

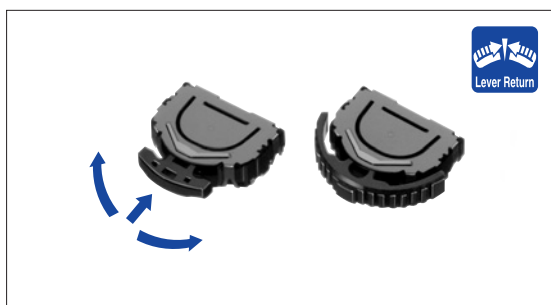
Multi Control Devices Lever and Push Operation Type Switch

SLLB Series



Compact and low-profile horizontal type for various applications.

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



Features

- The actuator unit provides momentary operation with the lever and center push.
- A single knob enables combined actions with simple operations.
- Reflow solderable.

Applications

- For operating mobile phones and various communication devices
- For digital camcorders, portable audio devices, card type radios and various portable devices

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

Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		10mA 5V DC/50μA 3V 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	100,000cycles
	With load	100,000cycles (10mA 5V DC)

Product Line

Actuator configuration	Push-on switch	Actuator color	Location lug	Minimum packing unit (pcs.)	Product No.	Drawing No.
Standard type Mounting knob	With	Black only	With	1,350	SLLB120100	1
Standard type Mounting knob integrated		Gray			SLLB120200	
		Black			SLLB120300	
Bar type knob	Without	Gray			SLLB220200	2
Thin type/ Mounting knob	With	Black only			SLLB310300	4
Thin type/ Mounting knob integrated		Gray			SLLB310500	
		Black	Without	SLLB310200	3	

Notes

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. Please contact us for automotive use products.

Refer to **P.309** for product specifications.
Refer to **P.311** for taping package specifications.

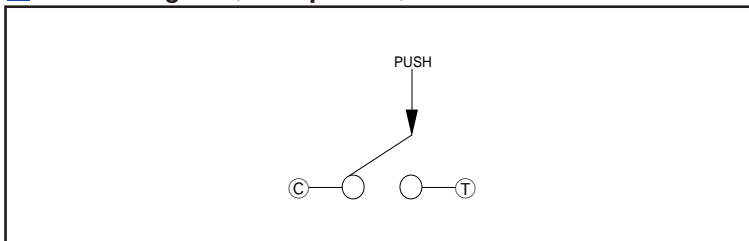
■ Dimensions

Thin type/with locator pin

Unit:mm

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

■ Circuit Diagram (Push-portion)



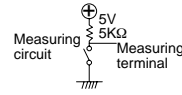
■ Code Table

Code table (■ = ON)

Standard Type Lever circuit 	Bar Type knob Lever circuit
Thin Type Lever circuit 	

Product Specifications

Items	SKQU		SSAF	SRBE	SLLB ※	SLLB5 ※	SLLQ		
	SKQUAA, SKQUBA	SKQUCA, SKQUDB							
Detector	-30°C to +85°C		-10°C to +60°C				-40°C to +85°C		
Push	50mA 12V DC		20mA 5V DC	1mA 5V DC	10mA 5V DC				
Slide	Output voltage		1V max. at 1mA 5V DC (Resistive load)						
Rotary	Directional resolution		4-direction	9-direction	_____				
Encoders	Insulation resistance		100MΩ min. 100V DC	10MΩ min. 100V DC	50MΩ min. 50V DC	100MΩ min. 100V DC			
Power	Voltage proof		250V AC for 1minute	100V AC for 1minute	50V AC for 1minute	100V AC for 1minute			
Dual-in-line Package Type	Directional operating force		1.57 ^{+0.49} _{-0.59N}	1.57 ^{+0.39} _{-0.59N}	8-direction 0.5N ^{+0.5} _{-0.35N}	0.65±0.3N		1±0.5N	
Multi Control Devices	Push operating force		—	3.14±0.59N	2.5 ^{+0.7} _{-0.5N}	3.5±1.5N	2±1N	2.5±1N	1.6±1N 2.6±1N
TACT Switch™	Encoder detent torque		_____		3±2mN·m	_____			
Custom-Products	Terminal strength		29.4N for 1minute	49N for 1minute	_____		3N for 1minute		
Variable Resistor Type	Actuator strength	Pushing direction	_____				50N		30N
		Operating direction	_____		50N	_____	10N		
Switch Type	Solder heat resistance	Manual soldering	350°C max. 3s max.	350±10°C 4 ⁺¹ ₀ s	350±5°C 3s max.				
		Dip soldering	260°C max. 5s max.	_____					
		Reflow soldering	Please see P.311						
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	Directional	_____		_____				
		Center push	50,000 cycles	100,000 cycles	500,000cycles	_____		_____	
		Encoder	_____		_____	100,000cycles	_____		
Operating life without load		_____				100,000cycles	100,000cycles		
Operating life with load (at rated load)		_____							
Environmental test	Cold		-30±2°C for 96h	-40±2°C for 96h		-20±2°C for 96h		-40±2°C for 96h	
	Dry heat		80±2°C for 96h	85±2°C for 96h					
	Damp heat		60±2°C, 90 to 95%RH for 96h	40±2°C, 90 to 95%RH for 96h					



