

# DATA SHEET

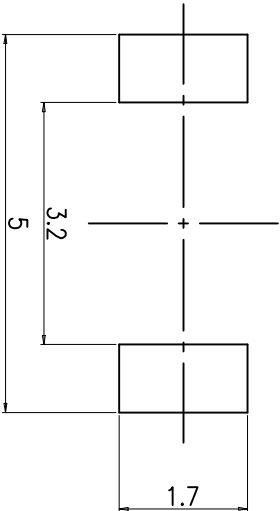
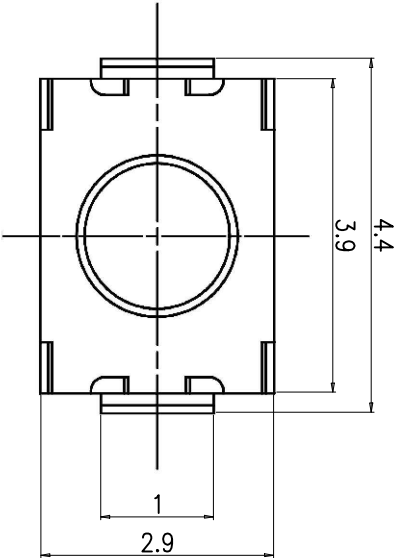
**SUNGMUN CODE :** STP-1185U

**DESCRIPTION :** TACT SWITCH

## **SUNGMUN ELECTRONICS CO., LTD.**

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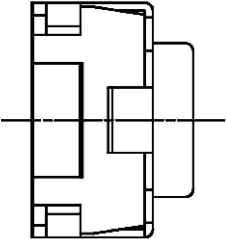
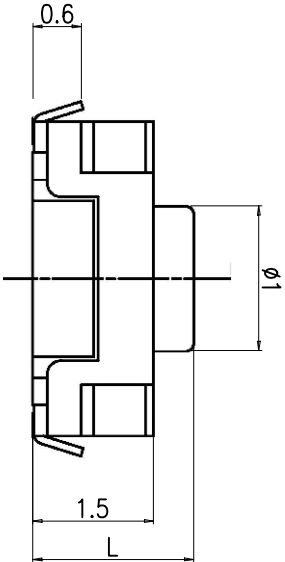
| REV NO.                                                                                        | DATE | REVISION                                                  | DR      | CH      | APP     |
|------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------|---------|---------|---------|
|  23.03.06 |      | Recreation of drawings for unification of drawing formats | H.S LEE | K.N KIM | W.J LEE |



P.C.B DIMENSION



CIRCUIT DIAGRAM



### NOTE

1. Rating : 50mA, 12V DC
2. Travel : 0.15mm
3. Contact Resistance : 100mΩ Max
4. Bounce : 10m sec MAX
5. Operating Force : 160 ±50gf
6. Operating Life : 100,000 Cycles

|       |       |
|-------|-------|
| 1185  | "L"   |
| 1185E | 2mm   |
| 1185U | 2.5mm |

|        |                                     |
|--------|-------------------------------------|
| 1185   | TERMINAL FLAT & WITHOUT EMBOSS      |
| 1185E  | TERMINAL FLAT & WITH EMBOSS         |
| 1185U  | TERMINAL U BENDING & WITHOUT EMBOSS |
| 1185UE | TERMINAL U BENDING & WITH EMBOSS    |

| DRAW/DESIGNED                                                                                                  | CHECKED    | APPROVED   |  | G.TOL | TITLE          |
|----------------------------------------------------------------------------------------------------------------|------------|------------|-------------------------------------------------------------------------------------|-------|----------------|
| W.J LEE                                                                                                        | J.P ROH    | K.I LEE    | UNIT                                                                                | SCALE | MODEL          |
| 2018-06-12                                                                                                     | 2018-06-12 | 2018-06-12 | mm                                                                                  | 1:1   | NO.            |
|  SUNGMUN ELECTRONICS CO.,LTD |            |            |                                                                                     | SIZE  | DRAW NO.       |
|                                                                                                                |            |            |                                                                                     | A4    | STP-1185U-D-02 |
| TACT SWITCH                                                                                                    |            |            |                                                                                     |       | REV.           |
|                                                                                                                |            |            |                                                                                     |       | 02             |

### 1. Description:

This specification covers the requirements for single key switches which have no key top(Tact switches mechanical contact).

