

# 0.55mm Height Low-profile (Surface Mount Type)





4.8×4.8mm with height of 0.55mm. Compact & low-profile.



### Typical Specifications

| Items                      | Specifications |
|----------------------------|----------------|
| Rating (max.)              | 50mA 12V DC    |
| Rating (min.)              | 10μA 1V DC     |
| Initial contact resistance | 100mΩ max.     |

### Product Line

**Detector** 

Push

Slide

**Rotary** 

**Encoders** 

**Power** Dual-in-line Package Type TACT Switch™

Sharp Feeling Soft Feeling Snap-in Type

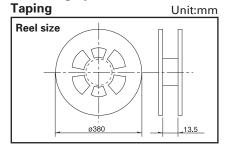
Surface

Type

**Mount Type** Radial

| Product No. Operating force ( |       | Operating direction | T           | Operating life  | Minimum order unit (pcs.) |        |  |
|-------------------------------|-------|---------------------|-------------|-----------------|---------------------------|--------|--|
|                               |       | Operating direction | Travel (mm) | (5mA 5V DC)     | Japan                     | Export |  |
| SKRBAGE010                    | 1.1N  |                     | 0.15        | 2,000,000cycles |                           |        |  |
| SKRBAAE010                    | 1.57N | Tannuah             |             | 1,000,000cycles | 10.000                    | 10.000 |  |
| SKRBACE010                    | 2.55N | Toppush             | 0.2         | 500,000cycles   | 10,000                    | 10,000 |  |
| SKRBAKE010                    | 3.5N  |                     |             | 200,000cycles   |                           |        |  |

## Packing Specifications

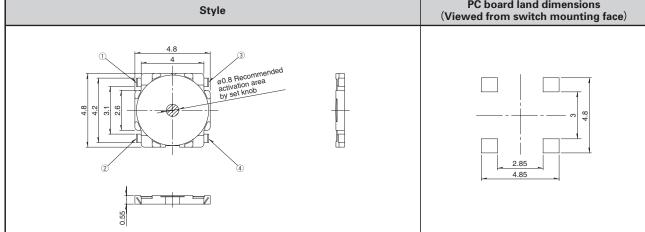


| Numl   | per of packages |                            | Export package     |                      |
|--------|-----------------|----------------------------|--------------------|----------------------|
| 1 reel | 1 case / Japan  | 1 case /<br>export packing | Tape width<br>(mm) | measurements<br>(mm) |
| 10,000 | 100,000         | 100,000                    | 12                 | 401 × 401 × 214      |

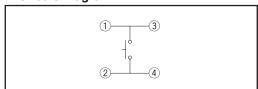
## Note

For reels of 330mm diameter, please inquire.

