

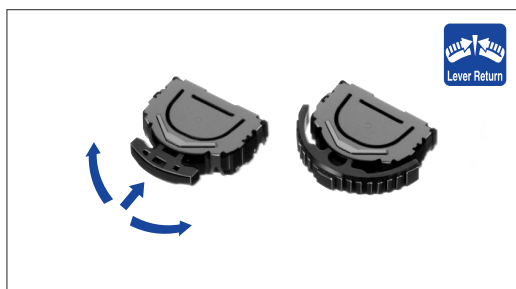
Multi Control Device Lever and Push Operation Type Switch

SLLB Series



Compact and low-profile horizontal type for various applications.

Multi Control
Devices



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 order unit (pcs.) | Product No. | Drawing No. |
|--|----------------|----------------|--------------|---------------------------|-------------|-------------|
| Standard type Mounting knob | With | Black | With | 5,400 | SLLB120100 | 1 |
| Standard type Mounting knob integrated | | Gray | | | SLLB120200 | |
| | | Black | | | SLLB120300 | |
| Bar type knob | Without | Black | | | SLLB220900 | 2 |

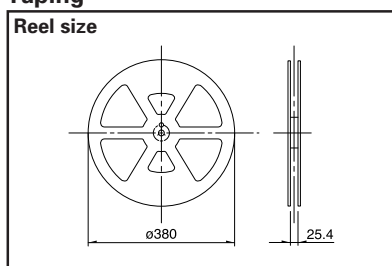
Variable
Resistor Type

Switch
Type

Packing Specifications

Taping

Unit:mm



| 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 | 428×413×172 |

Notes

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. For automotive use, please contact us .
3. Please place purchase orders per minimum order unit N (integer).

Dimensions

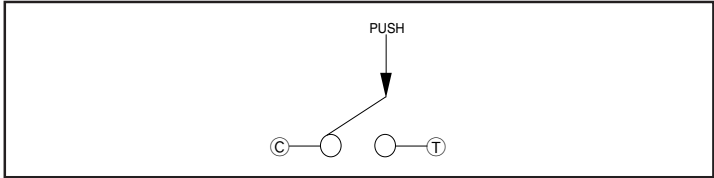
Unit:mm

| No. | Style | PC board mounting hole and land dimensions (Viewed from mounting face) |
|-----|---|--|
| 1 | Mounting knob With push-on switch | |
| | Mounting knob integrated With push-on switch | |
| 2 | Bar type knob | |

Multi Control
Devices

Variable
Resistor Type
**Switch
Type**

Circuit Diagram (Push Portion)










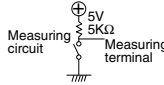


Code Table

Code table (■ = ON)

| Standard type | | Bar type knob | |
|---------------|--|---------------|--|
| Lever circuit | | Lever circuit | |
| | | | |

