Customer ¡ G

No :

Attention ¡ G

Date :

Your ref No ¡ G

Your Part No ¡ G

# SPECIFICATION

MODEL ¡ GACTING SWITCH S TYPE

Spec No ¡ G

Sample No. ¡ G

RECEIPT STATUS

RECEIVED

By Date

Signature

Name

Title

Tsai Chia Hui

DSG'D

**HUA JIE (TAIWAN) CORP.**

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APP'D

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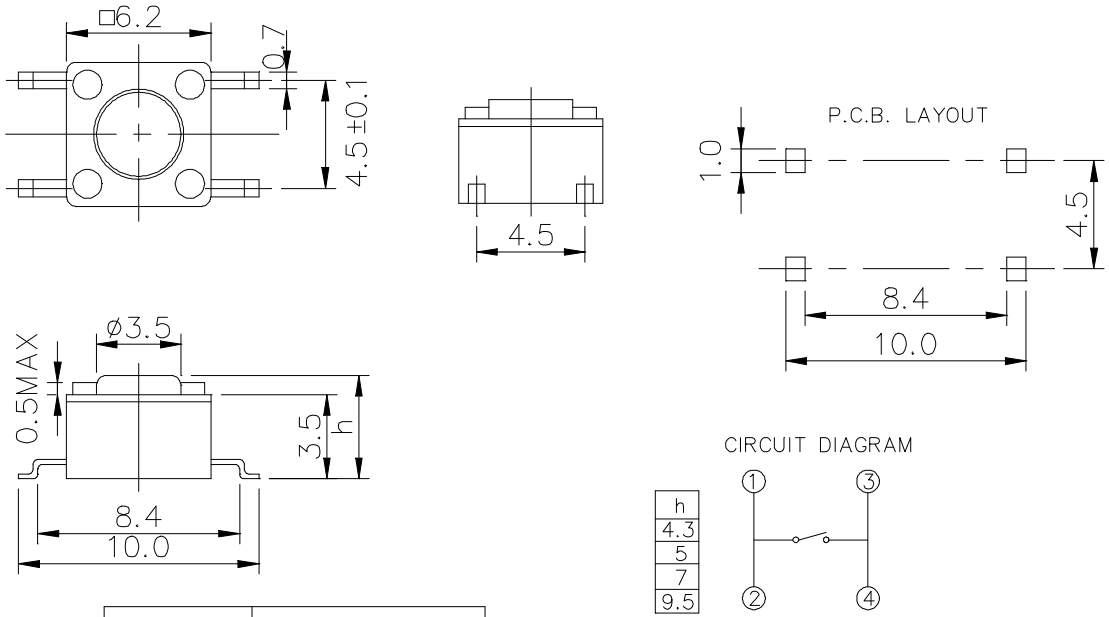
ENG.DEPT.DIVISION

Sales

# TACTING SWITCH SPECIFICATION




| The length | Tolerance range |
|---|---|
| L≤10 | ±0.3 |
| 10<L≤100 | ±0.5 |
| 100<L | ±0.6 |