#### Dimensions Unit:mm PC board land dimensions Style (Viewed from switch mounting face)



## Circuit Diagram



### ■ List of Varieties

| Series  |            |               |                              |   |                                  |            | Sharp      | Feeling     | Туре       |            |            |              |             |  |
|---|------------|---------------|------------------------------|---|----------------------------------|------------|------------|-------------|------------|------------|------------|--------------|-------------|--|
| Photo   | Туре       |               |                              |   |                                  |            |            |             |            |            |            |              |             |  |
| Note  |            | Series        | SKQJ                         | SKQB  | SKSH                             | SKRW       | SKRM       | SKRB        | SKRR       | SKQG       | SKTC       | SKSK         | SKSD        |  |
| Water-proof   |            | Photo         |                              |   | <b></b>                          | <b>O</b>   |            |             |            | •          | <b></b>    | Q.           |             |  |
| Dust-proof  |            | Features      | _                            | _   |                                  | Low-       | profile    |             |            |            | D          | ouble action | uble action |  |
| Toppush   Gidepush  | W          | ater-proof    | _                            | •   | _                                | 0          | _          | _           | _          | _          | •          | _            | _           |  |
| Dimensions (mm)   | С          | Oust-proof    | •                            | •   | 0                                | 0          | 0          | 0           | 0          | 0          | •          | _            | _           |  |
| Sidepush  | Operatin   | Toppush       | _                            | _   | •                                | •          | •          | •           | •          | •          | •          | •            | •           |  |
| Dimensions (mm)   |            | n             | •                            | •   | _                                | _          | _          | _           | _          | _          | _          | _            | _           |  |
| D   7,85   11.9   2.9   7   2.2   3.2   3.9     H   7,3   11.3   0.35   0.4   0.55   0.6   0.8   0.62   0.6     Operation force coverage   2N-3N  |            | w             | 7.5                          | 11.5  | 3.3                              |            |            |             | 7.5        |            | 3.4        | 3.5          | 4.1         |  |
| H   7.3   11.3   0.35   0.4   0.55   0.6   0.8   0.62   0.6   |            | ns D          | 7.85                         | 11.9  | 2.9                              | 1 ⊔3./     | □4.5       | <u></u> 4.8 | 7          | ∐5.2       | 2.2        | 3.2          | 3.9         |  |
| N - 2N   2N - 3N - 4N   N -   | (11111)    | Н             | 7.3                          | 11.3  | 0.                               | 35         | 0.4        | 0.55        | 0.6        | 0.8        | 0.62       | 0            | .6          |  |
| Travel (mm)   0.25   0.3   0.15   0.15/0.2   0.25   |            |               | <b>1</b>                     |   |                                  |            |            |             |            | 1          |            |              |             |  |
| Travel (mm)   0.25   0.3   0.15   0.15/0.2   0.25   |            | /II           | <del>-</del>                 | ₹   | I                                |            | <u> </u>   | <b>T</b>    |            |            |            | **           |             |  |
| Ground terminal   -   |            | e 3N~4N       |                              |   |                                  |            |            |             |            | <b>———</b> |            | *            |             |  |
| Operating temperature range   -20°C to+90°C   -30°C to +85°C   -30°C to +85°C to +85°C   | т          | ravel (mm)    | 0.25                         | 0.3   | 0.                               | 15         | 0.15       | /0.2        | 0.:        | 25         |            | *            |             |  |
| Trange   To+70°C   To+90°C   To+90°C   To+85°C   To+8   | Gro        | und terminal  | _                            | _   | _                                | _          | _          | _           | _          | _          | _          | •            | •           |  |
| Life Cycle       SomA 12V DC       Life Cycle       SomA 12V DC       Life Cycle       SomA 12V DC       Life Cycle       SomA 12V DC       Dow AC To Cycle       Life Cycle       Li  | Operat     |               |                              |   |                                  |            | -30°C to   | +85℃        |            |            |            | _            |             |  |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | Aut        | omotive use   | _                            | •   | _                                | _          |            | •           | _          | 0          | _          | _            | _           |  |
|   | ı          | ife Cycle     | *3                           | *3  | <b>*</b> 2                       | <b>*</b> 2 | <b>*</b> 2 | <b>*</b> 2  | <b>*</b> 2 | *3         | <b>*</b> 2 | <b>*</b> 2   | <b>*</b> 2  |  |
|   |            |               |                              |   |                                  |            | 50         | mA 12V I    | DC         |            |            |              |             |  |
| Electrical performanceresistance100MΩ min. 100V DC for 1min.Voltage proof $250V AC for 1min.$ $100V AC for 1min.$ $100V AC for 1min.$ $100V AC for 1min.$ $100V AC for 1min.$ UrabilityVibration10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2hours respectivelyShall be in accordance with individual specifications.Cold $-30 \pm 2^{\circ}C$ for 96h $-30 \pm 2^{\circ}C$ for 96hDry heat $80 \pm 2^{\circ}C$ for 96h $80 \pm 2^{\circ}C$ for 96hDamp heat $60 \pm 2^{\circ}C$ , $60 \pm 2^{\circ}C$ , $90 \pm 2^{\circ}C$ , $90$   |            |               |                              |   |                                  |            | 10         | Ο μ Α 1V D  | С          |            |            |              |             |  |
| performanceVoltage proof250V AC for 1min.100V AC for 1min.250V AC for 1min.100V AC for 1min.100V AC for 1min.DurabilityVibration10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2hours respectivelyLifetimeShall be in accordance with individual specifications.Environmental performanceCold $-30 \pm 2^{\circ}C$ for 96h $-40 \pm 2^{\circ}C$ for 96hDry heat $80 \pm 2^{\circ}C$ for 96h $80 \pm 2^{\circ}C$ for 96hDamp heat $60 \pm 2^{\circ}C$ , $90 \pm 2^{\circ}C$ , for 96hDamp heat $60 \pm 2^{\circ}C$ , $90 \pm 2^{\circ}C$ ,  | Electrical |               | 100MΩ min. 100V DC for 1min. |   |                                  |            |            |             |            |            |            |              |             |  |
| Durability  Lifetime  Cold $-30\pm2^{\circ}C$ for 96h  Cold $-30\pm2^{\circ}C$ for 96h  Dry heat  Damp heat  Shall be in accordance with individual specifications. $-30\pm2^{\circ}C$ for 96h   |            | Voltage proof |                              |   |                                  |            |            |             |            |            |            |              |             |  |
| LifetimeShall be in accordance with individual specifications.Environmental performanceCold $-30 \pm 2^{\circ}C$ for 96h $-40 \pm 2^{\circ}C$ for 96hDry heat $80 \pm 2^{\circ}C$ for 96h $80 \pm 2^{\circ}C$ for 96hDamp heat $60 \pm 2^{\circ}C$ , $90 \pm 2^{\circ}$   |            | Vibration     |                              | 10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2hours respectively |                                  |            |            |             |            |            |            |              |             |  |
| Environmental performance   Dry heat   $80 \pm 2^{\circ}$ C   $90 \pm 2^{\circ}$ C   $60 \pm 2^{\circ}$ C   $60 \pm 2^{\circ}$ C   $60 \pm 2^{\circ}$ C   $90 $ |            |               |                              |   | S.                               |            |            |             |            |            |            |              |             |  |
| performance Dry heat for 96h for 96h $\frac{80\pm2\text{C}}{00\pm2\text{C}}$ for 96h $\frac{80\pm2\text{C}}{00\pm2\text{C}}$ for 96h $\frac{60\pm2\text{C}}{00\pm2\text{C}}$ go to 95%RH for 96h $\frac{60\pm2\text{C}}{00\pm2\text{C}}$ go to 95%RH for 96h  |            |               | 96h                          |   |                                  |            |            |             |            |            |            |              |             |  |
| Damp heat   90 to 95%RH   90 to 95%RH   60±2°C, 90 to 95%RH for 96h   |            | Dry heat      |                              |   |                                  |            |            |             |            |            |            |              |             |  |
|   |            | Damp heat     | 90 to 95%RH                  | 90 to 95%RH   | RH │ 60±2°C, 90 to 95%RH for 96h |            |            |             |            |            |            |              |             |  |
| Page         237         239         245         246         247         248         249         250         252         253         254  |            | Page          |                              |   | 245                              | 246        | 247        | 248         | 249        | 250        | 252        | 253          | 254         |  |

