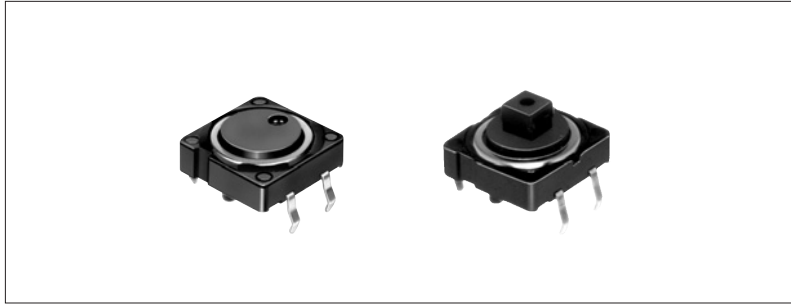


# 12×12mm TACT Switch (Snap-in)

SKHC Series

Joint stem & Flat stem with stable operation feeling.



## Features

- Snap-in type, which can be directly mounted onto PC board.
- Some of output terminals can be also used as jumper leads, thus making circuit arrangement easy.
- Standard knobs are available.

## Applications

- All types of audio products, business machines, communication equipment, measuring instruments, TV sets, video recorders, etc.

## Products Line

| Products No. | Operating force | Operating direction | Travel (mm) | Rating (max.) | Operating life (5mA 5V DC) | Initial contact resistance | Stem color | Variety    | Minimum packing unit (pcs.) | Drawing No. |
|--------------|-----------------|---------------------|-------------|---------------|----------------------------|----------------------------|------------|------------|-----------------------------|-------------|
| SKHCAEA010   | 0.74N           | Vertical            | 0.3         | 50mA<br>12VDC | 500,000cycles              | 100mΩ<br>max.              | Blue       | Joint stem | 1,000                       | 1           |
| SKHCAA010    | 1.27N           |                     |             |               | 1,000,000cycles            |                            | Black      |            |                             |             |
| SKHCACA010   | 2.55N           |                     |             |               | 500,000cycles              |                            | Dark gray  |            |                             |             |
| SKHCAFA010   | 0.74N           |                     |             |               | 500,000cycles              |                            | Blue       | Flat stem  |                             |             |
| SKHCABA010   | 1.27N           |                     |             |               | 1,000,000cycles            |                            | Black      |            |                             |             |
| SKHCADA010   | 2.55N           |                     |             |               | 500,000cycles              |                            | Dark gray  |            |                             |             |

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

Multi Control Devices

TACT

Sharp Feeling

Soft Feeling

Snap-in Type

Surface Mount Type

Radial Type

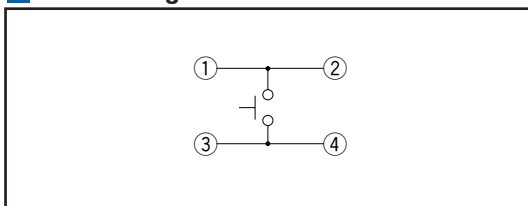
For detailed specifications, see P.413  
For soldering conditions, see P.414  
For standard knobs, see P.418

Dimensions

Unit : mm

| No. | Style                         | PC board mounting hole dimensions<br>(Viewed from switch mounting face) |
|-----|-------------------------------|---|
| 1   | <p><b>Joint stem type</b></p> |   |
| 2   | <p><b>Flat stem type</b></p>  |   |

Circuit Diagram



Note

Using a 1.6mm thick PC board is recommended.

