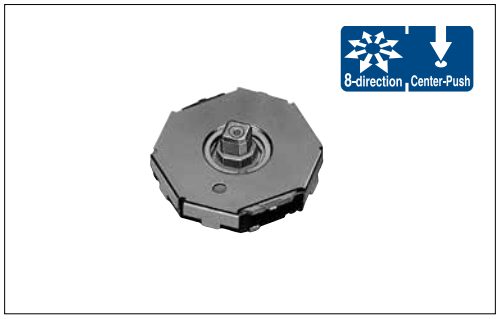
# RKJXS 8-directional Stick Switch (with Center-push Function)

## 8-direction center push type switch in 2.3mm low-profile design




### Typical Specifications

| Items | | Specifications |
|---|---|---|
| Rating (max.) (Resistive load) | | 10mA 5V DC |
| Switch ON position (8-direction) | | Each direction 7° max. |
| Travel (Center-push) | | 0.3±0.2mm |
| Operating life | Each direction | 500,000 cycles |
| | Center-push | 500,000 cycles |

### Product Line

| Product No. | Maximum resolution | Operating force (N) | | Minimum order unit (pcs.) | |
|---|---|---|---|---|---|
| | | Direction | Center-push | Japan | Export |
| **RKJXS1004001** | 8-direction | 0.8±0.5 | 2.5±1.5 | 3,800 | 3,800 |

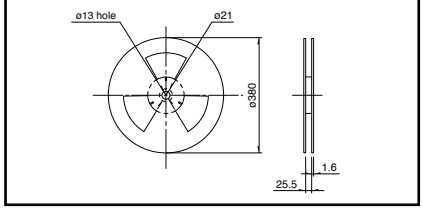
### Packing Specifications

Taping

| Number of packages (pcs.) | | | Tape width (mm) | Export package measurements(mm) |
|---|---|---|---|---|
| 1 reel | 1 case / Japan | 1 case / export packing | | |
| 950 | 3,800 | 3,800 | 24 | 405×405×162 |

Unit:mm

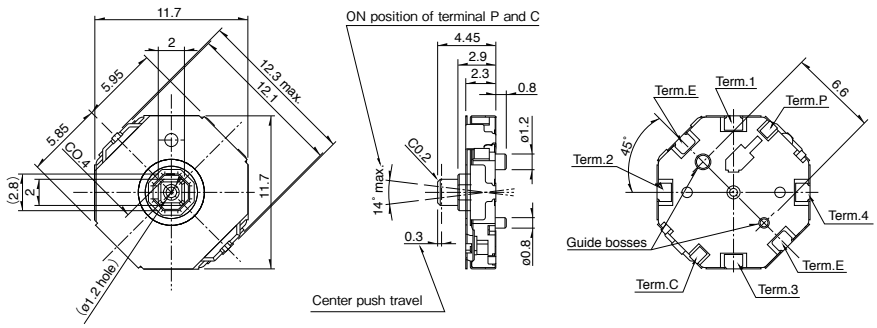
Reel size

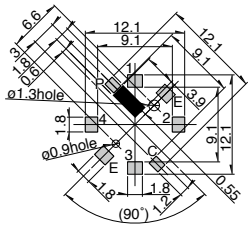



### Dimensions

Unit:mm

| Style | PC board mounting hole dimensions (Viewed from mounting side) |
|---|---|



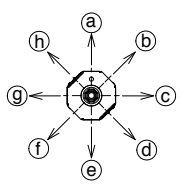




Shaded area: Solder land
Blacked out area: Wiring prohibited area

### Output Relation Chart Between Lever Position and ON Position.

| The direction of the operation \ Term. | 1 | 2 | 3 | 4 | C | P | E |
|---|---|---|---|---|---|---|---|
| a | △ | △ | ● | △ | ● | ● | ○ |
| b | △ | △ | ● | ● | ● | ● | ○ |
| c | △ | △ | △ | ● | ● | ● | ○ |
| d | ● | △ | △ | ● | ● | ● | ○ |
| e | ● | △ | △ | △ | ● | ● | ○ |
| f | ● | ● | △ | △ | ● | ● | ○ |
| g | △ | ● | △ | △ | ● | ● | ○ |
| h | △ | ● | ● | △ | ● | ● | ○ |
| Center Push | △ | △ | △ | △ | ● | ● | ○ |
| Free | ○ | ○ | ○ | ○ | ○ | △ | ○ |

