

5.2×5.2mm Low-profile TACT Switch (SMD)

SKQG Series

Two types, 0.8mm height without stem or 1.5mm height with stem.



Car Use

Features

- 5.2×5.2mm dimension suitable for high density mounting.
- Much thinner and lighter than conventional products.
- Flat type with 0.8mm height in pursuit, for thin design. "With stem" type in pursuit for easier use.
- Contact sealed construction offers a highly reliable switch.
- Reflow solderable.
- Packaged with a 12mm wide embossed taping.

Applications

- For operating various electronic devices such as audio devices, video recorders, communication devices, cameras, automotive units, electric home appliances, etc.

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

Products Line

| Products No. | Operating force | Operating direction | Travel (mm) | Rating (max.) | Operating life (5mA 5V DC) | Initial contact resistance | Variety | Drawing No. |
|--------------|-----------------|---------------------|-------------|----------------|----------------------------|----------------------------|--------------|-------------|
| SKQGAE010 | 0.98N | Vertical | 0.25 | 50mA 12V DC | 500,000cycles | 100mΩ max. | Without stem | 1 |
| SKQGAAE010 | 1.57N | | | | 50,000cycles | | | |
| SKQGACE010 | 2.55N | | | | 500,000cycles | | | |
| SKQGAFE010 | 0.98N | | | | 100,000cycles | | With stem | 2 |
| SKQGABE010 | 1.57N | | | | | | | |
| SKQGADE010 | 2.55N | | | | | | | |
| SKQGAKE010 | 3.43N | | | | | | | |

For detailed specifications, see P.413

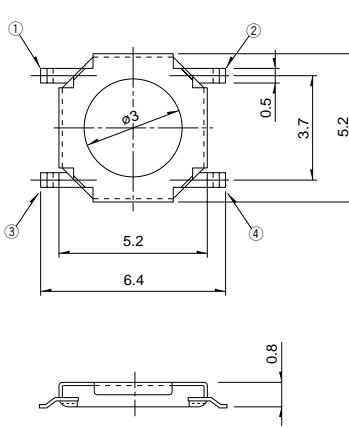
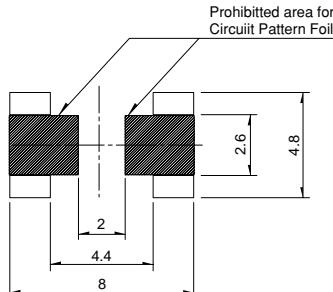
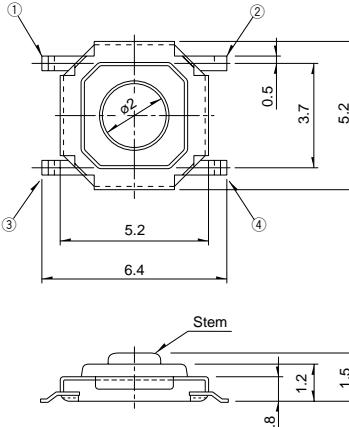
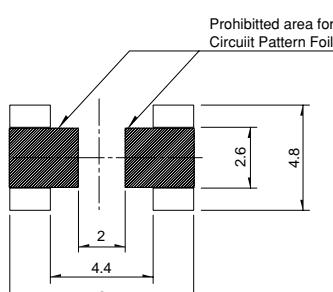
For soldering conditions, see P.414

For specifications for the taping package, see P.416

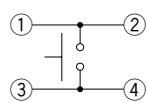
| | |
|---------------------------|--|
| Power | |
| Push | |
| Slide | |
| Rotary | |
| Encoders | |
| Jog Shuttle | |
| Telephone -hook | |
| Detector | |
| Vibration Sensors | |
| Dual-in-line Package Type | |
| Multi Control Devices | |
| TACT | |
| Sharp Feeling | |
| Soft Feeling | |
| Snap-in Type | |
| Surface Mount Type | |
| Radial Type | |

Dimensions

Unit : mm

| No. | Style | PC board land dimensions (Viewed from switch mounting face) |
|-----|---|--|
| 1 | Without stem type  |  |
| 2 | With stem type  |  |

Circuit Diagram



Products Specifications

| Items | Series | Sharp feeling type | Soft feeling type |
|-----------------------------|----------------------------------|--|--|
| Operating temperature range | -20°C to +70°C | | |
| | -30°C to +85°C SKRM / RW | | -30°C to +80°C SKPG |
| | -30°C to +90°C SKRA / RG / RP | | -40°C to +90°C SKPF / PL / PM / PN |
| Rating (max.) | | 50mA 12V DC SKRP : 50mA 16V DC | 5mA 12V DC SKPL/PM/PN : 50mA 16V DC |
| Rating (min.) | | 10 μ A 1V DC | |
| Electrical performance | Insulation resistance | 100M Ω SKEY/PD : 50M Ω | |
| | Voltage proof | 250V AC for 1 min. 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±2°C for 96h | |
| | Dry heat | 80±2°C for 96h | |
| | Damp heat | 60±2°C, 90 to 95%RH for 96h | |