| MODEL | DIM-A | STEM COLOR | ACTUATING FORCE(gf) | RETURN FORCE(gf) | STEM |
|---|---|---|---|---|---|
| TSSA-2 | 4.3 | BLACK | 160 ¡ 50 | 50 Min | |
| TSSB-2 | 5.0 | BLACK | 160 ¡ 50 | 50 Min | |
| TSSC-2 | 7.0 | BLACK | 160 ¡ 50 | 50 Min | |
| TSSD-2 | 9.5 | BLACK | 160 ¡ 50 | 50 Min | |
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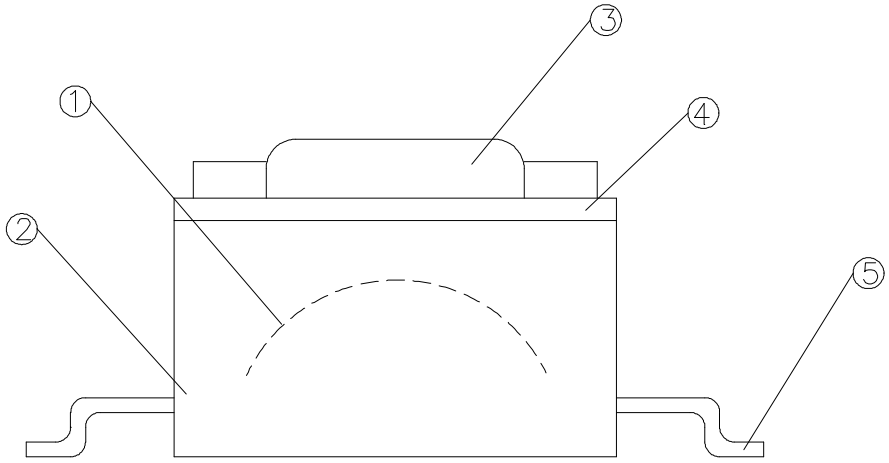
# TACTING SWITCH SPECIFICATION




| ITEM | COMPONETS | MATERIAL ARTICLE | SPECIFICATION | VENDOR |
|---|---|---|---|---|
| 1 | CONTACT | SILVER PHOSPHOR BRONZE STRIP | C5210R-EH | JAPAN |
| 2 | HOUSING | P.P.S | FZ-3000 | JAPAN |
| 3 | STEM | PA-66 | FR-50 | JAPAN |
| 4 | FRAME | FE BOTTOM SN COATING | £ =0.1mm | SHANGHAI |
| 5 | TERMINAL | BRASS STRIP SILVER CLOTHED | H65 | SHANGHAI |
| | | | | |
| | | | | |
| | | | | |

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# TACTING SWITCH SPECIFICATION

## 1. GENERAL

**1.1** Scope — This specification covers the requirements for single key switches which have no keytop(TACT SWITCHES ¡ MECHANICAL CONTACT).

**1.2** Operating Temperature Range

-20 to 70°C (normal humidity, normal press.)

**1.3** Storage Temperature Range

-30 to 80°C (normal humidity, normal press.)

**1.4** 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 1060 m bars)

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

Temperature (20±2°C)

Relative humidity (65±5%)

Pressure (860 to 1060 m bars)

## 2. APPEARANCE, STYLE, AND DIMENSIONS

**2.1** Appearance

There shall be no defects that affect the serviceability of the product.

**2.2** Style and Dimensions

Shall conform to the assembly drawings.

## 3. TYPE OF ACTUATION

Tactile feedback

## 4. CONTACT ARRANGEMENT 1 poles 1 throws

(Details of contact arrangement are given in the assembly drawings.)

## 5. MAXIMUM RATINGS DC 12 V 50 mA

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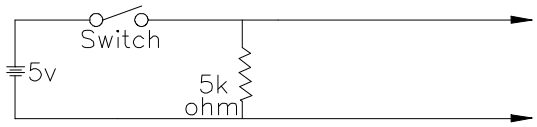
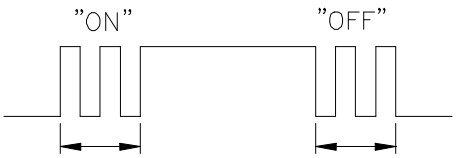
# TACTING SWITCH SPECIFICATION

## 6. PERFORMANCE

**6.1** Electrical

| Item | Test Conditions | Requirements |
|---|---|---|
| **6.1.1.** Contact Resistance | Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1 kHz small-current contact resistance meter. | 100 m ohm max. |
| **6.1.2.** Insulation Resistance | Measurements shall be made following application of DC 100 V potential across terminals and across terminals and frame for one minute. | 100 M ohm min. |
| **6.1.3.** Dielectric with-standing voltage | AC 250 V (50Hz or 60Hz) shall be applied across terminals and across terminals and frame for one minute. | There shall be no breakdown. |
| **6.1.4.** Bounce | Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec.), bounce shall be tested at “ON” and “OFF”.     | 5 m sec max. |

