



Detector

Slide

Push

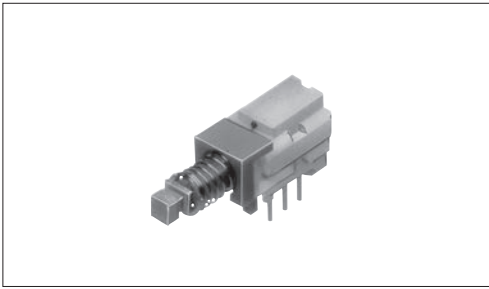
Rotary

Power

Dual-In-Line Package Type

Horizontal Type

Vertical Type



Typical Specifications

| Items | | Specifications |
|---|--------------|-----------------------------|
| Rating (max.)/(min.) (Resistive load) | | 0.1A 30V DC / 50μA 3V DC |
| Contact resistance (Initial/After operating life) | | 20mΩ max. / 40mΩ max. |
| Operating forces | 2-pole | 1.5±1N |
| | 4-pole | 2.3±1N |
| Operating life | Without load | 10,000 cycles |
| | With load | 10,000 cycles (0.1A 30V DC) |

Product Line

| Changeover timing | Travel (mm) | Total travel (mm) | Mounting method | Poles | Operation | Terminal type | Minimum order unit (pcs.) | | Product No. |
|-------------------|-------------|-------------------|-----------------|-------|-----------|---------------|---------------------------|--------|-------------------|
| | | | | | | | Japan | Export | |
| Non shorting | 2 | 3 | PC board | 2 | Latching | Straight | 100 | 3,000 | SPUJ190900 |
| | | | | | | Snap-in | | | SPUJ191000 |
| | | | | | Momentary | Straight | | | SPUJ191500 |
| | | | | | | Snap-in | | | SPUJ191900 |
| | | | | 4 | Latching | Straight | | 2,000 | SPUJ193700 |
| | | | | | | Snap-in | | | SPUJ193900 |
| Momentary | Straight | SPUJ194500 | | | | | | | |

Note

Please contact us for automotive use.

Packing Specifications

Bulk

| Product No. | Number of packages (pcs.) | | Export package measurements (mm) |
|---|---------------------------|-------------------------|----------------------------------|
| | 1 case / Japan | 1 case / export packing | |
| SPUJ190900, SPUJ191000, SPUJ191500, SPUJ191900 | 600 | 3,000 | 400×270×290 |
| SPUJ193700, SPUJ193900, SPUJ194500 | 400 | 2,000 | |

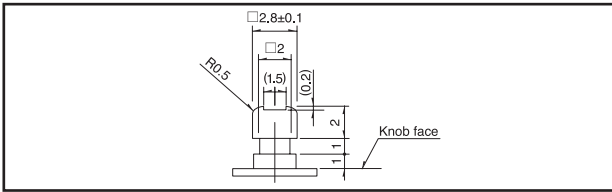
Dimensions

Unit:mm

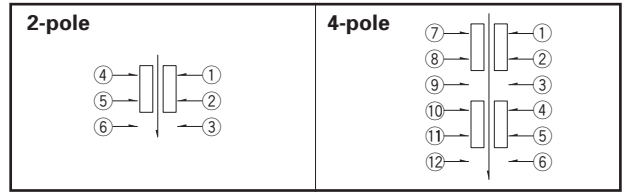
| Style | PC board mounting hole dimensions (Viewed from the direction A) | |
|------------------------------|---|--------------------------------|
| <p>2-pole, 4-pole</p> | <p>Straight terminal</p> | <p>Snap-in terminal</p> |

■ Actuator Configuration at Front Edge

Unit:mm



■ Circuit Diagram (Viewed from Direction A)



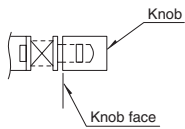
■ Attached Parts

Unit:mm

| Knob outline drawing | Model |
|----------------------|------------------------|
| <p>Color:Black</p> | <p>UJ206022</p> |

Notes











1. Other knob varieties are also available. Please inquire.
2. We recommend the use of adhesive to secure the knob when mounting onto switches.



