# DATA SHEET

**SUNGMUN CODE :** **STP-1250**

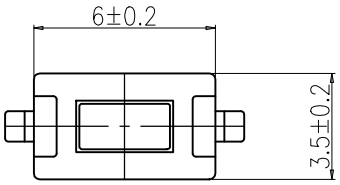
**DESCRIPTION :** **TACT SWITCH**


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ELECTRONICS

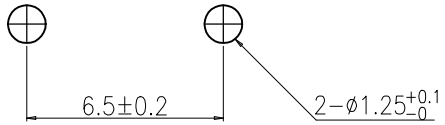
| REV NO. | DATE | REVISION | DR | CH | APP |
|---|---|---|---|---|---|
| 2 | 24.07.30 | Recreation of drawings for unification of drawing formats | W.R KYUNG | K.N KIM | W.J LEE |

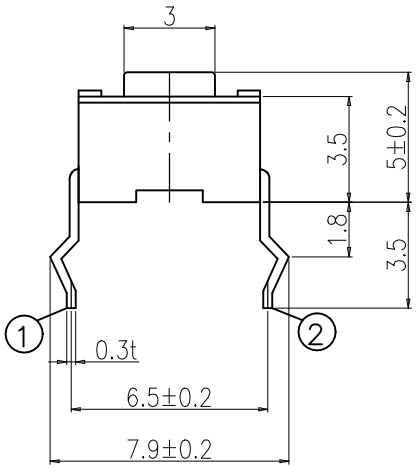


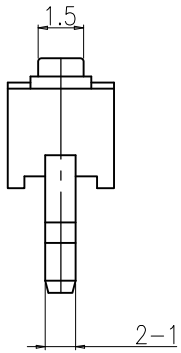

CIRCUIT DIAGRAM




P.C.B MOUNTING HOLES




## SPECIFICATION

1. RATING : DC 12V, 50mA
2. CONTACT RESISTANCE : 100mΩ MAX
3. OPERATING FORCE : 180±50gf
4. TRAVEL : 0.25±0.1mm
5. LIFE CYCLE : 50,000 CYCLES

| DRAW/DESIGNED | CHECKED | APPROVED | | G.TOL | TITLE | TACT SWITCH | |
|---|---|---|---|---|---|---|---|
| W.R KYUNG | K.N KIM | W.J LEE | | ±0.2 | | | |
| | | | UNIT | SCALE | MODEL NO. | STP-1250 | REV. |
| 2024-07-12 | 2024-07-12 | 2024-07-12 | mm | N:S | | | |
| SUNGMUN ELECTRONICS CO.,LTD | | | | SIZE | DRAW NO. | STP-1250-KE | 02 |
| | | | | A4 | | | |

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| SUNGMUN ELECTRONICS | TACT SWITCH SPECIFICATION<br>STP-1250 | Rev. 01<br>P : 1 / 4 |
|---|---|---|

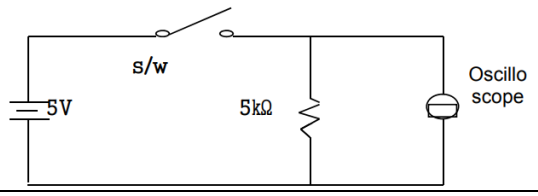
## 1. General:

| | |
|---|---|
| 1.1 Switch action | PUSH –ON type S.P.S.T |
| 1.2 Switch rating | DC 12V, 50mA Max |
| 1.3Operating temperature range | -20℃~70℃ |
| 1.4 Preservative temperature range | Single condition -30℃~80℃<br>Taping condition -20℃~40℃ |
| 1.5 Apperance and dimensions | As per individual assembly drawing. |
| 1.6 Standard conditions | Unless otherwise specified, the test and measurements shall be carried out as follows:<br>Ambient temperature : 5~35℃<br>Relative humidity : 45~85%<br>Air pressure : 86~106kPa (860~1060mbar)<br>However, if doubt arises on the decision based on the measured values under the above-mentioned conditions, the following conditions shall be employed.<br>Ambient temperature : 20±2℃<br>Relative humidity : 65±5%RH<br>Air pressure : 86~106kPa (860~1060mbar) |

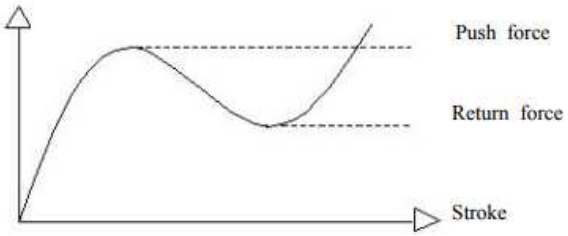
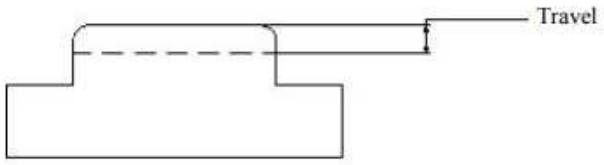
## 2. Performance

