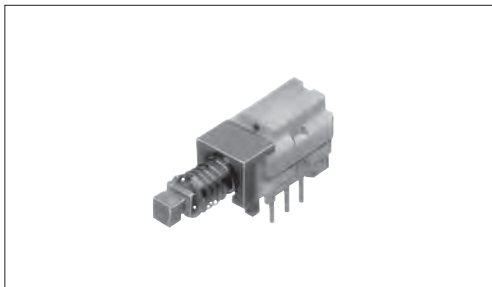


SPUJ 2mm-travel Horizontal Type

Horizontal type suitable for multiple circuits



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 | 600 | 3,000 | SPUJ190900 |
| | | | | | | Snap-in | | | SPUJ191000 |
| | | | | | Momentary | Straight | | | SPUJ191500 |
| | | | | | | Snap-in | | | SPUJ191900 |
| | | | | 4 | Latching | Straight | 400 | 2,000 | SPUJ193700 |
| | | | | | | Snap-in | | | SPUJ193900 |
| Momentary | Straight | SPUJ194500 | | | | | | | |

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> |

SPUJ 2mm-travel Horizontal Type

Detector

Slide

Push

Rotary

Power

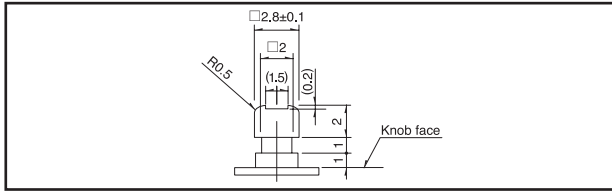
Dual-in-line
Package Type

Horizontal
Type

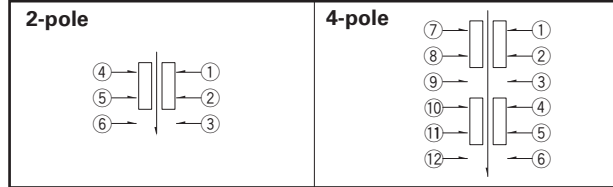
Vertical
Type

Actuator Configuration at Front Edge

Unit:mm



Circuit Diagram (Viewed from Direction A)



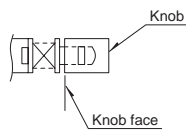
Knob Lineup

Unit:mm

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

Notes

We recommend the use of adhesive to secure the knob when mounting onto switches.













Push Switches

List of Varieties

| |
|------------------------|
| Detector |
| Slide |
| Push |
| Rotary |
| Power |
| Push-line Package Type |

| |
|-----------------|
| Horizontal Type |
| Vertical Type |

| 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 | | | | — | |
| 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 | | | | | |
| Page | | 111 | 113 | 115 | 117 | | |

| | |
|------------------------------------|-----|
| Push Switches Soldering Conditions | 130 |
| Push Switches Cautions | 131 |

Note

● Indicates applicability to all products in the series.

Push Switches / Soldering Conditions

Detector

Slide

Push

Rotary

Power

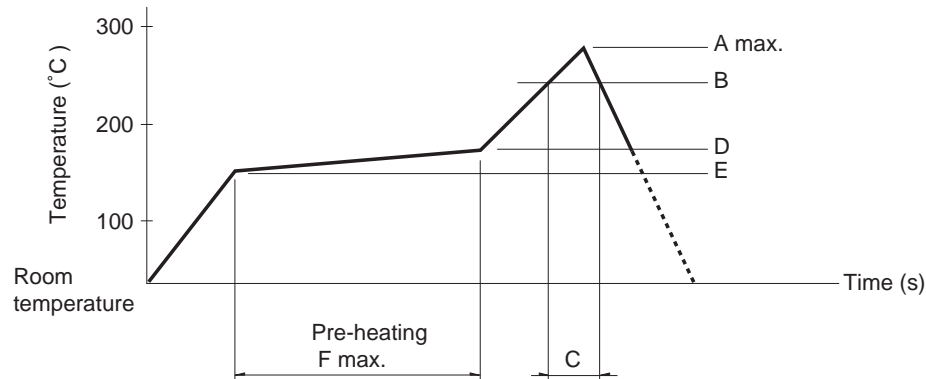
Dual-in-line
Package Type

Horizontal
Type

Vertical
Type

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) |
|----------------------|-------------------|--------|-------|--------|--------|-------|
| SPEJ | 260 | 230 | 40 | 180 | 150 | 120 |
| 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, SPUJ, SPPH4, SPPH1 | 350±10°C | 3+1/0s |
| SPED2, SPED4 | 350±10°C | 3±0.5s |
| SPEJ | 350±10°C | 4s max. |
| SPEF | 350±5°C | 3s max. |
| SPEH | 350°C max. | 3s max. |

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, SPPH4 | — | — | 260±5°C | 5±1s |
| SPPJ2, SPPH1, SPED2, SPED4, SPEF | — | — | 260±5°C | 10±1s |

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