

APPLICATION

RoHS

CUSTOMER :

REF. NO. :

DATE : 200 . .

MODEL : TACT SWITCH

MODEL No. : DJT 1109S

| DSN | CHK | APP |
|-------|-------|-------|
| M.K.R | M.K.J | K.Y.I |

| Approved by | Remark |
|-------------|--------|
| | |

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DRAWING

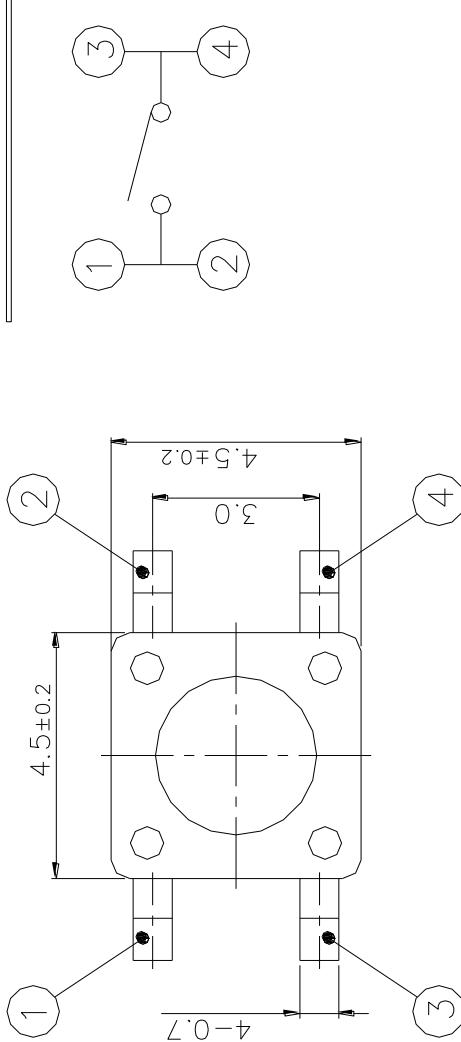
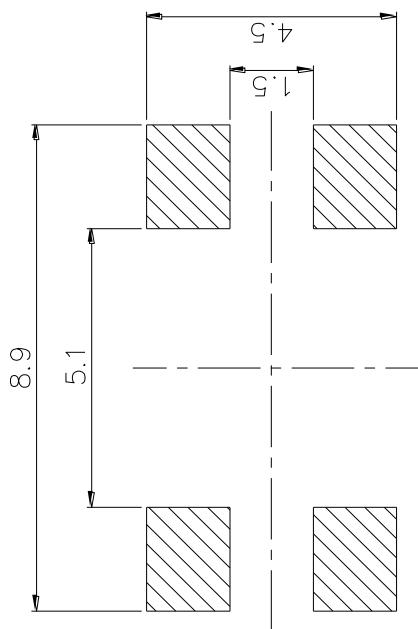
2

SPECIFICATION

3 ~8

주식회사 대진산업

DAEJIN INDUSTRY CO.,LTD

CIRCUIT DIAGRAMP.C.B LAND PATTERNSTEM HEIGHT

| MODEL | H (mm) |
|-----------|--------|
| DJT1109S | 3.8 |
| DJT1109SA | 7.0 |

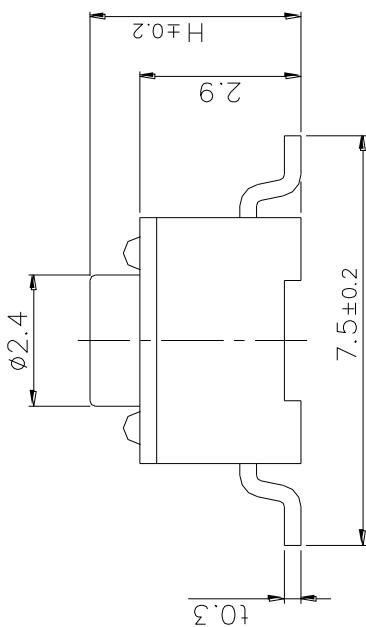
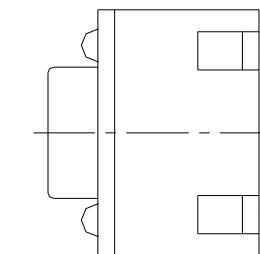
SPECIFICATION