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 P (mW) | Forward pulse peak current IFP (mA) | Forward current IFDC (mA) | Reverse voltage VR (V) | Forward voltage VF (V) IF=10mA | Reverse current IR (μ A) VR=4V | Peak emission wave length λ peak (nm) IF=10mA | Spectral line half width $\Delta \lambda$ (nm) IF=10mA | Luminous intensity IV (mcd) IF=10mA |
|-----------------------------|-----------------------------|--|------------------------------|---------------------------|--------------------------------------|---|---|--|---|
| Red | 40 | 80 | 15 | 4 | 2.7 max. 2.05TYP | 5 max. | 700 TYP | 100 TYP | 0.4min. 1.0 TYP |
| Pure green | | | | | | | 555 TYP | 20 TYP | 0.8min. 2.0 TYP |
| Amber | | | | | | | 590 TYP | 30 TYP | 0.4min. 1.0 TYP |
| Orange (High brightness) | | | | 3 | 2.7 max. 2.0 TYP | 10 max. | 630 TYP | 40 TYP | 1.5min. 4.0 TYP |
| Green (High brightness) | | | | | | | 565 TYP | 30 TYP | 2.0min. 5.0 TYP |

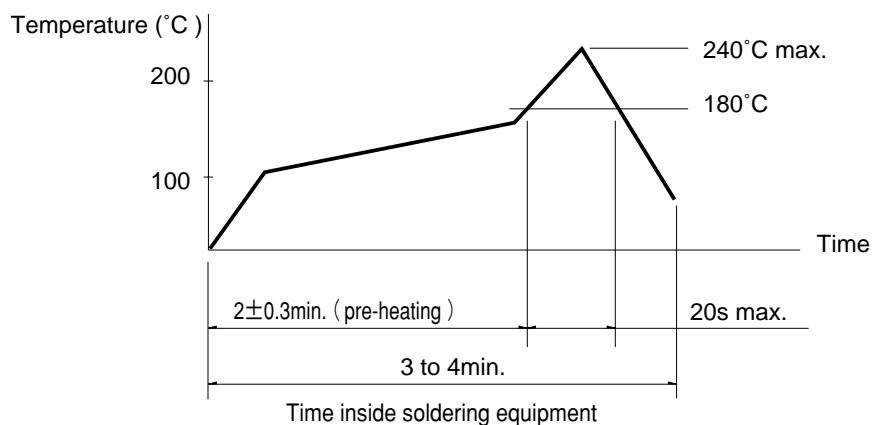
Sharp Feeling
Soft Feeling
Snap-in Type
Surface Mount Type
Radial Type

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. 100°C max. |
| Preheating time | 45s max. |
| Soldering temperature | 255°C max. |
| Continuous dipping time | 5s max. |
| Number of soldering | 2times max. |

Manual Soldering

Available for Manual Soldering Type

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

Specification of Embossed Taping Package

Taping Packaging for Auto-insertion

| Reel Size | Unit : mm | |
|---------------------|--|----------|
| Paper Reel | Applicable Series | W |
| | SKHM, SKHU, SKQG SKQL, SKQM, SKQR SKQY, SKRB, SKRE SKRAAA, SKRAAB | 12.4 |
| | SKQT, SKRH SKRAAC, SKRAAF SKPG, SKPN | 16.4 |
| | SKQUBA, SKQUDB | 32.4 |
| Plastic Reel | Applicable Series | W |
| | SKRK, SKRM SKRN, SKRP SKRT, SKPM SKRW | 13.5 |
| | SKRR | 17.5 |

| | Unit : mm | | |
|----------------------------------|--|---|-----------------|
| | Applicable series | Qty / reel (pcs.) (Minimum packing unit) | Tape dimensions |
| Power | SKQM, SKPMAM SKPMAN, SKPMAP SKPMAQ | 2,000 | |
| Push | SKPMAR, SKPMAS SKPMAT | 2,500 | |
| Slide | SKHM, SKHU SKQY, SKRT SKRAAA, SKRAAB | 3,000 | |
| Rotary | SKQG | 5,000 (Without stem type) 4,000 (With stem type) | |
| Encoders | SKRP | 4,000 | |
| Jog Shuttle | SKRKAE, SKRKAH | 4,500 | |
| Telephone -hook | SKQR, SKRB SKRM, SKRW | 10,000 | |
| Detector | SKRE, SKRN, SKRKAG | 5,000 | |
| Vibration Sensors | SKQL | 3,000 | |
| Dual-in-line Package Type | SKPG | 1,200 | |
| Multi Control Devices | SKRH | 1,300 | |
| TACT | SKRAAC, SKRAAF | 1,400 | |
| Sharp Feeling | SKQT | 3,000 | |
| Soft Feeling | SKRR | 7,000 | |
| Snap-in Type | SKPN | 1,100 | |
| Surface Mount Type | SKQUBA | 750 | |
| Radial Type | SKQUDB | 600 | |

Note

Consult with us for a ϕ 330 mm diameter reel.