1-1 Operating Temperature Range : -20°C ~ +70°C (normal humidity, normal press)

1-2 Storage Temperature Range : -30°C ~ +80°C

1-3 Test Conditions :

Tests and measurements shall be made in the following standard conditions unless otherwise specified :

Normal temperature (temperature 5 to 35°C)

Normal humidity (relative humidity 45 to 85%)

Normal pressure (pressure 860 to 1,060 mbars)

In case any question arises from the judgment made, tests shall be conducted in the following conditions:

Temperature (20±2°C)

Relative humidity (60±5%)

Pressure (860 to 1,060 mbars)

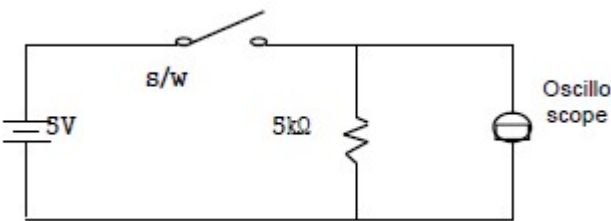
### 2. Rating:

2-1 Maximum Rating : 50 mA, DC 12V

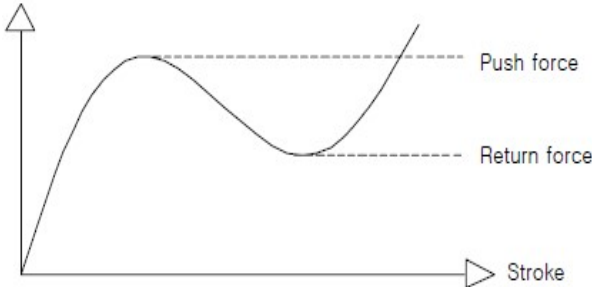
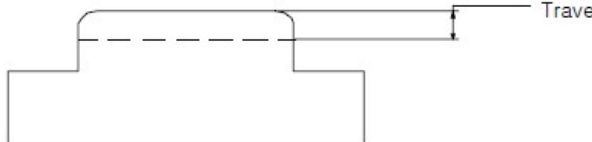
3. Type of Actuation : Push – ON type

4. Contact Arrangement : 1 poles 1 throws (SPST)

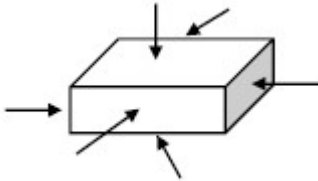
### 5. Electrical Characteristics

| ITEM | DESCRIPTION                     | TEST CONDITIONS                                                                                                                                                                                                                                 | REQUIREMENTS                                                             |
|------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 5-1  | Visual Examination              | By visual examination check without any out pressure & testing.                                                                                                                                                                                 | There shall be no defects that affect the serviceability of the product. |
| 5-2  | Contact Resistance              | ① Applying static load twice the actuating force to the center of the stem.<br>② Measurements shall be made with a 1kHz shall current contact resistance meter.                                                                                 | 100mΩ max.                                                               |
| 5-3  | Insulation Resistance           | 100V DC, 1minute ±5seconds                                                                                                                                                                                                                      | 100 MΩ min.                                                              |
| 5-4  | 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.                                |
| 5-5  | BOUNCE                          | Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec),<br>Bounce shall be tested when "ON" and "OFF".<br> |                                                                          |

