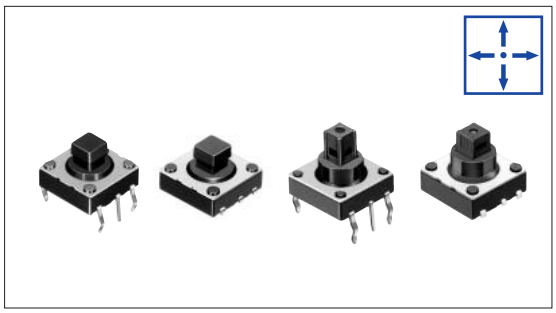
4-directional Type with Center Push (Surface Mount Device & Snap-in)

SKQU Series

RoHS applicable

Compact 10mm square type provides compound actions of 4-directional and center push.



Features

- A sharp click feel with tactile feedback characteristic.
- The stem has a joint shape which allows a knob to be attached on.
- Two types are available: snap-in type allowing automatic flow soldering. Surface Mount Device type allowing reflow soldering.
- Surface mount type products are packaged with a 32mm width embossed taping.

Applications

- Cursor operations for devices requiring graphic input
- Adjustments of TVs, video recorders, etc.
- Adjustment of audio devices such as equalizers
- Operations of various multi-functional electronic equipment

Products Line

4-directional type

Products No.	Operating force (N)		Travel (mm)		Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Variety	Minimum packing unit (pcs.) ※	Drawing No.
	4-direction	Center push	4-direction	Center push							
SKQUAAA010	1.57	—	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	750	2

With center push type

Products No.	Operating force (N)		Travel (mm)		Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Variety	Minimum packing unit (pcs.) ※	Drawing No.
	4-direction	Center push	4-direction	Center push							
SKQUCAA010	1.57	3.14	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	600	4

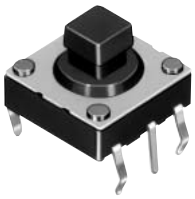
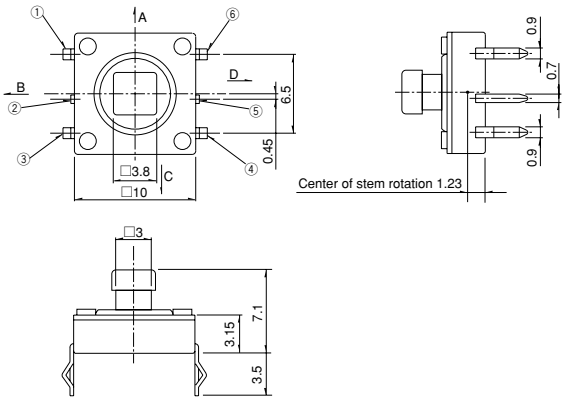
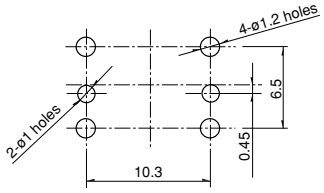
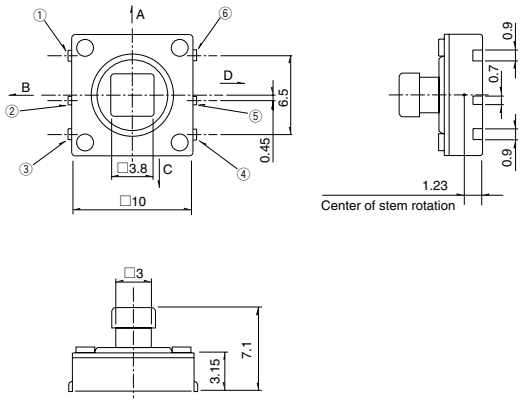
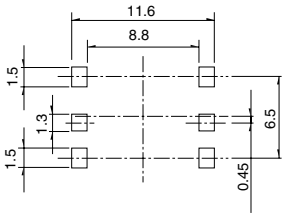
Notes

1. ※The minimum packing unit means the basic unit of order.
2. ※Place your purchase order in N minimum package units (N: integer). Ask us for the export packaging unit.
3. For SKQUAA, and SKQUBA models, the 4-directional operating force and travel are measured 0.9mm below the top of the stem.
4. For SKQUCA models, the 4-directional operating force and travel are measured 2.9mm below the top of the stem.
5. For SKQUDB models, the 4-directional operating force and travel are measured 1.5mm below the top of the stem.