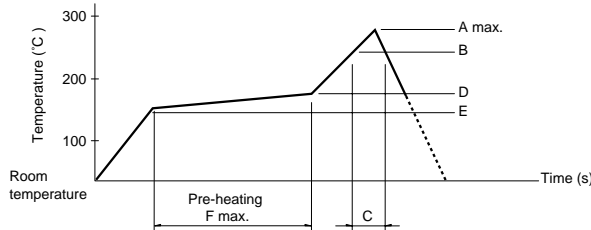
Notes

1. Shall be in accordance with individual specifications.
2. ※ The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 CA(K) or CC(T) (at solder joints copper foil surface). A heat resistive tape should be used to fix thermocouple.
3. Temperature profile



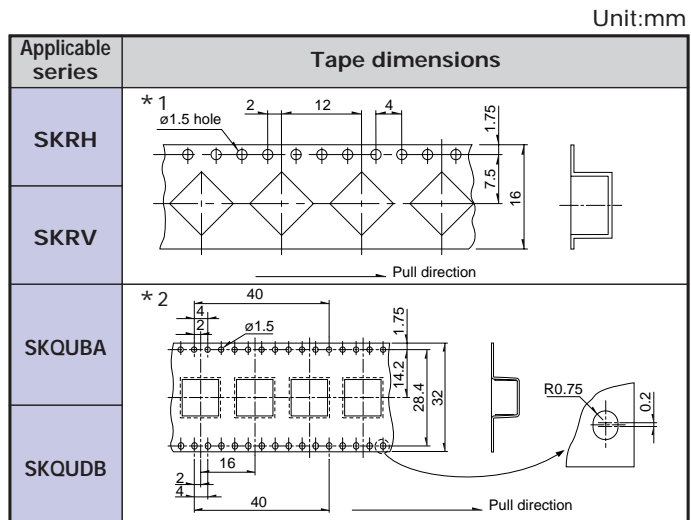
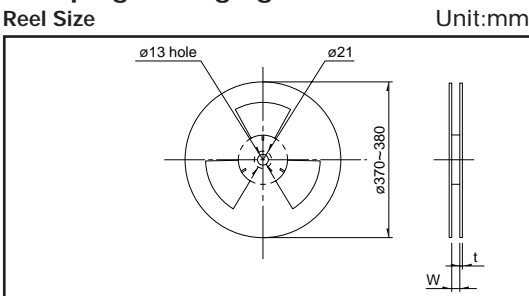
Series(Reflow type)	A() 3s max.	B()	C(s)	D()	E()	F(s)
SLLB, SLLB5, SLLQ	240	230	20	150	150	120
RKJXS/SKRV/SKRH/SKQUBA,DB/SSAF/SRBE	260		40	180		

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.

Taping Specifications

Taping Packaging



Series	Number of packages(pcs.)			Reel width W(mm)	Reel thickness t(mm)	Tape width (mm)	Tape dimensions
	1 reel	1 case (shipment within Japan)	1 case (shipment outside of Japan)				
SSAF	1,200	2,400	2,400	24.4	2	24	
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 to 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
SKQUBB	600	2,400	2,400	33.5	2	32	

Note

Please place purchase orders for taping products per minimum package 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