W: Width. The most outer dimension excluding terminal portion.

D: Depth. The most outer dimension excluding terminal portion.

H: Height. The minimum dimension if there are variances.

 ■ TACT Switch<sup>TM</sup> Soldering Conditions 288 ■ TACT Switch<sup>™</sup> Cautions · · · · · · 289

### Notes

- 1. The automotive operating temperature range to be individually discussed upon request.
- 2. indicates applicability to all products in the series, while O indicates applicability to some products in the series.
- 3.  $\times$  See the relevant pages for respective product descriptions



**Detector** 

Push

Slide

Rotary **Encoders** 

Power

Dual-in-line Package Type

TACT Switch™

Sharp Feeling Soft **Feeling** Snap-in Type

Radial Type

Surface **Mount Type** 

## TACT Switch™ Soldering Conditions

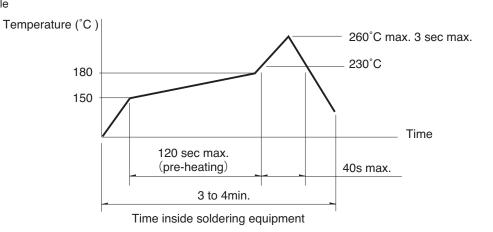
### Condition for Reflow

Available for Surface Mount Type.