### 6. Mechanical Characteristics

| ITEM | DESCRIPTION     | TEST CONDITIONS                                                                                                                                                                                                                                   | REQUIREMENTS                                                                                                                                                                                                  |
|------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6-1  | Operation Force | <p>Push by recommended operating condition</p>                                                                                                                  | Refer to individual product drawing.                                                                                                                                                                          |
| 6-2  | Travel          | <p>Push by recommended operating condition</p> <p><math>F = (\text{Operation force}) \times 2</math></p>                                                      | Refer to individual product drawing.                                                                                                                                                                          |
| 6-4  | Stop Strength   | <p>Placing the switch such that the direction of switch operation is vertical, a static load of 3kgf shall be applied in the direction of stem operation for a period of 60 seconds.</p>                                                          | There shall be no sign of damage mechanically and electrically.                                                                                                                                               |
| 6-5  | Operation Life  | <p>Measurements shall be made following the test set forth below:</p> <ol style="list-style-type: none"> <li>1) 5mA, 5V DC resistive load</li> <li>2) Rate of operation: 2~3 cycles/ sec</li> <li>3) Step of operation: 100,000 cycles</li> </ol> | <ol style="list-style-type: none"> <li>1) As shown in item 5-3, 5-4, 6-2</li> <li>2) Contact Resistance: 200mΩ max</li> <li>3) Bounce: 10m sec max</li> <li>4) Actuating force: ±30% initial force</li> </ol> |

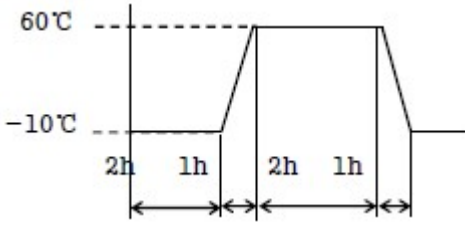
### 7. Environmental Characteristics

| ITEM | DESCRIPTION                 | TEST CONDITIONS                                                                                                                                                                                                                                                                                                                | REQUIREMENTS                                                                                                           |
|------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 7-1  | Moisture Resistance         | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements. Are made :</p> <p>1) Temperature : <math>60 \pm 2^{\circ}\text{C}</math><br/> 2) Relative humidity : 90 to 95%<br/> 3) Time : 96 hours</p> <p>Water drops shall be removed.</p> | <p>1) Contact resistance :<br/>200m<math>\Omega</math> Max.</p> <p>2) As shown in item<br/>5-3, 5-4, 5-5, 6-1, 6-2</p> |
| 7-2  | Resistance Low Temperature  | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1) Temperature: <math>-30^{\circ}\text{C} \pm 2^{\circ}\text{C}</math><br/> 2) Time: 96 hours</p> <p>Water drops shall be removed.</p>                           | <p>1) Contact resistance :<br/>200m<math>\Omega</math> Max.</p> <p>2) As shown in item<br/>5-3, 5-4, 5-5, 6-1, 6-2</p> |
| 7-3  | Resistance High Temperature | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1) Temperature: <math>80^{\circ}\text{C} \pm 2^{\circ}\text{C}</math><br/> 2) Time: 96 hours</p>                                                                 | <p>1) Contact resistance :<br/>200m<math>\Omega</math> Max.</p> <p>2) As shown in item<br/>5-3, 5-4, 5-5, 6-1, 6-2</p> |
| 7-4  | Impact Shock Resistance     | <p>Measurements shall be made following the test set forth below :</p> <p>1) Acceleration : 80G<br/> 2) Cycles of test : 3 cycles each in 6 directions, for a total of 18 cycles.</p>                                                       | <p>Item 5<br/>Item 6-1, 6-2</p>                                                                                        |

