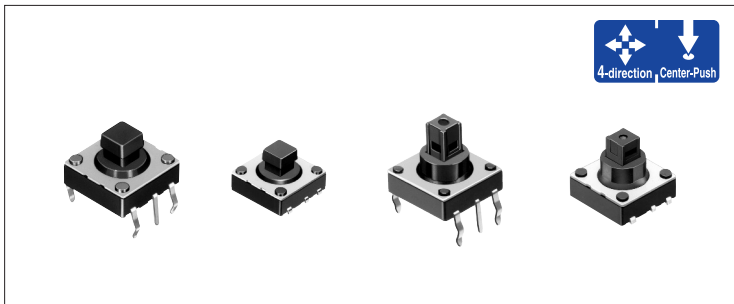


Multi Control Device TACT Switch™ 4-direction with Center-push Function (SMD & Snap-in Type)

SKQU Series



10×10mm size with sharp click feeling.



Multi Control Devices

Product Line

4-directional Type

| Product No. | Operating force | | Travel (mm) | | Rating (max.) | Rating (min.) | Operating life (5mA 5V DC) | Initial contact resistance | Variety | Minimum order unit (pcs.) | Drawing No. |
|-------------|-----------------|-------------|-------------|-------------|----------------|---------------|---------------------------------------|----------------------------|-----------------------|---------------------------|-------------|
| | 4-direction | Center-push | 4-direction | Center-push | | | | | | | |
| SKQUAAA010 | 1.57N | — | 0.35 | — | 50mA 12V DC | 10μA 1V DC | 50,000cycles for each direction | 500mΩ max. | Snap-in type | 1,000 | 1 |
| SKQUBAE010 | | | | | | | | | Surface mount type | 3,000 | 2 |

With Center-push Type

| Product No. | Operating force | | Travel (mm) | | Rating (max.) | Rating (max.) | Operating life (5mA 5V DC) | Initial contact resistance | Variety | Minimum order unit (pcs.) | Drawing No. |
|-------------|-----------------|-------------|-------------|-------------|----------------|---------------|--|----------------------------|-----------------------|---------------------------|-------------|
| | 4-direction | Center-push | 4-direction | Center-push | | | | | | | |
| SKQUCAA010 | 1.57N | 3.14N | 0.4 | 0.2 | 50mA 12V DC | 10μA 1V DC | 100,000cycles for each direction | 500mΩ max. | Snap-in type | 1,000 | 3 |
| SKQUDBE010 | | | | | | | | | Surface mount type | 2,400 | 4 |

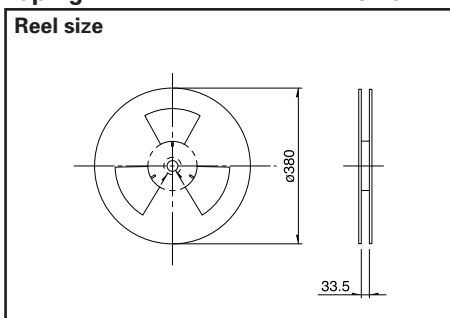
Variable Resistor Type

Switch Type

Packing Specifications

Taping

Unit:mm



| Series | Number of packages (pcs.) | | | Tape width (mm) | Export package measurements (mm) |
|--------|---------------------------|---------------|------------------------|-----------------|----------------------------------|
| | 1 reel | 1 case /Japan | 1 case /export packing | | |
| SKQUBA | 750 | 3,000 | 3,000 | 32 | 401×401×214 |
| SKQUDB | 600 | 2,400 | 2,400 | | |

Bulk

| Product No. | Number of packages (pcs.) | | Export package measurements (mm) |
|-------------|---------------------------|-----------------------|----------------------------------|
| | 1 case /Japan | 1 case/export packing | |
| SKQUAA | 4,000 | 12,000 | 309×476×347 |
| SKQUCA | | | |

Notes

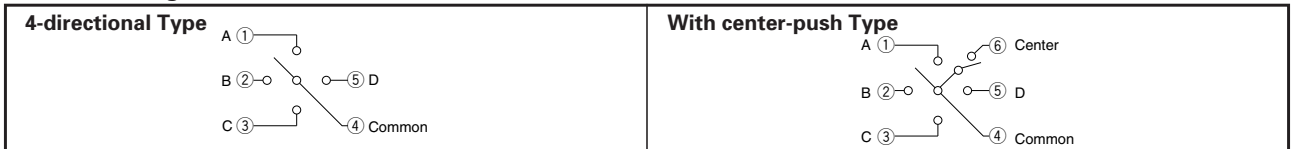
1. For SKQUAA, and SKQUBA models, the 4-directional operating force and travel are measured 0.9mm below the top of the stem.
2. For SKQUCA models, the 4-directional operating force and travel are measured 2.9mm below the top of the stem.
3. For SKQUDB models, the 4-directional operating force and travel are measured 1.5mm below the top of the stem.
4. Please place purchase orders for taping products per minimum package units (1 reel or 1 case).

Refer to P.495 for soldering conditions.










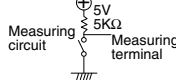
| Dimensions (4-directional Type) | | | Unit:mm |
|---------------------------------|-------|-------|--|
| No. | Photo | Style | PC board mounting hole dimensions (Viewed from switch mounting face) |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

Note
 Thickness of the printed wiring boards in Figures 1 and 3 is 1.6mm.

