# DATA SHEET

**SUNGMUN CODE :** STP-1243 SERIES

**DESCRIPTION :** TACT SWITCH


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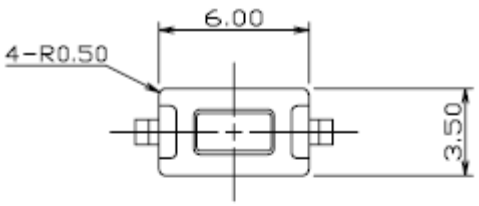
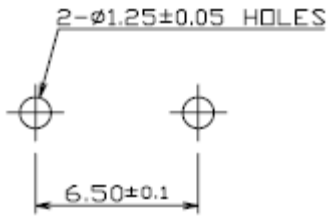
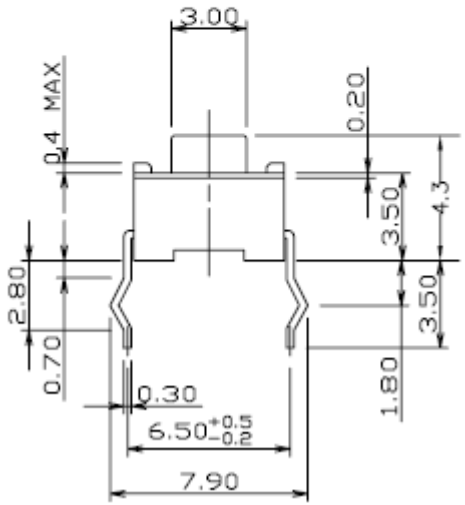
| MRK. | DATE | REVISION | SIGN |
|---|---|---|---|
| ⚠ | | | |

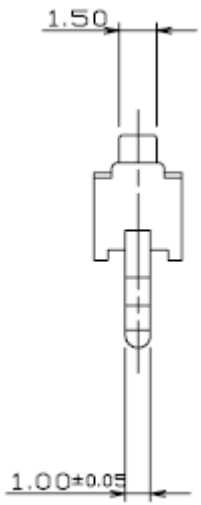



## P.C.B DIMENSION




## CIRCUIT DIAGRAM




## SPECIFICATION

1. RATING : DC 12V 50mA
2. TRAVEL : 0.25 ±0.1mm
3. CONTACT RESISTANCE : 100mΩ MAX.
4.

| MODEL | OPERATING FORCE |
|---|---|
| STP-1243 | 180±30gf |
| STP-1243W | 250±50gf |

| NO. | DESCRIPTION | MATERIAL | COLOR/FINISH | Q.TY | VENDOR |
|---|---|---|---|---|---|
| 01 | - | - | - | 1 | - |

| DRAW/DESIGNED | CHECKED | APPROVED | G.TOL | TITLE | TACT SWITCH | |
|---|---|---|---|---|---|---|
| W.J.LEE | J.P.ROH | K.I.LEE | ±0.3 | | | |
| | | | UNIT: mm / SCALE: 4:1 | MODEL | STP-1243X | SHEET |
| SUNGMUN ELECTRONICS CO.,LTD | | | SIZE: A4 | DRAW NO. | STP-12430-D-01 | 1/1 |



SME 151028

| SUNGMUN ELECTRONICS | TACT SWITCH SPECIFICATION<br>STP-1243 | Rev. 01<br>P : 1 / 5 |
|---|---|---|

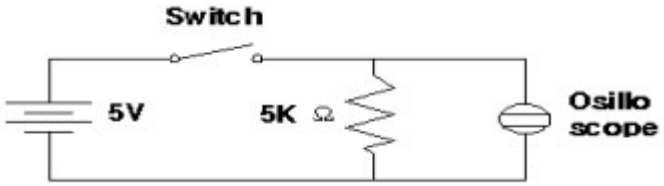
## 1. General:

| | |
|---|---|
| 1.1 Switch rating | DC 12V, 50mA |
| 1.2 Operating temperature range | -20℃~70℃ |
| 1.3 Preservative temperature range | -40℃~80℃ |
| 1.4 Apperance and dimensions | See outside drawing page |
| 1.5 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 : 60±5%RH<br>Air pressure : 86~106kPa (860~1060mbar) |