- Power
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- Telephone-hook
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- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT**
- Sharp Feeling
- Soft Feeling
- Snap-in Type**
- Surface Mount Type
- Radial Type

## Products Specifications

| Items                       |                       | Series   | Sharp feeling type                | Soft feeling type                      |
|-----------------------------|-----------------------|--|-----------------------------------|--|
|                             |                       | -20°C to +70°C   |                                   |  |
| Operating temperature range |                       |  | -30°C to +85°C<br>SKRM / RW       | -30°C to +80°C<br>SKPG                 |
|                             |                       |  | -30°C to +90°C<br>SKRA / RG / RP  | -40°C to +90°C<br>SKPF / PL / PM / PN  |
| Rating (max.)               |                       |  | 50mA 12V DC<br>SKRP : 50mA 16V DC | 5mA 12V DC<br>SKPL/PM/PN : 50mA 16V DC |
| Rating (min.)               |                       | 10 $\mu$ A 1V DC   |                                   |  |
| Electrical performance      | Insulation resistance | 100M $\Omega$<br>SKEY/PD : 50M $\Omega$  |                                   |  |
|                             | Voltage proof         | 250V AC for 1 min.<br>SKRB/RH/RM/RR/EY/PD : 100V AC for 1min.  |                                   |  |
| Durability                  | 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 2 hours respectively |                                   |  |
|                             | Lifetime              | Shall be in accordance with individual specifications.   |                                   |  |
| Environmental performance   | Cold                  | -30 $\pm$ 2°C for 96h  |                                   |  |
|                             | Dry heat              | 80 $\pm$ 2°C for 96h   |                                   |  |
|                             | Damp heat             | 60 $\pm$ 2°C, 90 to 95%RH for 96h  |                                   |  |

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### Note

We can raise the working temperature range for in-vehicle applications upon request. Contact us if you have any requirements of this kind.

### Specifications of LED (SKHJ)

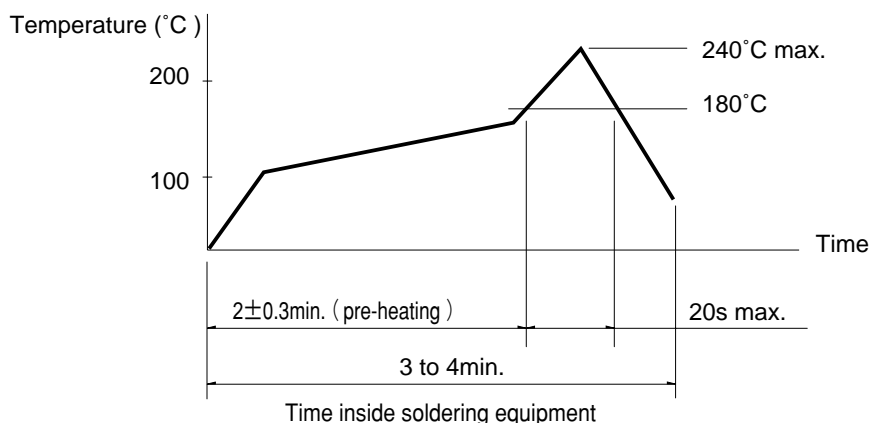
| Color of light              | Power dissipation | Forward pulse peak current | Forward current | Reverse voltage | Forward voltage     | Reverse current        | Peak emission wave length      | Spectral line half width         | Luminous intensity  |
|-----------------------------|-------------------|----------------------------|-----------------|-----------------|---------------------|------------------------|--------------------------------|----------------------------------|---------------------|
|                             | P (mW)            | IFP (mA)                   | IFDC (mA)       | VR (V)          | VF (V)<br>IF=10mA   | IR ( $\mu$ A)<br>VR=4V | $\lambda$ peak (nm)<br>IF=10mA | $\Delta \lambda$ (nm)<br>IF=10mA | IV (mcd)<br>IF=10mA |
| Red                         | 40                | 80                         | 15              | 4               | 2.7 max.<br>2.05TYP | 5 max.                 | 700 TYP                        | 100 TYP                          | 0.4min.<br>1.0 TYP  |
| Pure green                  |                   |                            |                 |                 | 2.7 max.<br>2.0 TYP | 10 max.                | 555 TYP                        | 20 TYP                           | 0.8min.<br>2.0 TYP  |
| Amber                       |                   |                            |                 |                 |                     |                        | 590 TYP                        | 30 TYP                           | 0.4min.<br>1.0 TYP  |
| Orange<br>(High brightness) |                   |                            |                 | 630 TYP         | 40 TYP              | 1.5min.<br>4.0 TYP     |                                |                                  |                     |
| Green<br>(High brightness)  |                   |                            |                 | 4               | 2.7 max.<br>2.05TYP | 565 TYP                | 30 TYP                         | 2.0min.<br>5.0 TYP               |                     |

## Soldering Conditions

### Condition for Reflow

Available for Surface Mount Type. (Except SKHM Series)

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 φ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



### Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures. (Except a part of Variety SKRM, SKRR Series)
2. Soldering conditions differ depending on reflow soldering machines. You are requested to verify the soldering conditions thoroughly beforehand.
3. Ask us for the specifications of lead-free products.