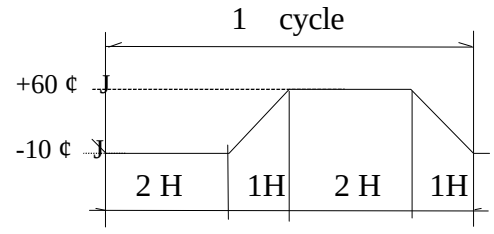
# TACTING SWITCH SPECIFICATION

**6.2** Mechanical

| Item | Test Conditions | Requirements |
|---|---|---|
| **6.2.1.** Actuating Force | Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem, the maximum load required for the stem to come to a stop shall be measured. | _____ ± ____ g f |
| **6.2.2.** Travel | Placing the switch such that the direction of switch operation is vertical and then applying a static load twice the actuating force to the center of the stem, the travel distance for the stem to come to a stop shall be measured. | 0.25 ± 0.1 m m |
| **6.2.3.** Return Force | The sample switch is installed such that the direction of switch operation is vertical and, upon depression of the stem in its center the whole travel distance, the force of the stem to return to its free position shall be measured. | _____ g f min. |
| **6.2.4.** Stop Strength | Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds. | There shall be no sign of damage mechanically and electrically. |
| **6.2.5** Stem Strength | Placing the switch such that the direction of switch operation is vertical, the maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured. | 3 k g f |

# TACTING SWITCH SPECIFICATION

**6.3** Environmental

| Item | Test Conditions | Requirements |
|---|---|---|
| **6.3.1.** Resistance to Low Temperatures | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made:<br>(1)Temperature: -30±2°C<br>(2) Time: 96 hours<br>(3)Water drops shall be removed. | Item 6.1<br>Item 6.2.1<br>Item 6.2.2 |
| **6.3.2.** Heat Resistance | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made:<br>(1)Temperature: 80±2°C<br>(2) Time: 96 hours | Item 6.1<br>Item 6.2.1<br>Item 6.2.2 |
| **6.3.3**. Moisture Resistance | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made:<br>(1) Temperature: 60±2°C<br>(2)Relative humidity: 90 to 95%<br>(3) Time: 96 hours<br>(4)Water drops shall be removed. | Contact resistance:<br>200 m ohm max.<br>Insulation resistance:<br>10 M ohm min.<br>Item 6.1.3<br>Item 6.1.4<br>Item 6.2.1<br>Item 6.2.2 |
| **6.3.4.** Temperature Cycling | Following five cycles of the temperature cycling test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made.<br>During this test, water drops shall be removed.<br>  | Item 6.1<br>Item 6.2.1<br>Item 6.2.2 |

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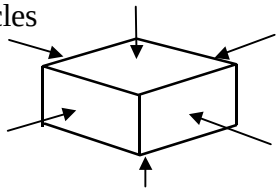
# TACTING SWITCH SPECIFICATION

**6.4** Endurance

| Item | Test Conditions | Requirements |
|---|---|---|
| **6.4.1.** Operating Life | Measurements shall be made following the test set forth below:<br>(1)DC 5V 5mA resistive load<br>(2)Rate of operation: 2 to 3 operations per second<br>(3)Depression: _____ g f<br>(4)Cycles of operation: $10x10^4$ cycles | Contact resistance: 200 m ohm max.<br>Insulation resistance: 10 M ohm min.<br>Bounce: 10 m sec max.<br>Actuating force:<br>¡ Ï30 % or<br>¡ Ð30 % of initial force<br>Item 6.1.3<br>Item 6.2.2 |
| **6.4.2.** Vibration Resistance | Measurements shall be made following the test set forth below:<br>(1)Range of oscillation: 10 to 55 Hz<br>(2)Amplitude, pk-to-pk:1.5 mm<br>(3)Cycle of sweep: 10 -55 -10 Hz in one minute, approx.<br>(4)Mode of sweep: Logarithmically sweep or uniform sweep<br>(5)Direction of oscillation: Three mutually perpendicular directions, including the direction of stem travel<br>(6)Duration of testing: 2 hours each, for a total of 6 hours | Item 6.1<br>Item 6.2.1<br>Item 6.2.2 |
| **6.4.3.** Impact Shock Resistance | Measurements shall be made following the test set forth below:<br>(1)Acceleration:80g<br>(2)Cycles of test:3 cycles each in 6 directions, for a total of 18 cycles<br>  | Item 6.1<br>Item 6.2.1<br>Item 6.2.2 |