List of Varieties

| Series | | Switch type | | | | | | | |
|---------------------------------------|--|--|--|--------|---|---|--|---|--|
| | | SKQU | | | SSAF | SRBE | SLLB | SLLB5 Small type | |
| Items | | SKQUAA/SKQUBA | SKQUCA | SKQUBD | | | | | |
| Photo | |  | | |  |  |  |  | |
| Function | |  | | |  |  |  | | |
| Dimensions (typical value) (mm) | W | 10 | | | 10.85 | 8.05 | 11.8 | 9.5 | |
| | D | | | | | 11 | 11.4 | 8.8 | |
| | H | 7.1 | 10 | 8.6 | 3 | 3.17 | 3 | 2.2 | |
| Outlined specifications | Number of operating shafts | Single-shaft | | | | | | | |
| | Shaft material | Resin | | | | | | | |
| | Directional resolution | 4-direction | | | 8-contact | — | 2-direction | | |
| | Directional operating feeling | With | | | Without | With | Without | | |
| | Lever return mechanism | With | | | | Without | With | | |
| | Center-push switch | With/Without | | | With | | With/ Without | With | |
| | Encoder | Without | | | | With | | Without | |
| Operating temperature range | | -30℃ to +85℃ | | | -10℃ to +60℃ | | | | |
| Automotive use | | | | | | | | | |
| Rating (max.) (Resistive load) | | 50mA 12V DC | | | 20mA 5V DC | 1mA 5V DC | 10mA 5V DC | | |
| Electrical performance | Output voltage | | | | 1V max. at 1mA 5V DC (Resistive load) | |  | | |
| | Directional resolution | 4-direction | | | 8-contact | — | 2-direction | | |
| | Insulation resistance | 100MΩ min. 100V DC | | | 10MΩ min. 100V DC | 50MΩ min. 50V DC | 100MΩ min. 100V DC | | |
| | Voltage proof | 250V AC for 1min. | | | 100V AC for 1min. | 50V AC for 1min. | 100V AC for 1min. | | |
| | Directional operating force | 1.57 ^{+0.49} / _{-0.59} N | 1.57 ^{+0.39} / _{-0.69} N | | 0.5N ^{+0.5} / _{-0.35} N | — | 0.65±0.3N | | |
| Mechanical performance | Push operating force | — | 3.14±0.59N | | 2.5 ^{+0.7} / _{-0.5} N | 3.5±1.5N | 2±1N | 2.5±1N | |
| | Encoder detent torque | — | | | | 3±2mN·m | | — | |
| | Terminal strength | — | | | | | | 3N for 1min. | |
| | Actuator strength | Pushing direction | — | | | 50N | | | |
| | | Operating direction | — | | | 50N | — | 10N | |
| 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 without load | — | | | | | 100,000cycles | | |
| | Operating life with load (at rated load) | | | | | | | | |
| Environmental performance | Cold | -30±2℃ for 96h | | | -40±2℃ for 96h | | -20±2℃for 96h | | |
| | Dry heat | 80±2℃ for 96h | | | 85±2℃ for 96h | | | | |
| | Damp heat | 60±2℃, 90 to 95%RH for 96h | | | 40±2℃, 90 to 95%RH for 96h | | | | |
| Soldering | Manual soldering | 350℃ max. 3s max. | | | 350±10℃ 4 ⁺¹ / ₀ s | 350±5℃ 3s max. | | | |
| | Dip soldering | 260℃ max. 5s max. (SKQUAA,CA) | | | — | | | | |
| | Reflow soldering | Please see P.495 (SKQUBA,DB) | | | Please see P.495 | | | | |
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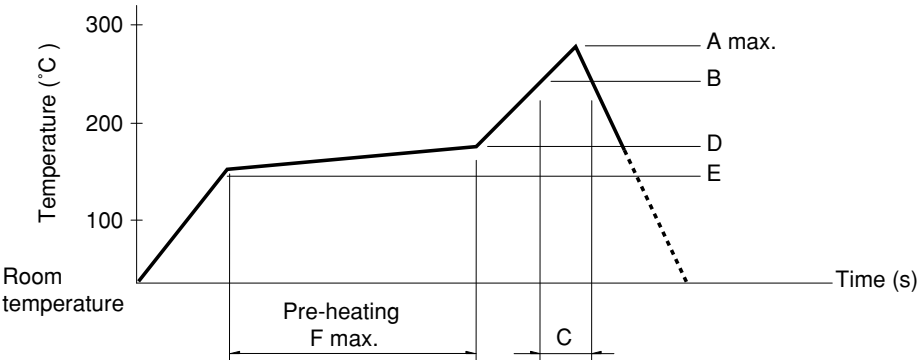
Multi Control
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Type**

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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 ϕ 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 (°C) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|-------------------------------|-------------------|--------|-------|--------|--------|-------|
| RKJXS | 260 | 230 | 40 | 150 | 150 | 120 |
| SLLB, SLLB5 | 240 | | 20 | | | |
| 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.