### Conditions for Auto-dip

Available for Snap-in Type and Radial Type

| Items                   | Condition  |
|-------------------------|--|
| Flux built-up           | Mounting surface should not be coated with flux                        |
| Preheating temperature  | Ambient temperature of the soldered surface of PC board.<br>100°C max. |
| Preheating time         | 45s max.   |
| Soldering temperature   | 255°C max.   |
| Continuous dipping time | 5s max.  |
| Number of soldering     | 2times max.  |

### Notes

1. Consult with us for TACT switch washing conditions.
2. Prevent flux penetration from the top side of the TACT switch.
3. Switch terminals and a PC board should not be coated with flux prior to soldering.
4. The second soldering should be done after the switch returns to normal temperature.
5. Use the flux with a specific gravity of at least 0.83. (MH-820V or CF220V by TAMURA Corporation, or their equivalents.)

### Manual Soldering

Available for Manual Soldering Type

| Items                     | Condition  |
|---------------------------|------------|
| Soldering temperature     | 350°C max. |
| Continuous soldering time | 3s max.    |

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## Products Line of Knob

Unit : mm

| Applicable model                              | Dimensions | Variety                                 |  | Label dimensions (Unit:mm)   |               |
|---|------------|---|--|--|---------------|
|   |            | Color                                   | Model  |  |               |
| SKHH<br>Applicable to joint stem type         |            | Keytop                                  |  |  |               |
|   |            | Red<br>Blue<br>Ivory<br>Black<br>Yellow | SK2AA00410<br>SK2AA00420<br>SK2AA00430<br>SK2AA00440<br>SK2AA00450 |  |               |
| SKHC<br>SKQE<br>Applicable to joint stem type |            | Cap                                     |  |  |               |
|   |            | Clear                                   | SK2AA00510   |  |               |
|   |            | Keytop                                  |  | Keytop + Cap   | Thickness 0.1 |
|   |            | Red<br>Blue<br>Ivory<br>Black           | SK2AA00010<br>SK2AA00020<br>SK2AA00030<br>SK2AA00040               | SK2AA00060<br>SK2AA00070<br>SK2AA00080<br>SK2AA00090               |               |
| SKHJ  |            | Cap                                     |  |  |               |
|   |            | Clear                                   | SK2AA00520   |  |               |
|   |            | Keytop                                  |  | Keytop + Cap   | Thickness 0.1 |
|   |            | Red<br>Blue<br>Ivory<br>Black<br>Yellow | SK2AA00210<br>SK2AA00220<br>SK2AA00230<br>SK2AA00240<br>SK2AA00250 | SK2AA00260<br>SK2AA00270<br>SK2AA00280<br>SK2AA00290<br>SK2AA00300 |               |
| SKEG<br>Applicable to joint stem type         |            | Cap                                     |  |  |               |
|   |            | Clear                                   | SK2AA00540   |  |               |
|   |            | Keytop                                  |  | Keytop + Cap   | Thickness 0.1 |
|   |            | Red<br>Blue<br>Ivory<br>Black<br>Yellow | SK2AA00310<br>SK2AA00320<br>SK2AA00330<br>SK2AA00340<br>SK2AA00350 | SK2AA00360<br>SK2AA00370<br>SK2AA00380<br>SK2AA00390<br>SK2AA00400 |               |

### Notes

1. The knob will be delivered with the switch, unmounted.
2. The label is not included.
3. For SK2AA00010 to SK2AA00100 type, check its mounting direction.

