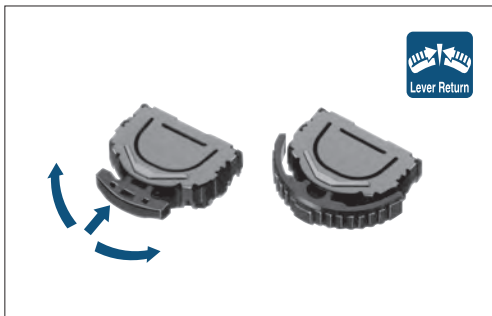


# SLLB

## Lever and Push Operation Type Switch

Compact and low-profile horizontal type for various applications



### Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		10mA 5V DC/50 $\mu$ A 3V DC
Output voltage		1V max. at 1mA 5V DC (Resistive load)
Operating force	Lever portion	0.65 $\pm$ 0.3N
	Push portion	2 $\pm$ 1N
Travel (Push operation)		Refer to the dimensions.
Operating life	Without load	100,000 cycles
	With load	100,000 cycles (10mA 5V DC)

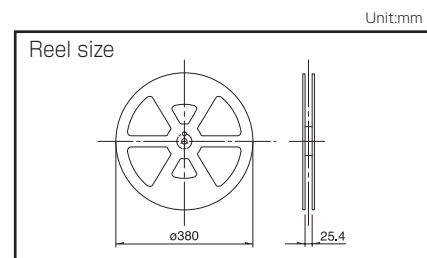
### Product Line

Product No.	Actuator configuration	Push-on switch	Actuator color	Location lug	Minimum order unit (pcs.)	
					Japan	Export
<b>SLLB120100</b>	Standard type Mounting knob	With	Black	With	1,350	5,400
<b>SLLB120200</b>	Standard type Mounting knob integrated		Gray			
<b>SLLB120300</b>			Black			

### Packing Specifications

#### Taping

Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case / Japan	1 case / export packing		
1,350	2,700	5,400	24	428 $\times$ 413 $\times$ 172



■ Dimensions

Unit:mm

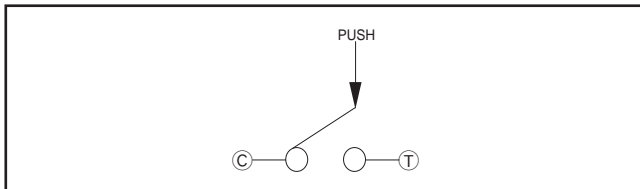
Style	PC board mounting hole and land dimensions (Viewed from switch mounting face)
<p><b>Mounting knob with push-on switch</b></p>	
<p><b>Mounting knob integrated with push-on switch</b></p>	

Multi Control Devices

Variable Resistor Type

Switch Type

■ Circuit Diagram (Push Portion)



■ Code Table

Code Table (■ = ON)









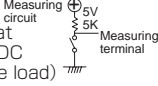
Standard type

Terminal	25°		0°		25°	
	(21.5°)	(11°)	(11°)	(11°)	(21.5°)	(21.5°)
①	■	■				
②	■					
③						
④					■	■
ⓐ	■	■	■	■	■	■

CCW ← → CW

# 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 / Soldering Conditions

## Reference for Manual Soldering

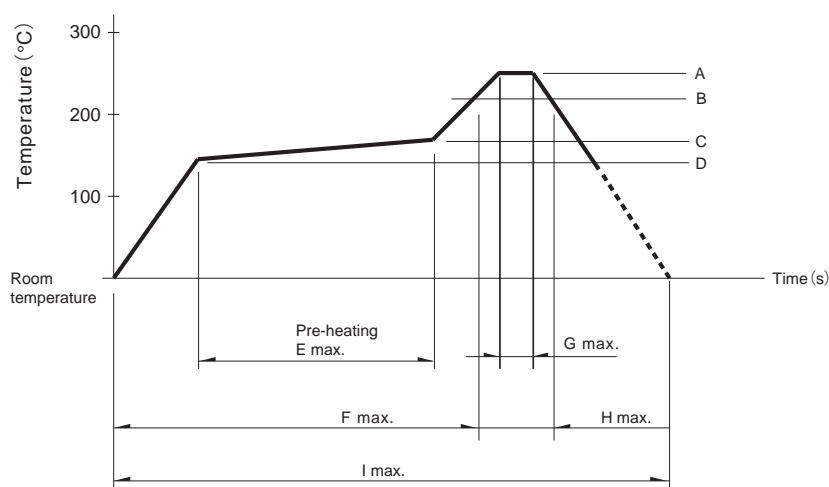
Series	Tip temperature	Soldering time	No. of solders
<b>RKJXT1F, RKJXM, RKJXL, SLLB, SLLB5, SRBE, SKRH</b>	350±5°C	3s max.	1 time

## Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
<b>RKJXT1F, RKJXM</b>	100°C max.	2 min. max.	260±5°C	5±1s	2 time max.
<b>RKJXL</b>	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
<b>SLLB5</b>	250°C	230°C	150°C	150°C	—	2 min.	—	30s	—	1 time
<b>SLLB, SRBE</b>	260°C	230°C	180°C	150°C	2 min.	—	—	40s	—	1 time
<b>SKRH</b>	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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