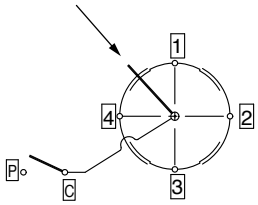
●:ON
△:OFF
○:Not specified
※ Term. E: Ground terminal



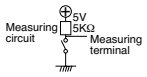

Operating direction of lever.

### Circuit Diagram

Operating direction of lever. (contact points)




Refer to P.451 for soldering conditions.

| 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℃ to +70℃ | −20℃ to +70℃ | −40℃ to +85℃ |
| 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) | | | ★2 | ★2 | ★2 |
| 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 | 100N (Push), 50N (Pull) | 30N (Push), 10N (Pull) | — |
| | | Operating direction | 100N | 20N | 29.4N |
| Environmental performance | Cold | | −40℃ 500h | −40℃ 96h | |
| | Dry heat | | 85℃ 500h | 85℃ 96h | 90℃ 96h |
| | Damp heat | | 60℃, 90 to 95%RH 500h | 60℃, 90 to 95%RH 96h | |
| Page | | | 442 | 443 | 444 |



Note

● Indicates applicability to all products in the series.

## Reference for Manual Soldering

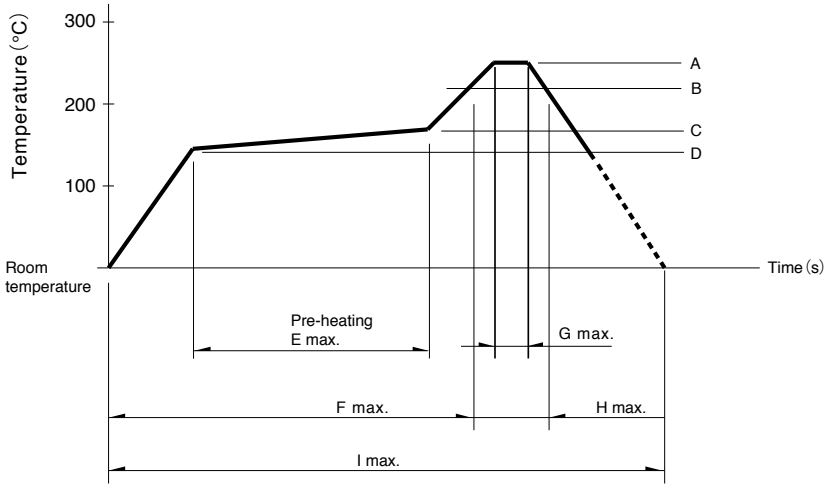
| Series | Tip temperature | Soldering time | No. of solders |
|---|---|---|---|
| **RKJXT1F, RKJXM, RKJXL, SLLB, SLLB5, SRBE, SKRH** | 350±5℃ | 3s max. | 1 time |
| **RKJXS** | 350±10℃ | $3^{+1}_{-0}$ s | 2 time max. |

## Reference for Dip Soldering

| Series | Preheating | | Dip soldering | | No. of solders |
|---|---|---|---|---|---|
| | Soldering surface temperature | Heating time | Soldering temperature | Soldering time | |
| **RKJXT1F, RKJXM** | 100℃ max. | 2 min. max. | 260±5℃ | 5±1s | 2 time max. |
| **RKJXL** | 120℃ max. | 70s max. | 260℃ max. | 6s max. | 2 time max. |

## Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple φ0.1 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℃ | 230℃ | 150℃ | 150℃ | 2 min. | — | 10s | 40s | 4 min. | 1 time |
| **SLLB5** | 250℃ | 230℃ | 150℃ | 150℃ | — | 2 min. | — | 30s | — | 1 time |
| **SKRH, SLLB, SRBE** | 260℃ | 230℃ | 180℃ | 150℃ | 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.