# TACT SWITCH SPECIFICATION

## STP-1185 SERIES

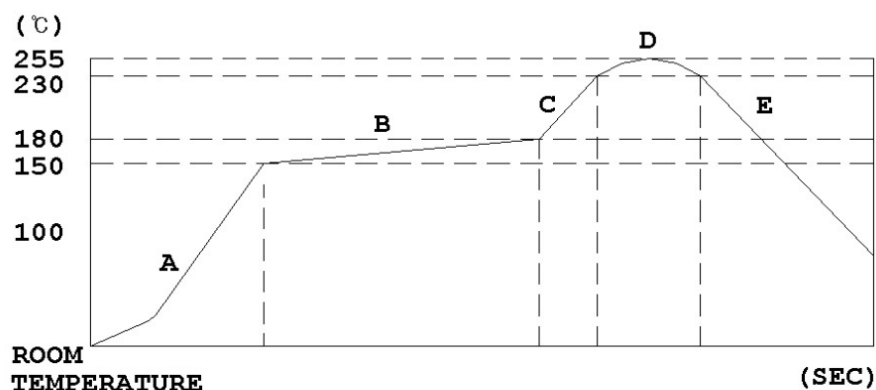
Rev. 01  
P : 5 / 6

| ITEM | DESCRIPTION           | TEST CONDITIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | REQUIREMENTS                                                                                         |
|------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 7-5  | Change of Temperature | <p>Following 5 cycles of high temperature test.<br/>The sample shall be placed in normal temperature and humidity conditions for one hour before measurements are made. During this test, water drops shall be removed.</p>  <p>Cycling : 1 cycle</p>                                                                                                                                                                       | <p>1) Contact resistance :<br/>200mΩ Max.</p> <p>2) As shown in item<br/>5-3, 5-4, 5-5, 6-1, 6-2</p> |
| 7-6  | Vibration Resistance  | <p>Measurements shall be made following the test set forth below :</p> <ol style="list-style-type: none"> <li>1) Range of oscillation : 10 to 55Hz</li> <li>2) Amplitude, peak to peak : 1.5mm</li> <li>3) Cycle of sweep : 10-55-10Hz in a minute.</li> <li>4) Mode of sweep : Logarithmically seep or uniform sweep.</li> <li>5) Direction of oscillation :<br/>Three mutually perpendicular direction, including the direction of stem travel.</li> <li>6) 2 hours each for a total of 6 hours.</li> </ol> | <p>Item 5<br/>Item 6-1, 6-2</p>                                                                      |
| 7-7  | Withstand H2S         | <ol style="list-style-type: none"> <li>(1) Density : <math>3 \pm 1</math> ppm</li> <li>(2) Temperature : <math>40 \pm 2^\circ\text{C}</math></li> <li>(3) Relative humidity : 90~95%</li> <li>(4) Duration of test : 24 hours</li> <li>(5) Standard conditions after test : 1 hour</li> </ol>                                                                                                                                                                                                                 | <p>1) Contact resistance :<br/>200mΩ Max.</p> <p>2) As shown in item<br/>5-3, 5-4, 5-5, 6-1, 6-2</p> |

|     |                  |                                                                                                                                                                                                |                                                                                                 |
|-----|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 7-8 | Withstand<br>SO2 | (1) Density : $10 \pm 2$ ppm<br>(2) Temperature : $40 \pm 2^\circ\text{C}$<br>(3) Relative humidity : 90~95%<br>(4) Duration of test : 24 hours<br>(5) Standard conditions after test : 1 hour | 1) Contact resistance :<br>200m $\Omega$ Max.<br>2) As shown in item<br>5-3, 5-4, 5-5, 6-1, 6-2 |
|-----|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

### 8. This item is "RoHS" Compliant

### 9. Soldering



| Prats | Temperature (°C) | Time at Temperature(sec)   | Treatments      |
|-------|------------------|----------------------------|-----------------|
| A     | NO - 150         |                            |                 |
| B     | 150 - 180        | $90 \pm 30$                | Preheating Zone |
| C     | 180 - 230        |                            |                 |
| D     | 230 - 255 - 230  | $30 \pm 10$ (Peak : 3 Max) | Soldering Zone  |
| E     | 230 to NO        |                            | Cooling Zone    |

\*\* NO : Normal conditions

### 10. Manual Soldering

10-1 Iron Tip Temperature :  $350 \pm 5^\circ\text{C}$  Max

10-2 Duration : 3sec Max

### 11. Notes

As this product is not protected from foreign material entering please make sure that any foreign material (E.G Magnetic powder , Washing solvent , Flux , Corrosive gas) Do not enter this product in your productions process.