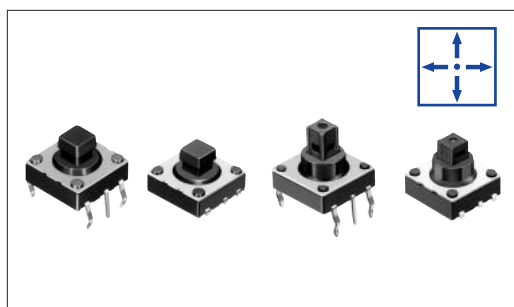


Multi Control Devices TACT Switch™ 4-directional with Center Push (SMD & Snap-in) Type

SKQU Series



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. SMD 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		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	1.57N	—	0.35	—	50mA 12V DC	10μA 1V DC	50,000 cycles 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		Travel (mm)		Rating (max.)	Rating (max.)	Operating life (5mA 5V DC)	Initial contact resistance	Variety	Minimum packing unit※ (pcs.)	Drawing No.
	4-direction	Center push	4-direction	Center push							
SKQUCAA010	1.57N	3.14N	0.4	0.2	50mA 12V DC	10μA 1V DC	100,000 cycles 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. Place your purchase order in N minimum package units (N: integer). Ask us for the export packaging unit.
2. For SKQUAA, and SKQUBA models, the 4-directional operating force and travel are measured 0.9mm below the top of the stem.
3. For SKQUCA models, the 4-directional operating force and travel are measured 2.9mm below the top of the stem.
4. For SKQUDB models, the 4-directional operating force and travel are measured 1.5mm below the top of the stem.

For specifications, see **P.304**
For soldering conditions, see **P.305**
For specifications for the taping package, see **P.305**

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products

Variable
Resistor Type

Switch
Type

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		

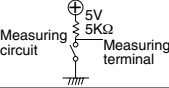
Dimensions (With Center Push Type)			Unit:mm
No.	Photo	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
3			
4			

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

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- Multi Control Devices
- TACT Switch™
- Custom-Products
- Variable Resistor Type
- Switch Type

Products Specifications

Items			SLLB5	SLLQ	SKRV	SKRH		SKQU		
						SKRHAA,SKRHAB	SKRHAC,SKRHAD	SKQUAA,SKQUBA	SKQUCA,SKQUDB	
Operating temperature range			−10℃ to +60℃	−40℃ to +85℃	−20℃ to +70℃	−30℃ to +85℃				
Rating (max.) (Resistive load)			10mA 5V DC			50mA 12V DC				
Electrical performance	Output voltage		1V max. at 1mA 5V DC (Resistive load) 							
	Directional resolution					5-direction		4-direction	5-direction	
	Insulation resistance		100MΩ min. 100V DC							
	Voltage proof		100V AC for 1 min.					250V AC for 1 min.		
Mechanical characteristics	Direction application force		0.65±0.3N	1±0.5N	1.2±0.6N	1.23±0.69N	1.2±0.69N	1.57 ^{+0.49} _{−0.59N}	1.57 ^{+0.39} _{−0.69N}	
	Push application force		2.5±1N	1.6±1N 2.6±1N	2.4±0.69N	2.35±0.69N		—	3.14±0.59N	
	Encoders Detent torque									
	Robustness of terminal		3N for 1 min.			29.4N for 5sec.		29.4N for 1min.	49N for 1min.	
	Robustness of actuator	Pushing direction	50N	30N						
		Operating direction	10N							
	Solder heat resistance	Manual soldering	350±5℃ 3s max.			350℃ max. 3s max.				
		Dip soldering							260℃ max. 5s max.	
		Reflow soldering	Please see P.305			Please see P.305	Please see P.305		Please see P.305	
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	Directions				200,000 cycles	200,000 cycles	1,000,000 cycles	50,000 cycles	100,000 cycles
		Center detent								
		Encoder								
	Operating life without load		100,000 cycles							
	Operating life with load (Load : As rating)									
Environmental test	Cold		−20±2℃ for 96h	−40±2℃ for 96h	−30±2℃ for 96h					
	Long-term heat resistance		85±2℃ for 96h			80±2℃ for 96h				
	Moisture resistance		40±2℃, 90 to 95%RH for 96h			60±2℃, 90 to 95%RH for 96h				

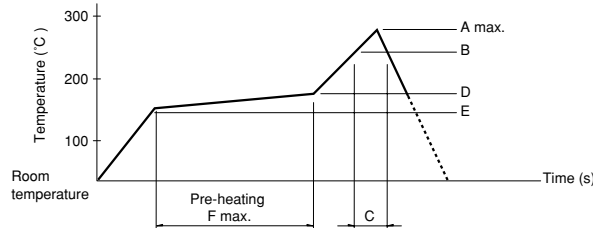
Note

Shall be in accordance with individual specifications.

Soldering Condition

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 soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



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

Notes

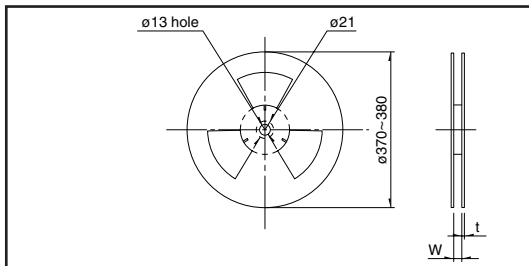
1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
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



Unit:mm

Applicable series	Tape dimensions
SKRH	
SKRV	
SKQUBA	
SKQUBD	

Series	Number of packages (pcs.)			Reel width W (mm)	Reel thickness t (mm)	Tape width (mm)	Tape dimensions
	1 reel	1 case/domestic	1 case/export packing				
SRBE	1,300	2,600	5,200	25.4	2	24	
SLLB	1,350	2,700	5,400	24.4	3	24	
SLLB5	1,500	3,000	6,000	24.4	3	24	
SLLQ11	900	1,800	3,600	24.4	3	24	
SLLQ12	1,400	2,800	5,600	24.4	3	24	
RKJXS	950	3,800	3,800	25.5	1.6~2	24	
SKRV	1,500	12,000	12,000	17.5	2	16	* 1
SKRH	1,300	10,400	10,400	17.5	2	16	
SKQUBA	750	3,000	3,000	33.5	2	32	* 2
SKQUBD	600	2,400	2,400	33.5	2	32	

Note

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

Detector

Push

Slide

Rotary

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Power

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