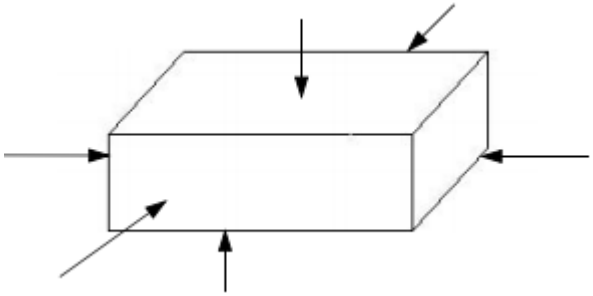
### 2.1 Electrical characteristics

| ITEM | DESCRIPTION | TEST CONDITIONS | Criteria |
|---|---|---|---|
| 2.1.1 | Contact resistance | Push force : ( Operation force ) × 2<br>Measurements shall be made with a 1kHz small current contact resistance.. | 100mΩ MAX |
| 2.1.2 | Insulation resistance | D.C. 100V for 1 minute. ( Between terminals) | 100mΩ max. |
| 2.1.3 | Withstandin voltage | A.C. 250V for 1 minute. ( Between terminals ) | There shall be no break-down |

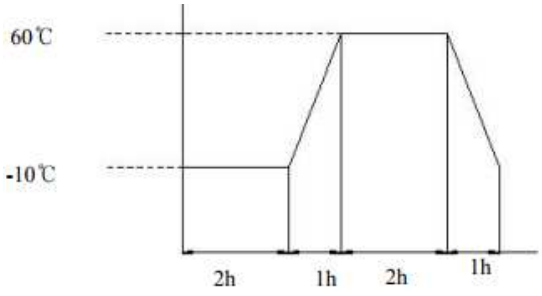
| | | | |
|---|---|---|---|
| 2.1.4 | Bounce | Operation speed : 3 ~ 4 times /sec   | 10 msec max |

2.2 Mechanical characteristics

| | Items | TEST CONDITIONS | Criteria |
|---|---|---|---|
| 2.2.1 | Operating force | Push by recommended operating condition   | See outside drawing. |
| 2.2.2 | Travel | Push by recommended operating condition<br>F = (Operation force) × 2   | 0.25 ±0.1 mm |
| 2.2.3 | Stop Strength | A static load of 3kgf shall be applied in the direction of stem operation for a period of 60 seconds. | No damage (Electrical and mechanical) |
| 2.2.4 | Stem strength | The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured. | 0.5 kgf min |
| 2.2.5 | Vibration test | (1) Amplitude : 1.5mm<br>(2) Sweep rate : 10-55-10Hz for 1 minute.<br>(3) Sweep method : Logarthmic frequency sweep rate.<br>(4) Vibration direction : X.Y.Z (3 directions)<br>(5) Time : Each direction 2 hours (Total 6 hours) | No 2.1 and 2.2.1 to 2.2.2 shall be satisfied. |

| | | | |
|---|---|---|---|
| 2.2.6 | Impact shock test | (1) Acceleration : 80G<br>(2) Cycle of test : 3 cycles each in 6 directions for a total 18 cycles<br> | No 2.1 and 2.2.1 to 2.2.2 shall be satisfied. |
| 2.2.6 | Soldering heat test | Soldering area : t/2 of P.W.B thickness<br>(P.W.B : t = 1.6)<br>Soldering temperature : 260±5℃<br>Soldering time : 5±1se | No damage (Electical and mechanical) |

2.3 Climatic characteristics

| | Items | TEST CONDITIONS | Criteria |
|---|---|---|---|
| 2.3.1 | Cold test | (1) Temperature : -30±2℃<br>(2) Duration of test : 96hours<br>(3) Take off a drop water<br>(4) Standard condition after test : 1 hour | Contact resistance : 200mΩ max<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied. |
| 2.3.2 | Heat test | (1) Temperature : 80±2℃<br>(2) Duration of test : 96hours<br>(3) Standard condition after test : 1 hour | Contact resistance : 200mΩ max<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied. |
| 2.3.3 | Temperature cycle | (1) Test cycles : 5 cycles<br>(2) Standard conditions after test : 1 hour<br>(3) 1 cycle<br> | Contact resistance : 200mΩ max<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied |

| | | | |
|---|---|---|---|
| 2.3.4 | Humidity test | (1) Temperature : 60±2℃<br>(2) Relative humidity : 90~95%<br>(3) Duration of test : 96 hours<br>(4) Take off a drop water<br>(5) Standard conditions after test : 1 hour. | Contact resistance :<br>200mΩ max<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied |
| 2.3.5 | Operating life test | (1) DC 12V, 5mA resistance load<br>(2) Operation speed : 2~3 cycles/sec<br>(3) Push force : maximum value of operation force<br>(4) Cycle of operation : See outside drawing | Contact resistance :<br>200mΩ max<br>Bounce<br>: 20m sec max<br>Actuating force<br>: ±30% initial force<br>No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied. |
| 2.3.6 | Salt mist test | Switch shall be checked after following test<br>(1) Temperature : 35±2℃<br>(2) Salt solution : 5±1%<br>(3) Durration of test : 48 hours | Without excessive rust or discoloration. |

## 3. Soldering

### 3.1 Auto soldering conditions

| ITEM | CONDITION |
|---|---|
| Preheat temperature | 110℃ max. (Environmental temperature of soldering surface of P.W.B) |
| Preheat time | 60 sec max. |
| Area of flux | 1/2 max. of P.W.B thickness |
| Temperature of solder | 255℃ max. |
| Time of immersion | Within 5 sec |
| Soldering number | Within 2 time (But should bring down heat of the first soldering) |
| Printed wiring board | Single sided copper-clad laminates. |

1) After switches were soldered, please be careful not to clean switches with solvent.

2) In the case of using soldering iron, soldering conditions shall be 280℃ max. and 3 sec max

3) After switches were soldered, please be careful not to load the knobs of switchs.

### 3.2 Manual soldering conditions

Temperature : 350 ± 5℃

Time : 3 sec max