Circuit Diagram



List of Varieties

| Items | | Series | Switch type | | | | | |
|---------------------------------------|--|--|--|--------|---|---|---|---|
| | | SKQU | | | SSAF | SRBE | SLLB | SLLB5 Small type |
| | | SKQUAA/SKQUBA | SKQUCA | SKQUDB | | | | |
| Photo | |  | | |  |  |  |  |
| Function | |  | | |  |  |  | |
| Dimensions (typical value) (mm) | W | 10 | | | 10.85 | 8.05 | 11.8 | 9.5 |
| | D | | | | | 11 | 11.4 | 8.8 |
| | H | 7.1 | 10 | 8.6 | 3 | 3.17 | 3 | 2.2 |
| Outlined specifications | Number of operating shafts | Single-shaft | | | | | | |
| | Shaft material | Resin | | | | | | |
| | Directional resolution | 4-direction | | | 8-contact | — | 2-direction | |
| | Directional operating feeling | With | | | Without | With | Without | |
| | Lever return mechanism | With | | | Without | Without | With | |
| | Center-push switch | With/Without | | | With | | With/ Without | With |
| Encoder | Without | | | | With | | Without | |
| Operating temperature range | | -30°C to +85°C | | | -10°C to +60°C | | | |
| Automotive use | | — | | | | | | |
| Rating (max.) (Resistive load) | | 50mA 12V DC | | | 20mA 5V DC | 1mA 5V DC | 10mA 5V DC | |
| Electrical performance | Output voltage | — | | | 1V max. at 1mA 5V DC (Resistive load) | |  | |
| | Directional resolution | 4-direction | | | 8-contact | — | 2-direction | |
| | Insulation resistance | 100MΩ min. 100V DC | | | 10MΩ min. 100V DC | 50MΩ min. 50V DC | 100MΩ min. 100V DC | |
| | Voltage proof | 250V AC for 1min. | | | 100V AC for 1min. | 50V AC for 1min. | 100V AC for 1min. | |
| | Directional operating force | 1.57 ^{+0.49} _{-0.59} N | 1.57 ^{+0.39} _{-0.69} N | | 0.5N ^{+0.5} _{-0.95} N | — | 0.65±0.3N | |
| Mechanical performance | Push operating force | — | 3.14±0.59N | | 2.5 ^{+0.7} _{-0.6} N | 3.5±1.5N | 2±1N | 2.5±1N |
| | Encoder detent torque | — | | | | 3±2mN·m | | — |
| | Terminal strength | — | | | | | | 3N for 1min. |
| | Actuator strength | Pushing direction | — | | | 50N | | |
| Operating direction | | — | | | 50N | — | 10N | |
| Endurance | 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 | | | | | | |
| | Operating life without load | — | | | | | | 100,000cycles |
| | Operating life with load (at rated load) | — | | | | | | |
| Environmental performance | Cold | -30±2°C for 96h | | | -40±2°C for 96h | | -20±2°C for 96h | |
| | Dry heat | 80±2°C for 96h | | | 85±2°C for 96h | | | |
| | Damp heat | 60±2°C, 90 to 95%RH for 96h | | | 40±2°C, 90 to 95%RH for 96h | | | |
| Soldering | Manual soldering | 350°C max. 3s max. | | | 350±10°C 4 ⁺ s | 350±5°C 3s max. | | |
| | Dip soldering | 260°C max. 5s max. (SKQUAA,CA) | | | — | | | |
| | Reflow soldering | Please see P.495 (SKQUBA,DB) | | | Please see P.495 | | | |
| Page | | 485 | | | 487 | 489 | 491 | 493 |

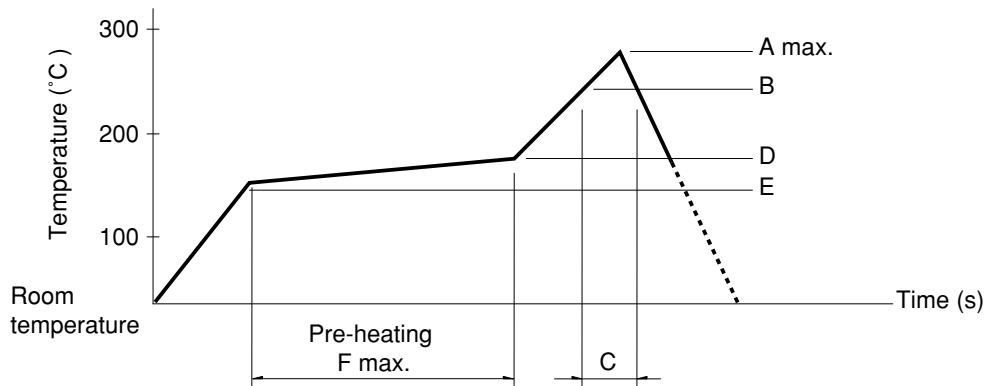
Multi Control
DevicesVariable
Resistor TypeSwitch
Type

- Switch Type Multi Control Devices Soldering Conditions495
- Switch Type Multi Control Devices Cautions496

Soldering Conditions

Example of Reflow Soldering Condition

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 solder joints copper foil surface). A heat resistive tape should be used to fix thermocouple.
3. Temperature profile



| Series (Reflow type) | A (°C) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|-------------------------------|-------------------|--------|-------|--------|--------|-------|
| RKJXS | 260 | 230 | 40 | 150 | 150 | 120 |
| SLLB, SLLB5 | 240 | | 20 | | | |
| SKRV/SKRH/SKQUBA,DB/SSAF/SRBE | 260 | | 40 | 180 | | |

Notes

1. The above temperature shall be measured 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 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.

Multi Control Devices

Variable Resistor Type

Switch Type