1. RATING : DC 12V 50mA
2. TRAVEL : 0.25±0.1mm
3. CONTACT RESISTANCE : 100mΩ MAX.
4. BOUNCE : 10m SEC MAX.

| MODEL | OPERATING FORCE | LIFE CYCLES |
|-------------|-----------------|-----------------|
| DJT1109S -0 | 100±30gf | 1,000,000 CYCLE |
| DJT1109S -1 | 130±50gf | 500,000 CYCLE |
| DJT1109S -2 | 160±50gf | 100,000 CYCLE |
| DJT1109S -3 | 250±50gf | 100,000 CYCLE |

| NO. | PART NAME | Q'TY | MATERIAL | SPEC | TREATMENT | REMARK |
|----------|-----------|-------------------------|-----------|-------|-------------|-----------------|
| DESIGN | CHECK | APPROVE | TRACE | SCALE | | |
| K.M.S | M.K.J | K.Y.I | | | 1 / 1 | |
| TITLE | | | | | | DJT1109S SERIES |
| | | | | | | TACT SWITCH |
| REV. No. | DATE | DESCRIPTION OF REVISION | SIGN APP. | | DRAWING NO. | |
| | | | | | DATE | 2007. 01. 04 |

(PQS-0701-03)



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1. General

- 1.1 Switch rating : DC 12V, 50mA
 1.2 Operation temperature range : -20°C ~ 70°C
 1.3 Preservative temperature range : -20°C ~ 80°C
 1.4 Appearance and dimensions : See outside drawing page
 1.5 Standard conditions : Unless otherwise specified, the test and measurements shall be carried out as follows :

Ambient temperature : 5 ~ 35°C

Relative humidity : 45 ~ 85%RH

Air pressure : 86 ~ 106kpa (860 ~ 1060mbar)

However, if doubt arises on the decision based on the measured values under the above-mentioned conditions, the following conditions shall be employed.

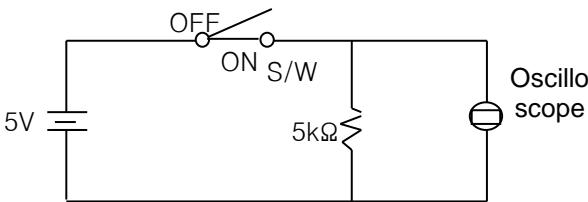
Ambient temperature : 20±2°C

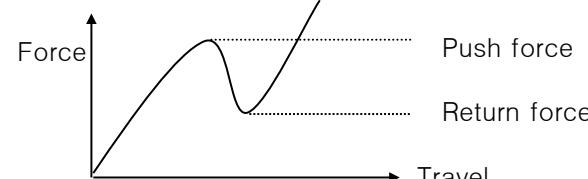
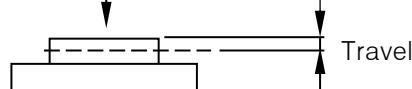
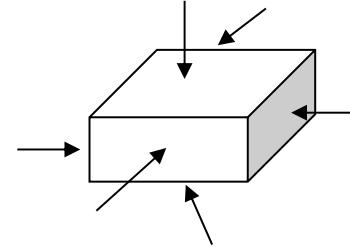
Relative humidity : 65±5%RH

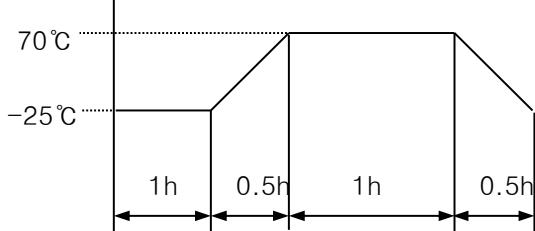
Air pressure : 86 ~ 106kpa (860 ~ 1060mbar)

