

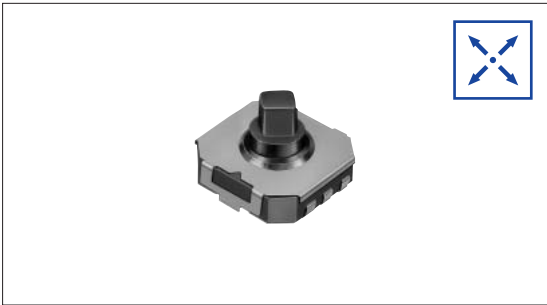
Multi Control Devices TACT Switch™ 4-directional with Center Push (SMD) Type

SKRH Series



Compact size contributing to smaller and thinner set design.

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- Multi Control Devices**
- TACT Switch™



Features

- Multi-directional input type with 4 directions plus center push.
- Remarkably compact and low-profile: Outline dimensions (7.35mm x 7.5mm). Stem height (5mm), Body height (1.8mm). (Longer life type: Outline dimension; 7.45 x 7.5mm Stem height; 5mm Body height; 1.85mm).
- Its octagonal shape outline contributes to smaller mounting space.
- Reflow solderable.
- Packaged with a 16mm embossed taping.

Applications

- Digital still cameras and digital video camcorders
- Portable audio devices
- Mobile phones and personal digital assistant
- Operation of various digital devices

- Custom-Products
- Variable Resistor Type
- Switch Type**

Products Line

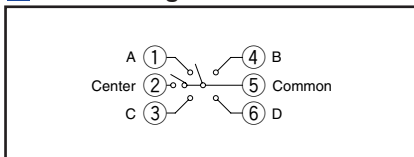
Products No.	Operating force		Travel (mm)		Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Variety
	4-direction	Center push	4-direction	Center push						
SKRHAAE010	1.23N	2.35N	0.25	0.15	50mA 12V DC	10μA 1V DC	200,000 cycles for each direction	500mΩ max.	Black	Without guide bosses
SKRHABE010										With guide bosses
SKRHACE010	1.2N						1,000,000 cycles for each direction		Natural	Without guide bosses
SKRHADE010										With guide bosses

Dimensions

Unit:mm

Style	PC board mounting hole and land dimensions (Viewed from switch mounting face)															
<table border="1"> <thead> <tr> <th></th> <th>x</th> <th>h</th> </tr> </thead> <tbody> <tr> <td>SKRHAAE010</td> <td>7.35</td> <td>1.8</td> </tr> <tr> <td>SKRHABE010</td> <td>7.35</td> <td>1.8</td> </tr> <tr> <td>SKRHACE010</td> <td>7.45</td> <td>1.85</td> </tr> <tr> <td>SKRHADE010</td> <td>7.45</td> <td>1.85</td> </tr> </tbody> </table>		x	h	SKRHAAE010	7.35	1.8	SKRHABE010	7.35	1.8	SKRHACE010	7.45	1.85	SKRHADE010	7.45	1.85	
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Circuit Diagram

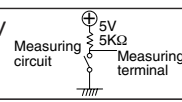


Note

4-directional operating force and travel are measured at 4.3mm height from the bottom of the switch.

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

Products Specifications

Items	SLLB5	SLLQ	SKRV	SKRH		SKQU								
				SKRHAA,SKRHAB	SKRHAC,SKRHAD	SKQUAA,SKQUBA	SKQUCA,SKQUBB							
Operating temperature range	-10°C to +60°C	-40°C to +85°C	-20°C to +70°C	-30°C to +85°C										
Detector	10mA 5V DC		50mA 12V DC											
Push	1V max. at 1mA 5V DC (Resistive load) 													
Slide								Directional resolution	5-direction		4-direction	5-direction		
Rotary								Insulation resistance	100MΩ min. 100V DC					
Encoders								Voltage proof	100V AC for 1 min.				250V AC for 1 min.	
Power	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}						
Dual-in-line Package Type	Push application force	2.5±1N	1.6±1N 2.6±1N	2.4±0.69N	2.35±0.69N		—	3.14±0.59N						
Multi Control Devices	Encoders Detent torque	—												
TACT Switch™	Robustness of terminal	3N for 1 min.		29.4N for 5sec.		29.4N for 1min.	49N for 1min.							
Custom-Products	Robustness of actuator	Pushing direction	50N	30N	—									
		Operating direction	10N											
	Solder heat resistance	Manual soldering	350±5°C 3s max.		350°C max. 3s max.									
		Dip soldering	—				260°C 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°C for 96h	-40±2°C for 96h	-30±2°C for 96h										
	Long-term heat resistance	85±2°C for 96h		80±2°C for 96h										
	Moisture resistance	40±2°C, 90 to 95%RH for 96h		60±2°C, 90 to 95%RH for 96h										

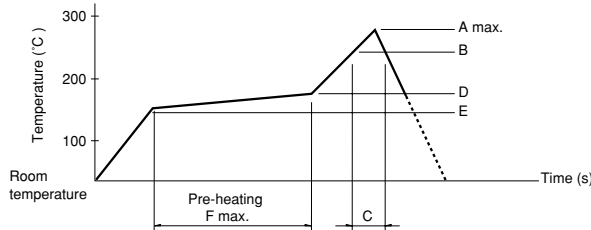
Note

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



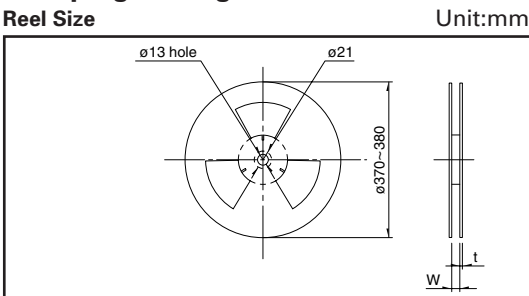
Series(Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F(s)
SLLB, SLLQ	240	230	20	150	150	120
RKJXS/SKRV/SKRH/SKQUBA,DB/SRBE	260		40	180		

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



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

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products

Variable
Resistor Type

Switch
Type