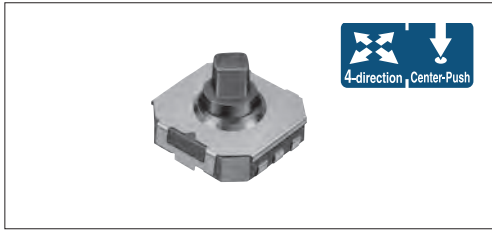


SKRH

4-direction with Center-push Function (Surface Mount Type)

Body height of 1.85mm available with long-life of 1 million life cycles



Typical Specifications

Items	Specifications
Rating (max.)	50mA 12V DC
Rating (min.)	10 μ A 1V DC

Product Line

Product No.	Operating force		Travel (mm)		Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Guide bosses	Minimum order unit (pcs.)	
	4-direction	Center-push	4-direction	Center-push					Japan	Export
SKRHAE010	1.23N	2.35N	0.25	0.15	200,000 cycles for each direction	500m Ω max.	Black	Without	1,300	1,300
SKRHABE010								With		
SKRHACE010	1.2N	2.35N	0.25	0.15	1,000,000 cycles for each direction	100m Ω max.	Natural	Without	1,300	1,300
SKRHADE010								With		

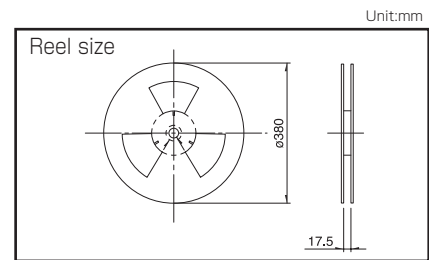
Note

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

Packing Specifications

Taping

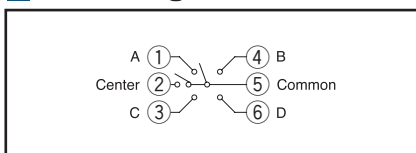
Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case / Japan	1 case / export packing		
1,300	10,400	10,400	16	401×401×214



Dimensions










Style	PC board mounting hole and land dimensions (Viewed from mounting face)				
	x	h	a	b	c
SKRHAE010	7.35	1.8	2.14	1	8.6
SKRHABE010	7.35	1.85	2.17	1.6	8.7
SKRHACE010	7.35	1.85	2.17	1.6	8.7
SKRHADE010	7.35	1.85	2.17	1.6	8.7

Circuit Diagram



Multi Control Devices

List of Varieties

Type		Switch type					
Series		SKRH		SRBE	SLLB5 Compact type	SLLB	
		SKRHAA/AB	SKRHAC/AD				
Photo							
Dimensions (mm)	W	7.35/7.45		—	9.5	11.8	
	D	7.5		—	8.8	11.4	
	H	5		—	2.2	3	
Shaft material		Resin					
Directional resolution		4-direction		—	2-direction		
Directional operating feeling (tactile feeling)		With			Without		
Lever return mechanism		With		Without	With		
Center-push switch		With					
Encoder		Without		With	Without		
Operating temperature range		-40°C to +85°C		-10°C to +60°C		-40°C to +85°C	
Operating life	Without load	—		100,000 cycles			
	With load(10mA 5V DC)	—		100,000 cycles			
	With load(5mA 5V DC)	200,000 cycles for each direction	1,000,000 cycles for each direction	—	—	—	
Automotive use		—		—	—	—	
Life cycle (availability)							
Rating (max.) (Resistive load)		50mA 12V DC		1mA 5V DC	10mA 5V DC		
Electrical performance	Output voltage	—		1V max. at 1mA 5V DC (Resistive load)	—	1V max. at 1mA 5V DC (Resistive load) 	
	Encoder resolution	—		6 pluses/360°	—		
	Insulation resistance	100MΩ min. 100V DC		10MΩ min. 50V DC	100MΩ min. 100V DC		
	Voltage proof	100V AC for 1min.		50V AC for 1min.	100V AC for 1min.		
Mechanical performance	Directional operating force	1.23±0.69N	1.2±0.69N	—	0.65±0.3N		
	Push operating force	2.35±0.69N		3.5±1.5N	2.5±1N	2±1N	
	Encoder detent torque	—		3±2mN·m	—	—	
	Terminal strength	—				3N for 1min.	
	Actuator strength	Push / pull directions	—	—	50N		
	Operating direction	29.4N		—	10N		
Environmental performance	Cold	-40°C 96h		-30°C 96h	-20°C 96h	-40°C 96h	
	Dry heat	90°C 96h		85°C 96h			
	Damp heat	60°C, 90 to 95%RH 96h		40°C, 90 to 95%RH 96h			
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 Switch Type Multi Control Devices Cautions 413

Switch Type Multi Control Devices / Soldering Conditions

Reference for Manual Soldering

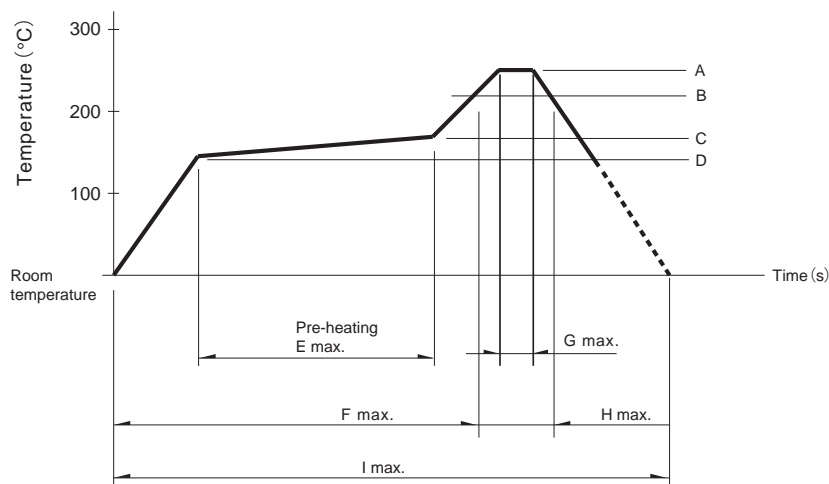
Series	Tip temperature	Soldering time	No. of solders
RKJXT1F, RKJXM, RKJXL, SLLB, SLLB5, SRBE, SKRH	350±5°C	3s max.	1 time

Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RKJXT1F, RKJXM	100°C max.	2 min. max.	260±5°C	5±1s	2 time max.
RKJXL	120°C max.	70s max.	260°C max.	6s max.	2 time max.

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple $\phi 0.1$ to 0.2 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	A	B	C	D	E	F	G	H	I	No. of reflows
SLLB5	250°C	230°C	150°C	150°C	—	2 min.	—	30s	—	1 time
SLLB, SRBE	260°C	230°C	180°C	150°C	2 min.	—	—	40s	—	1 time
SKRH	260°C	230°C	180°C	150°C	2 min.	—	3s	40s	3-4 min.	2 times

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.

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