Detector
Slide
Push
Rotary
Power
Dual-In-line Package Type
Horizontal Type
Vertical Type

Push Switches

List of Varieties

| Series | | Horizontal | | | | | |
|--------------------------------|---|---|---|---|---|---|--|
| | | SPPJ3 | SPPJ2 | SPUJ※ | SPUN | SPUN medium current※ | |
| Photo | |  |  |  |  |  | |
| Dimensions (mm) | W | 5 or 6.6 | 7.2 | 7.5 | 10 | | |
| | D | 12 | | 15.2 22.7 | 24 36 | | |
| | H | 8.3 | 9.6 | 8.8 | 13 | | |
| Travel (mm) | | 2.5 | | 2 | 2.5 | | |
| Total travel (mm) | | 3.5 | | 3 | 3.5 | | |
| Number of poles | | 1 2 | 2 | 2 4 | | | |
| Operating temperature range | | -40°C to +85°C | | -10°C to +60°C | | | |
| Automotive use | | ● | ● | — | — | — | |
| Life cycle | |  |  |  |  |  | |
| Rating (max.) (Resistive load) | | 0.2A 30V DC | | 0.1A 30V DC | | 1A 25V DC | |
| Rating (min.) (Resistive load) | | 50μA 3V DC | | | | 1A 25V DC | |
| Durability | Operating life without load | 10,000 cycles 40mΩ max. | | | 30,000 cycles 40mΩ max. | 10,000 cycles 40mΩ max. | |
| | Operating life with load (at max. rated load) | 10,000 cycles 40mΩ max. | | | | 5,000 cycles 40mΩ max. | |
| Electrical performance | Initial contact resistance | 20mΩ max. | | | | | |
| | Insulation resistance | 100MΩ min. 500V DC | | | | | |
| | Voltage proof | 500V AC for 1minute | | | | | |
| Mechanical performance | Terminal strength | 5N for 1minute | | | | | |
| | Actuator strength | Operating direction | 50N | 30N | 50N | | |
| | | Pulling direction | — | — | 50N | | |
| Environmental performance | Cold | -40°C 96h | -20°C 96h | | | | |
| | Dry heat | 85°C 96h | | | | | |
| | Damp heat | 40°C, 90 to 95%RH 96h | | | | | |
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| | |
|------------------------------------|-----|
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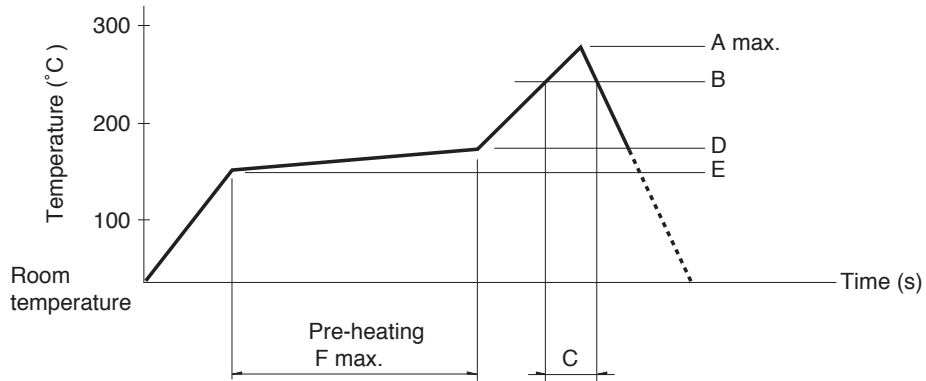
Notes

- ※ The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
- Indicates applicability to all products in the series.

Push Switches Soldering Conditions

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 (Reflow type) | A (°C) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|-------------------|--------|-------|--------|--------|-------|
| SPEG | 260 | 230 | 40 | 180 | 150 | 120 |
| SPEJ | | | | | | |
| SPEF | | | | | | |
| SPEH | | | | | | |

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. Prior verification of soldering condition is highly recommended.

Reference for Hand Soldering

| Series | Soldering temperature | Soldering time |
|---|-----------------------|----------------|
| SPPJ3, SPPJ2, SPUN, SPPH4, SPPH1 | 350±10°C | 3+1/0s |
| SPED2, SPED4 | 350±10°C | 3±0.5s |
| SPEJ | 350±10°C | 4s max. |
| SPEG, SPEF | 350±5°C | 3s max. |
| SPEH, SPPH2 | 350°C max. | 3s max. |
| SPUJ | 300±10°C | 3+1/0s |

Reference for Dip Soldering

(For PC board terminal types)

| Series | Items | | Dip soldering | |
|---|------------------------|-----------------|-----------------------|-----------------------|
| | Preheating temperature | Preheating time | Soldering temperature | Duration of immersion |
| SPPJ3 | 100°C max. | 60s max. | 260±5°C | 5±1s |
| SPUN | 100°C max. | 60s max. | 260±5°C | 10±1s |
| SPUJ, SPPH2, SPPH4 | — | | 260±5°C | 5±1s |
| SPPJ2, SPPH1, SPED2, SPED4, SPEF | — | | 260±5°C | 10±1s |