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# TACTING SWITCH SPECIFICATION

**7. Switch Handling Precautions**

7.1. In case an automatic flow soldering apparatus is used for soldering, adhere to the following conditions:

| Item | Soldering condition |
|---|---|
| 7.1.1 Preheat Temperature | 100 ¢ Jmax<br>(Ambient temperature of printed circuit board on its soldering side) |
| 7.1.2 Preheat Time | 45 sec max. |
| 7.1.3 Flux Foaming | To such an extent that fluxes will be kept flush with the printed circuit board‘s top surface on which components are mounted.<br>Preparatory flux must not be applied to that side of printed circuit board on which components are mounted and to the area where terminals located. |
| 7.1.4 Soldering Temperature | 255 ¢ Jmax. |
| 7.1.5 Duration of Solder Immersion | 5 sec. max. |
| 7.1.6 Allowable Frequency of Soldering process | 2 times max. |

7.2 Other precautions

(1) Following the soldering process, do not try to clean the switch with a solvent or the like.

(2) Safeguard the switch assembly against flux penetration from its topside.

(3) Please have the products keep in close status and the storage time is 90 days guaranty after delivering the goods at most.



HUA JIE (TAIWAN) CORP.

# TACTING SWITCH SPECIFICATION

## 1. Scope

This specification covers the requirements of the taping packaging for SXQD standard type of TACT switches.

## 2. Packaging Materials

| Item | Description |
|---|---|
| Package | Cartons |
| Reel | Delete Cartons |
| Garrier Tape | Polypropylene |

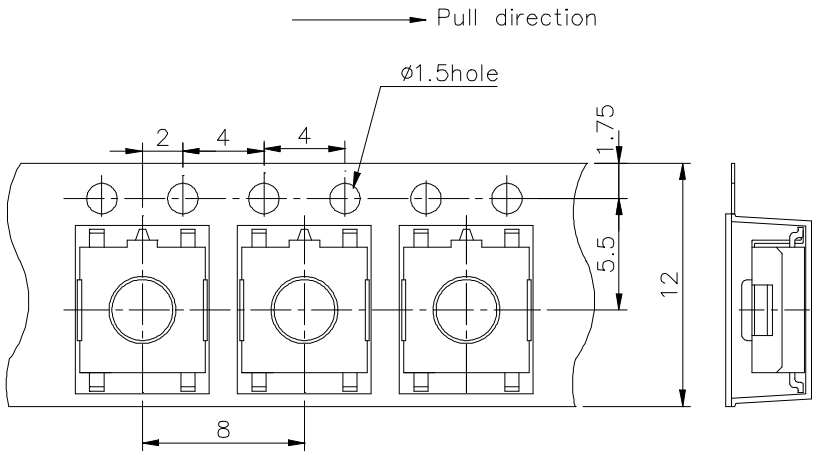
## 3. Packaging Quantity

3.1 The number of the reels.
Tan (10) reels at maximum. Which contain 30000 switches.
Ahail be packed in a package.

3.2 The number of the switches.
3000 switches shall be packed in a reel.

3.3 It should be noted that we regard two cartons mentioned above as on package for export.

## 4. Tape Form and Dimensions

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