For products specifications, see **P.165**
For soldering conditions, see **P.166**
For specifications of taping package, see **P.166**

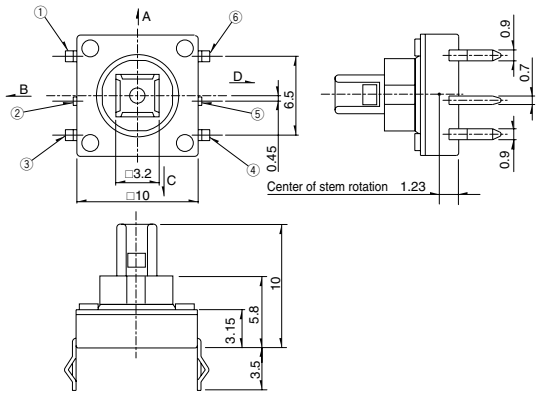
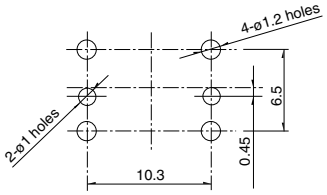
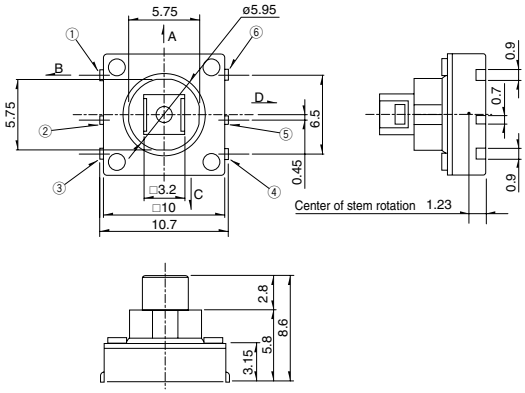
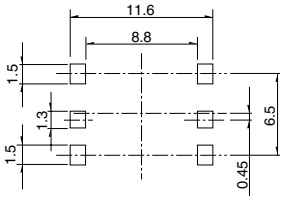
Dimensions (4-directional Type)

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
1	Snap-in 		
2	Surface-mount 		PC board land dimensions (Viewed from switch mounting face) 

Dimensions (With Center Push Type)

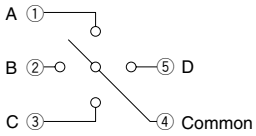
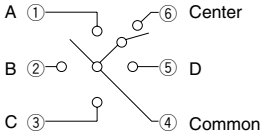
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
3	Snap-in 		
4	Surface-mount 		PC board land dimensions (Viewed from switch mounting face) 

Note

The board thickness of the printed wiring board of Figures 1 and 3 is 1.6mm.