- 1. Heating method: Double heating method with infrared heater.
- 2. Temperature measurement: Thermocouple 0.1 to 0.2  $\phi$  CA (K) or CC (T) at solder joints (copper foil surface) .

A heat resistive tape should be used to fix thermocouple.

3. Temperature profile



Detector

Push

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Rotary

**Encoders** 

**Power** 

Dual-in-line Package Type

TACT Switch™

Sharp Feeling Soft

**Feeling** Snap-in Type Surface Mount Type

Radial Type

**Notes** 

- 1. The above temperature shall be measured of the top of switch. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the material, size, thickness of PC boards and others. The above-stated conditions shall also apply to switch surface temperatures.
- 2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

### Conditions for Auto-dip Available for Snap-in Type and Radial Type

| Items                  | Condition   |  |  |
|------------------------|---|--|--|
| Flux built-up          | Mounting surface should not be exposed to fluk                      |  |  |
| Preheating temperature | Ambient temperature of the soldered surface of PC board. 100°C max. |  |  |
| Preheating time        | 60s max.  |  |  |
| Soldering temperature  | 260°C max.  |  |  |
| Duration of immersion  | 5s max.   |  |  |
| Number of soldering    | 2times max.   |  |  |

#### SKHH、SKPD Series

| Items                  | Condition   |
|------------------------|---|
| Flux built-up          | Mounting surface should not be exposed to fluk                      |
| Preheating temperature | Ambient temperature of the soldered surface of PC board. 110°C max. |
| Preheating time        | 60s max.  |
| Soldering temperature  | 260°C max.  |
| Duration of immersion  | 5s max.   |
| Number of soldering    | 2times max.   |

#### SKOJ. SKOK. SKEG Series

| ShQJ, ShQh, ShEG Series |   |  |  |  |
|-------------------------|---|--|--|--|
| Items                   | Condition   |  |  |  |
| Flux built-up           | Mounting surface should not be exposed to fluk                      |  |  |  |
| Preheating temperature  | Ambient temperature of the soldered surface of PC board. 100°C max. |  |  |  |
| Preheating time         | 45s max.  |  |  |  |
| Soldering temperature   | 255℃ max.   |  |  |  |
| Duration of immersion   | 5s max.   |  |  |  |
| Number of soldering     | 2times max.   |  |  |  |

### Manual Soldering (Except SKRT Series)

| Items                      | Condition  |
|----------------------------|------------|
| Soldering temperature      | 350°C max. |
| Duration of soldering      | 3s max.    |
| Capacity of soldering iron | 60W max.   |

### SKHH、SKHW、SKRG、SKPD Series

| Items                      | Condition  |
|----------------------------|------------|
| Soldering temperature      | 360°C max. |
| Duration of soldering      | 3s max.    |
| Capacity of soldering iron | 60W max.   |

### SKQJ、SKQK、SKEG Series

| Items                      | Condition  |
|----------------------------|------------|
| Soldering temperature      | 350°C max. |
| Duration of soldering      | 3s max.    |
| Capacity of soldering iron | 20W max.   |

## **Notes**

- 1. Consult with us for availability of TACT Switch<sup>™</sup> washing.
- 2. Prevent flux penetration from the top side of the TACT Switch  $^{\text{TM}}$ .
- 3. Switch terminals and a PC board should not be coated with flux prior to soldering.
- The second soldering should be done after the switch is stable with normal temperature.
- 5. Use the flux with a specific gravity of min 0.81. (EC-19S-8 by TAMURA Corporation, or equivalents.)