

Lever and Push Operation Type Switch

SLLB Series

A small, horizontal type with a thin shape, which is applicable for a wide range of uses.

- Power
- Push
- Slide
- Rotary
- Encoders
- Jog Shuttle
- Telephone-hook
- Detector
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT
- Variable Resistor Type
- Switch Type



Car Use

Features

- The control unit provides both momentary operation by lever and center push operation.
- Using a single knob enables compound actions with simple operations.
- Reflow solderable.

Applications

- For the operation of telecommunication equipment such as cellular phones, etc.
- Compact, portable units such as VCR cameras, portable audios, car radios, etc.

Typical Specifications

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

Products Line

Operating section style	Push-on switch	Lever color of operating section	Location lug	Minimum packing unit (pcs.)	Products No.	Drawing No.		
Mounting knob	With	Black only	With	1,350	SLLB120100	1		
	Without				SLLB220100			
Mounting knob integrated	With	Gray			SLLB120200			
		Black			SLLB120300			
	Without	Gray			SLLB220200			
		Black only			SLLB220600		2	
Thin type / Mounting knob	With	Black only			SLLB310300		4	
Thin type / Mounting knob integrated					Gray			SLLB310500
		Black			Without			SLLB310200
With					With			SLLB310400

Note

Additional switches not included in the above list are also available. Contact us for details.

For other detailed specifications, see **P.339**
For specifications for the taping package, see **P.340**

Dimensions

Standard type

Unit : mm

No.	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
	<p>Mounting knob</p>	
1	<p>Mounting knob integrated</p>	
2	<p>Bar type knob</p>	

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Thin Type/Without Location Lug

Unit : mm

No.	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
3	<p>Mounting knob integrated</p>	

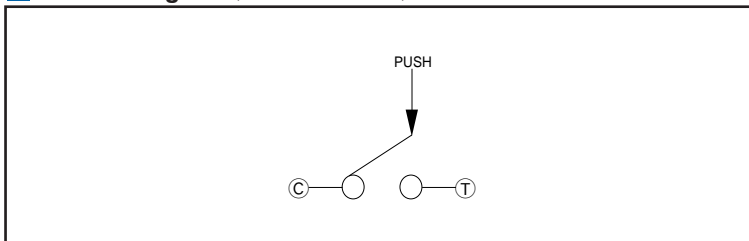
■ Dimensions

Thin type/with Location lug

Unit : mm

No.	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
4	Mounting knob 	
	Mounting knob integrated 	

■ Circuit Diagram (Push-button)



■ Code Table

Code table (■ = ON)

Standard type	Thin type
Lever circuit 	

Products Specifications

Items		RKJXT	RKJXM	RKJXL	RKJXS	SLLB	SLLB5	SLLQ	
Operating temperature range		-30°C to +70°C			-20°C to +70°C	-10°C to +60°C		-40°C to +85°C	
Rating (max.) (Resistive load)		10mA 5V DC							
Electrical performance	Output voltage	_____			1V max. at 1mA 5V DC (Resistive load)				
	Directional resolution	8-directional					_____		
	Insulation resistance	250V DC 100MΩ min.			50V DC 50MΩ min.	100V DC 100MΩ min.			
	Voltage proof	300V AC for 1min.			50V AC for 1min.	100V AC for 1 min.			
Mechanical characteristics	Direction application force	40±25mN·m	Direction A, B, C, D 30±20mN·m	10±7mN·m	0.8±0.5N	_____			
		Direction AB, BC, CD, DA 25±20mN·m				_____			
	Push application force	4.5±2N	3±1.5N	4.5±1N	2.5±1.5N	_____			
	Encoders Detent torque	15±8mN·m	12±8mN·m	_____					
	Robustness of terminal	_____				3N for 1 min.			
	Robustness of actuator	Pushing direction	_____			30N	50N	30N	
		Operating direction	_____			20N	10N		
	Solderability		230±5°C、3±0.5s						
	Solder heat resistance	Manual soldering	300°C max. 3s max.			350±10°C 3 ¹ / ₈ s	350±5°C 3s max.		
		Dip soldering	260±5°C, 5±1s					_____	
Reflow soldering		_____					Please see P.340		
Endurance	Vibration		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 for 2 hours respectively			
	Operating life	Directions	50,000 cycles	100,000 cycles		500,000 cycles	_____		
		Center detent	_____						
		Encoder	15,000 cycles		_____				
	Operating life without load		_____				100,000 cycles		
Operating life with load (Load : As rating)		_____				100,000 cycles			
Environmental test	Cold		-40±2°C for 500h		-40±2°C for 96h	-20±2°C for 96h	-40±2°C for 96h		
	Long-term heat resistance		85±2°C for 500h		85±2°C for 96h	85±2°C for 96h			
	Moisture resistance		60±2°C, 90 to 95%RH for 500h		60±2°C, 90 to 95%RH for 96h	40±2°C, 90 to 95%RH for 96h			

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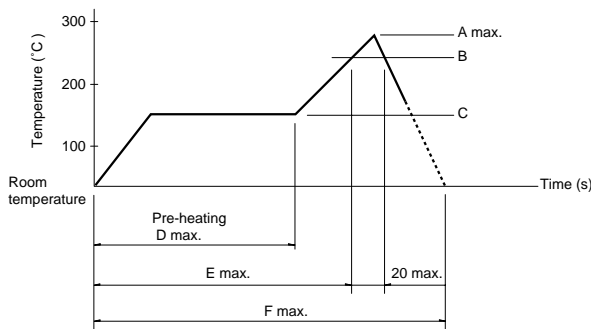
Note

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 (°C)	D (s)	E (s)	F (s)
SLLB, SLLQ	240	230	150	120	—	—
RKJXS		—	180	120		240

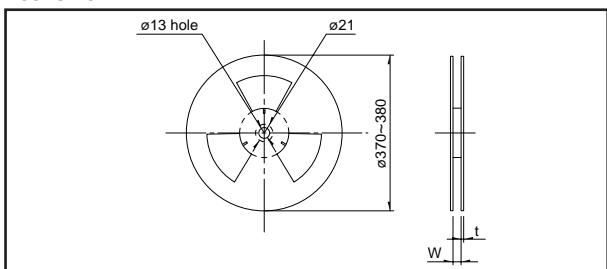
Notes

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



Note

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

Series	Number of packages (pcs.)			Reel width W (mm)	Reel thickness t (mm)	Tape width (mm)
	1 reel	1 case/ domestic	1 case/ export packing			
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