ max |

### 6. Environmental Characteristics

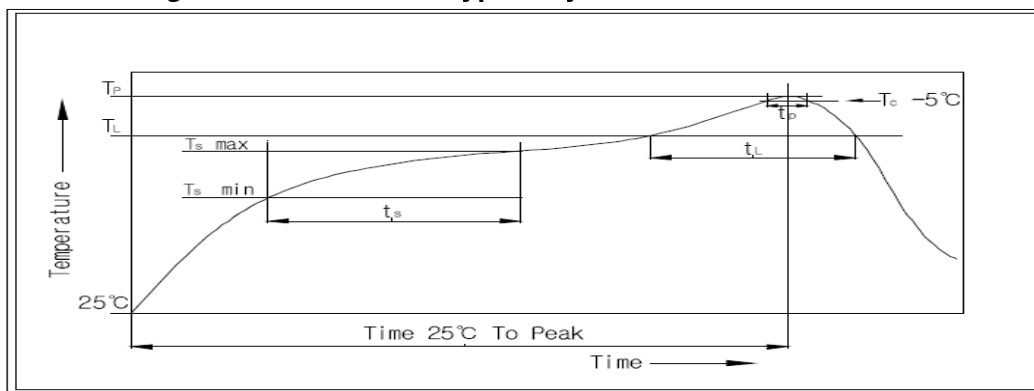
| ITEM | DESCRIPTION                 | TEST CONDITIONS                                                                                                                                                                                                                    | REQUIREMENTS                                                                                               |
|------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 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:<br>1)Temperature: -40°C ±3°C<br>2)Time: 96 hours                               | 1)As shown in item 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>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:<br>1)Temperature: 85°C ±2°C<br>2)Time: 96 hours                                | 1)As shown in item 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>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:<br>1)Temperature: 40°C ±2°C<br>2)Relative humidity: 90~95%<br>3)Time: 96 hours | 1)As shown in item 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max<br>3)Insulation Resistance:<br>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) | 5~10 seconds     |
| Ramp-Down Rate                                 | 6°C/sec max      |
| Time 25°C to Peak Temperature                  | 8 minutes max    |