2. Performance

2.1 Electrical characteristics

| NO. | ITEMS | TEST CONDITIONS | PERFORMANCE |
|-------|---------------------------------|--|-----------------------------|
| 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 potential across terminals and across terminals and frame for one minute. | 100MΩ Min. |
| 2.1.3 | Dielectric Withstanding Voltage | AC 250V (50Hz or 60Hz) shall be applied across terminals and across terminals and frame for one minute. | There shall be no breakdown |
| 2.1.4 | Bounce | <p>Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operation per sec.) bounce shall be tested at 'ON' and 'OFF'</p>  | 10msec Max. |

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| 2.2 Mechanical characteristics | | | | | | |
| NO. | ITEMS | TEST CONDITIONS | | | PERFORMANCE | |
| 2.2.1 | Operation Force | Push by recommended operating condition  | | | See outside drawing page | |
| 2.2.2 | Travel | Push by recommended operating condition $F = (\text{Operation force}) \times 2$  | | | 0.4 ±0.15 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 | Vibration Test | (1) Amplitude : 1.5mm (2) Sweep rate : 10-55-10Hz for 1 minute. (3) Sweep method : Logarithmic frequency sweep rate. (4) Vibration direction : X.Y.Z (3 directions). (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 : 50G (2) Cycles of test : 3 cycles each in 6 directions for a total 18 cycles.  | | | 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 (P.W.B : $t = 1.6$) Soldering temperature : $260 \pm 5^\circ\text{C}$ Soldering time : 5 ± 1 sec | | | No damage (Electrical and Mechanical) | |

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| 2.3 Climatic characteristics | | | | | | |
| NO. | ITEMS | TEST CONDITIONS | | | PERFORMANCE | |
| 2.3.1 | Cold test | (1) Temperature : $-25 \pm 2^\circ\text{C}$ (2) Duration of test : 96 hours (3) Take off a drop water (4) Standard conditions after test : 1 hour | | | Contact Resistance : 200mΩ max. No. 2.1.2 to 2.1.4 & 2.2.1 to 2.2.2 shall be satisfied. | |
| 2.3.2 | Heat test | (1) Temperature : $70 \pm 2^\circ\text{C}$ (2) Duration of test : 96 hours (3) Standard conditions after test : 1 hour | | | Contact Resistance : 200mΩ max. No. 2.1.2 to 2.1.4 & 2.2.1 to 2.2.2 shall be satisfied. | |
| 2.3.3 | Temperature Cycle | (1) Test cycles : 5 cycles (2) Standard conditions after test : 1 hour (3) 1 cycle  | | | Contact Resistance : 200mΩ max. No. 2.1.2 to 2.1.4 & 2.2.1 to 2.2.2 shall be satisfied. | |
| 2.3.4 | Humidity Test | (1) Temperature : $60 \pm 2^\circ\text{C}$ (2) Relative humidity : 90 ~ 95% (3) Duration of test : 96 hours (4) Take off a drop water (5) Standard conditions after test : 1 hour | | | Contact Resistance : 200mΩ max. No. 2.1.2 to 2.1.4 & 2.2.1 to 2.2.2 shall be satisfied. | |
| 2.3.5 | Operating Life Test | (1) DC 5V, 5mA Resistance load (2) Operation speed : 2 ~ 3 cycles/sec (3) Push force : Maximum value of operation force (4) Cycles of operation : See outside drawing page | | | Contact Resistance : 200mΩ max. Bounce : 20m sec max. Operating force : initial value $\pm 30\%$ No. 2.1.2 to 2.1.3 & 2.2.2 shall be satisfied. | |
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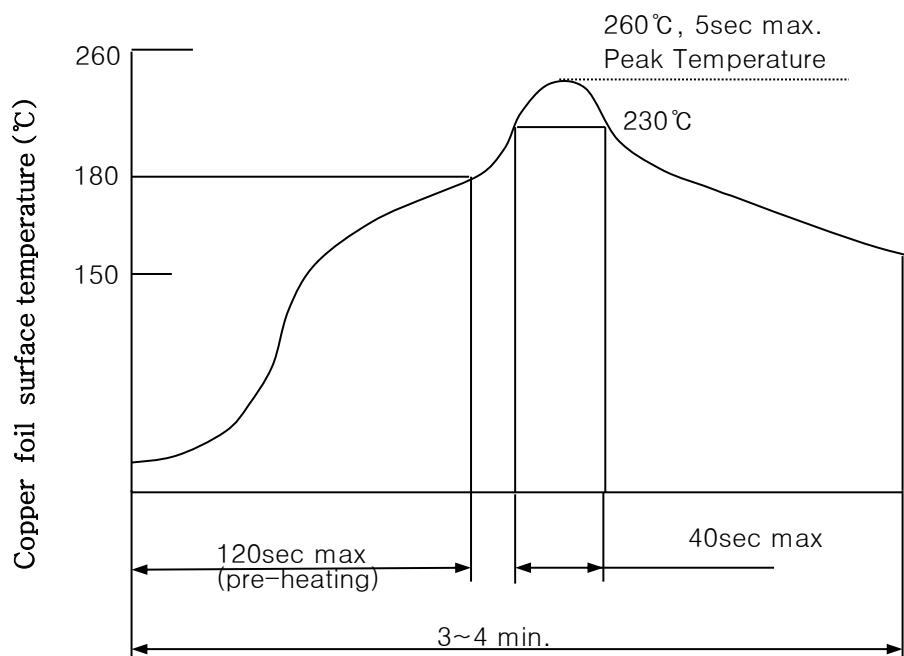
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3. Soldering