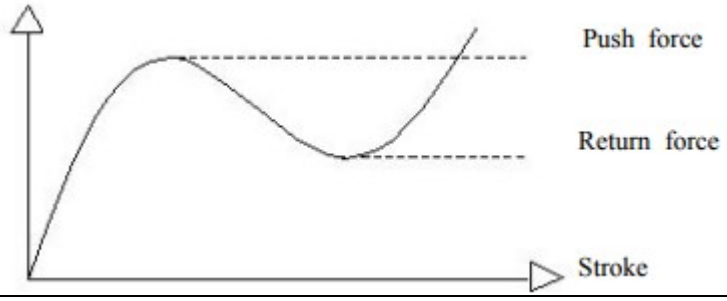
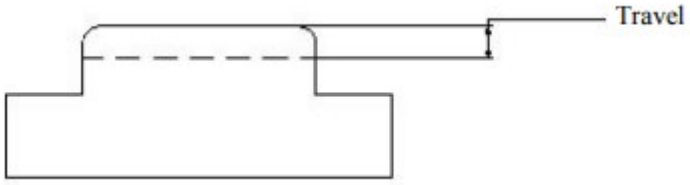
## 2. Performance

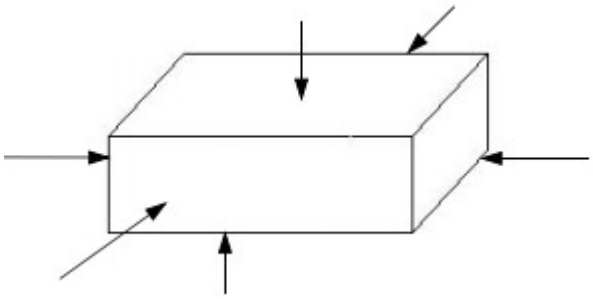
### 2.1 Electrical characteristics

| ITEM | DESCRIPTION | TEST CONDITIONS | Criteria |
|---|---|---|---|
| 2.1.1 | Contact resistance | Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1kHz small-current contact resistance meter. | 100mΩ MAX |
| 2.1.2 | Insulation resistance | Measurements shall be made following application of DC 100V pote-ntial across terminals and frame for one minute. | 100MΩ MIN. |
| 2.1.3 | Dielectric withstandin voltage | AC 250V (50Hz or 60Hz) shall be applied across terminals and frame for one minute. | There shall be no break-down |

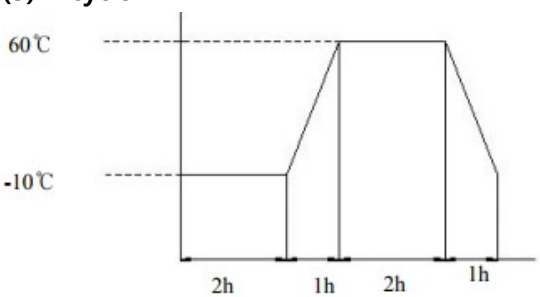
| | | | |
|---|---|---|---|
| 2.1.4 | Bounce | Lightly striking the center of the stem at a rate encountered in norm- al use (3 to 4 operations per sec.) bounce shall be tested at 'ON' and 'OFF'<br>  | |

## 2.2 Mechanical characteristics

| | Items | TEST CONDITIONS | Criteria |
|---|---|---|---|
| 2.2.1 | Operating force | Push by recommended operating condition<br>  | Refer to individual product drawing. |
| 2.2.2 | Travel | Push by recommended operating condition<br>F = (Operation force) × 2<br>  | Refer to individual product drawing. |
| 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 | 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. |

| | | | |
|---|---|---|---|
| 2.2.5 | 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 5V, 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 :<br>180gf 40,000 cycles<br>250gf 30,000 cycles | 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 | Withstand $H_2S$ | (1) Denslty : 3±1 ppm<br>(2) Temperature : 40±2℃<br>(3) Relative humidity : 90~95%<br>(4)Duration of test : 24 hours<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 |
| 2.3.7 | Withstand $SO_2$ | (1) Denslty : 10±2ppm<br>(2) Temperature : 40±2℃<br>(3) Relative humidity : 90~95%<br>(4) Duration of test :24 hours<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 |

**3. Automatic Soldering Condition**

**3.1 Soldering**

**3.1.1 Temperature : less than 260℃**

**3.1.2 Time : Continuous dipping duration shall not exceed 10 seconds.**

**3.1.3 Premissible soldering times: less than twice**

**(The second soldering would be conducted after the temperature goes down to a normal temperature)**

**3.2 Preheat**

**3.2.1 Temperature : less than 100℃**

**(Circumferential temperature of the printed circuit board)**

**3.2.2 Time: less than 45second**

**3.3 Flux streaming**

**: flux streaming shall be controlled so that it shall not swell beyond the printed Circuit board where components are installed.**

**3.4 Other precautions**

**3.4.1 Flux shall not be applied to the switch terminals and the part mounting surface of the printed circuit board before soldering.**

**3.4.2 Do not wash the switch after soldering.**