

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.) | 10μA 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 | 500mΩ 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 | 100mΩ max. | Natural | Without | | |
| SKRHADE010 | | | | | | | | With | | |

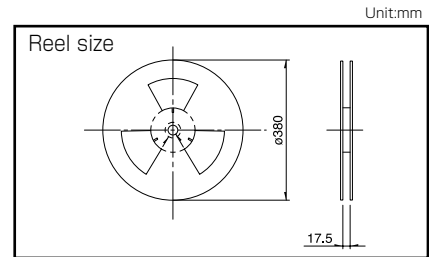
Note

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

■ Packing Specifications

Taping

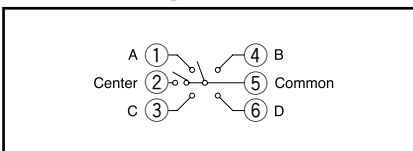
| Number of packages (pcs.) | | | Tape width (mm) | Export package measurements (mm) |
|---------------------------|----------------|-------------------------|-----------------|----------------------------------|
| 1 reel | 1 case / Japan | 1 case / export packing | | |
| 1,300 | 10,400 | 10,400 | 16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



■ Dimensions







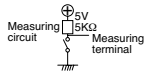
| Style | PC board mounting hole and land dimensions (Viewed from mounting face) | | | | |
|-------------------|--|------|------|-----|-----|
| | | | | | |
| | x | h | a | b | c |
| SKRHAE010 | 7.35 | 1.8 | 2.14 | 1 | 8.6 |
| SKRHABE010 | 7.35 | 1.8 | 2.14 | 1 | 8.6 |
| SKRHACE010 | 7.45 | 1.85 | 2.17 | 1.6 | 8.7 |
| SKRHADE010 | 7.45 | 1.85 | 2.17 | 1.6 | 8.7 |

■ Circuit Diagram



Multi Control Devices

List of Varieties

| Type | | Switch type | | | |
|---|-----------------------------|---|---|---|--|
| Series | | RKJXL | RKJXS | SKRH | |
| | | | | SKRHAA/AB | SKRHAC/AD |
| Photo | |  |  |  | |
| Dimensions (typical value) (mm) | W | 13 | 11.7 | 7.35/7.45 | |
| | D | | | 7.5 | |
| | H | 6.4 | 2.3 | 5 | |
| Number of operating shafts | | Single-shaft | | | |
| Shaft material | | Metal | Resin | | |
| Directional resolution | | 8-direction | | 4-direction | |
| Directional operating feeling (tactile feeling) | | Without | With | | |
| Lever return mechanism | | With | | | |
| Center-push switch | | With | | | |
| Encoder | | Without | | | |
| Operating temperature range | | -30°C to +70°C | -20°C to +70°C | -40°C to +85°C | |
| Operating life | Directional operation | total with 8-direction 100,000 cycles | 500,000 cycles for each direction | 200,000 cycles for each direction | 1,000,000 cycles for each direction |
| | Center-push | 100,000 cycles | 500,000 cycles | 200,000 cycles | 1,000,000 cycles |
| | Encoder | — | — | — | |
| Automotive use | | ● | — | — | |
| Life cycle (availability) | |  |  |  | |
| Rating (max.) (Resistive load) | | 10mA 5V DC | | 50mA 12V DC | |
| Electrical performance | Output voltage | — |  1V max. at 1mA 5V DC (Resistive load) | — | |
| | Encoder resolution | — | — | — | |
| | Insulation resistance | 100MΩ min. 250V DC | 50MΩ min. 50V DC | 100MΩ min. 100V DC | |
| | Voltage proof | 300V AC for 1min. or 360V AC for 2s | 50V AC for 1min. or 60V AC for 2s | 100V AC for 1min. | |
| Mechanical performance | Directional operating force | 10±7mN·m | 0.8±0.5N | 1.23±0.69N | 1.2±0.69N |
| | Push operating force | 4.5±1N | 2.5±1.5N | 2.35±0.69N | |
| | Encoder detent torque | — | — | — | |
| | Terminal strength | — | — | — | |
| | Actuator strength | Push / pull directions Operating direction | 100N (Push), 50N (Pull) 100N | 30N (Push), 10N (Pull) 20N | — 29.4N |
| Environmental performance | Cold | -40°C 500h | -40°C 96h | | |
| | Dry heat | 85°C 500h | 85°C 96h | 90°C 96h | |
| | Damp heat | 60°C, 90 to 95%RH 500h | 60°C, 90 to 95%RH 96h | | |
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Note

● Indicates applicability to all products in the series.

Multi Control Devices
Variable Resistor Type
Switch Type

Switch Type / 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 |
| RKJXS | 350±10°C | 3 ⁺¹ ₋₀ s | 2 time max. |

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 ϕ 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 |
|-------------------------|-------|-------|-------|-------|--------|--------|-----|-----|--------|----------------|
| RKJXS | 260°C | 230°C | 150°C | 150°C | 2 min. | — | 10s | 40s | 4 min. | 1 time |
| SLLB5 | 250°C | 230°C | 150°C | 150°C | — | 2 min. | — | 30s | — | 1 time |
| SKRH, SLLB, SRBE | 260°C | 230°C | 180°C | 150°C | 2 min. | — | — | 40s | — | 1 time |

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.