3.1 Reflow soldering conditions

Preheat : Temperature on the copper foil surface should reach 180°C, 120 sec(max)
after the P.W.B entered into the soldering equipment.

Soldering heat : Temperature on there copper foil surface should reach the peak temperature
of 260°C within 40 seconds after the P.W.B($t=1.6\text{mm}$) entered into soldering
heat zone.



Temperature Profile

| REEL PACKING SPECIFICATION | DATE | 2007.1.04 | DSN | CHK | APP |
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1. Scope

This specification covers the requirement of the tapping packaging for DJT 1109S standard of TACT switches.

2. Packaging Materials

| Item | Description |
|--------------|--|
| Package | Cartons |
| Reel | core : Formed ploystyrene sideboard : Ploystyrene |
| Carrier tape | Polystyrene |
| Cover | Polyester |

3. Packing Quantity

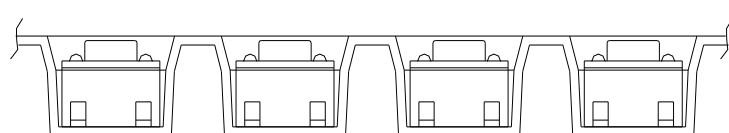
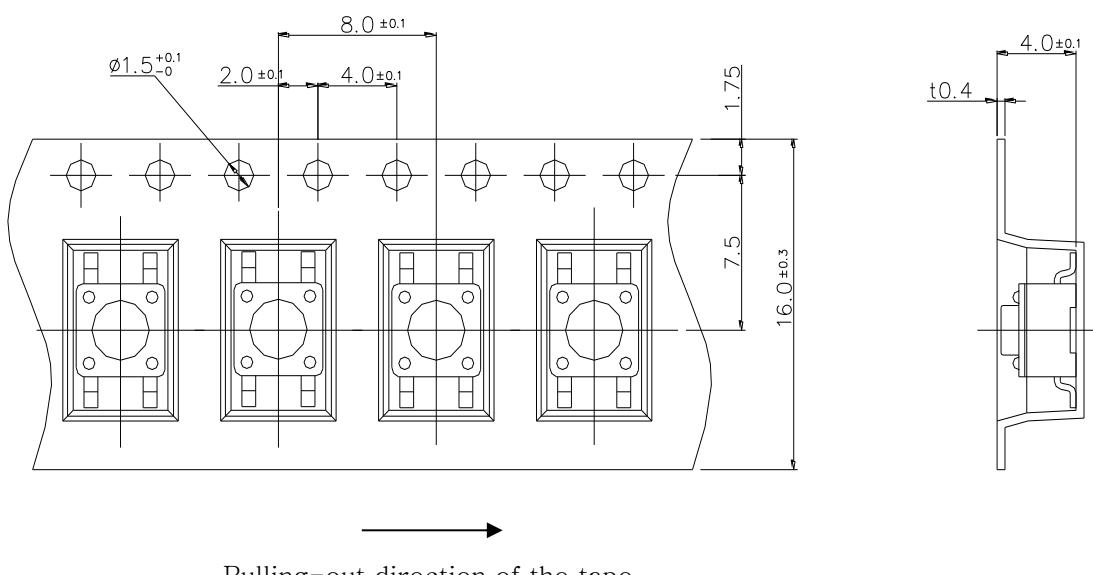
3.1 The number of the reels.