Circuit Diagram

4-directional type	With center push type
	

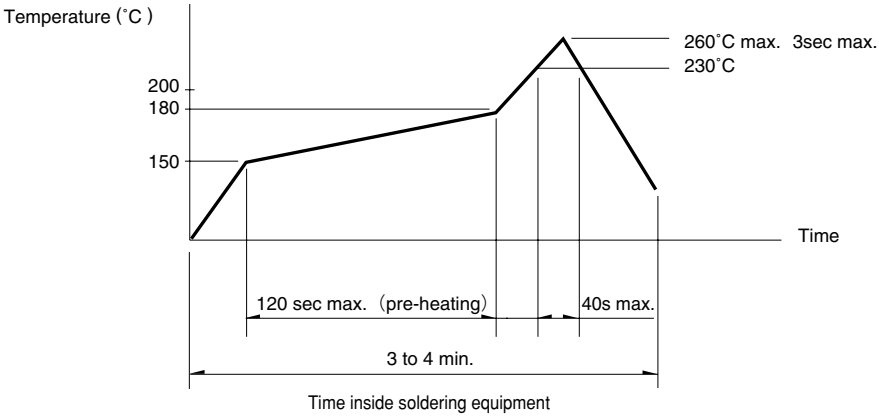
Products Specifications

Items			RKJXT1F	RKJXM	RKJXL	RKJXS	SKRV	SKRH	SKQU
Operating temperature range			−40℃ to +80℃	−30℃ to +70℃		−20℃ to +70℃			
Electrical performance	Rating voltage		———				———		
	Ratings (Maximum) (Resistive load)		10mA 5V DC (1mA min)	10mA 5V DC			50mA 12V DC		
	Directional resolution		4-directional	8-directional			4-directional		
	Insulation resistance		100MΩ min. 250V DC			50MΩ min. 50V DC	100MΩ min. 100V DC		
	Voltage proof		300V AC for 1min. or 360VA AC for 2sec	300V AC for 1min.		50V AC for 1 min.	100V AC for 1min.		
Mechanical Performance	Direction application force		40±25mN・m	Direction A, B, C, D 30±20mN・m Direction AB, BC, CD, DA 25±20mN・m	10±7mN・m	0.8±0.5N	4-directional :1.2N	SKRHAA SKRHAB 1.23N SKRHAC SKRHAD 1.2N	4-directional :1.57N
	Push application force		5±2N	3±1.5N	4.5±1N	2.5±1.5N	Center push :2.4N	Center push :2.35N	Center push :3.14N (Only the center-push types)
	Encoders Detent torque		15±8mN・m	12±8mN・m	———				
	Solder heat resistance	Manual soldering	350±5℃ 3s max.	350℃ max. 3s max.		350±10℃ 3^{+1}_{0} s	350℃ max. 3s max.		
		Dip soldering	260±5℃, 5±1s			———			260℃ max. 5s max.
		Reflow soldering	———			Please see P.166			
Endurance	Vibration		8.3±1 to 200±4 to 8.3±1Hz, 4.4G fixed (for 15minutes/1cycle), in the 3direction of X,Y and Z and 2hours respectively	8.3 to 200 to 8.3Hz, 4.4G fixed (for 15 minutes/1 cycle), 3 angles each 2 hours			10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z and for 2 hours respectively		
	Operating life	Directions	50,000 cycles	100,000 cycles		500,000 cycles	200,000 cycles	SKRHAA SKRHAB 20,000 cycles SKRHAC SKRHAD 1,000,000 cycles	SKQUAA SKQUBA 50,000 cycles SKQUCA SKQUDB 100,000 cycles
		Center detent							
		Encoder	15,000 cycles		———				
Environmental test	Cold		−40±2℃ for 500±10h	−40±2℃ for 500h		−40±2℃ for 96h	−30±2℃ for 96h		
	Long-term heat resistance		85±2℃ for 500±10h	85±2℃ for 500h		85±2℃ for 96h	+80±2℃ for 96h		
	Moisture resistance		60±2℃, 90 to 95%RH for 500±10h	60±2℃, 90 to 95%RH for 500h		60±2℃, 90 to 95%RH for 96h			

Soldering Conditions

Condition for Reflow

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



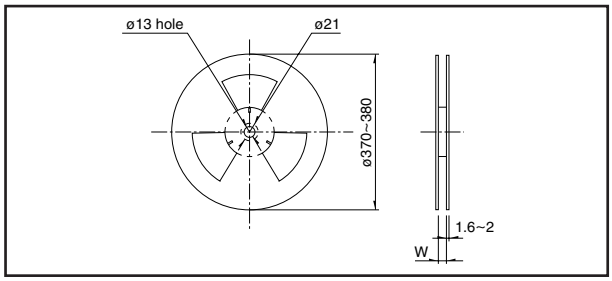
Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board temperature greatly differs from that of the switch, depending on the PC board material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. You are requested to verify the soldering conditions thoroughly beforehand.

Taping Specifications

Taping Packaging

Reel size Unit:mm



Note

Order products in N minimum packing units (1 reel).

Series	Number of packages (pcs.) 1 reel	Reel width W (mm)	Tape width (mm)
RKJXS	950	25.5	24
SKRV	1,500	17.5	16
SKRH	1,300	17.5	16
SKQUDB	600	33.5	32
SKQUBA	750	33.5	32