10 reels at maximum, which contain 20,000 switches shall be packed in a package.

3.2 The number of the switches.

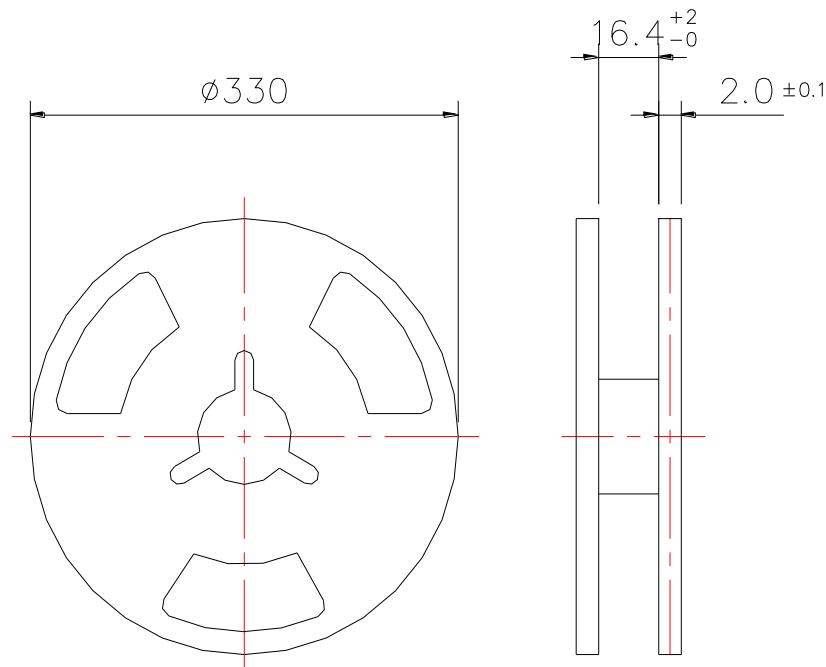
2,000 switches shall be packed in a reel.

4. Tape Form and Dimensions



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5. Reel Form and Dimensions



6. Packing Procedure

- 6.1 At the beginning of reeling, the end of the tape, 200mm or more, shall be empty and fit into the groove in the reel core.
- 6.2 After reeling, the end of the tape, 130 ± 4 mm, shall be empty and the tape edge shall cut in 45° . the cover tape shall be extended 250 ± 10 mm from the tape edge and fixed with tape
- 6.3 Total number of missing switches shall be less than 10 in one reel.
(Three consecutive switches may be missing)

7. Storage Condition

- 7.1 Storage environment : $-20^\circ\text{C} \sim +50^\circ\text{C}$, $20\% \sim 85\%$ RH.
(Storage in high temperature and high humidity shall be avoided)

8. Safety Keeping Condition

- 1) Please keep the received products under conditions of not high temperature, no high humidity and no direct-rays of the sun and no corrosive gases.
- 2) Our products are strongly recommended to use off within 3 months and are guaranteed the quality for 6 months of maximum period after receiving the products.
- 3) Please put some desiccants after opening off a vinyl pack in order not to enter the damp air and keep the products at the same place of the above-mentioned
- 4) Please be cautious not to give excessive load on the products.
- 5) Please be cautious not to keep the products with high pressure on the push buttons.