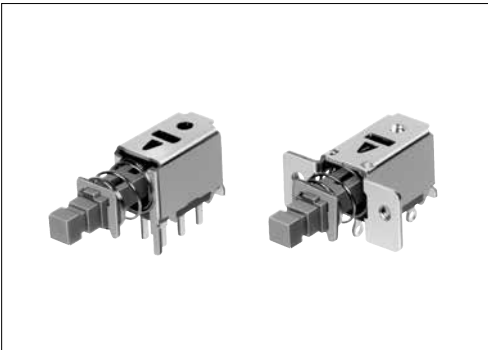


# SPPJ2 2.5mm-travel Horizontal Type

Switches with a lever height of 5.5mm, directly mountable onto set product



## Typical Specifications

| Items   |              | Specifications              |
|---|--------------|-----------------------------|
| Rating (max.)/(min.) (Resistive load)             |              | 0.2A 30V DC / 50μA 3V DC    |
| Contact resistance (Initial/After operating life) |              | 20mΩ max. / 40mΩ max.       |
| Operating force                                   |              | 3±1.5N                      |
| Operating life                                    | Without load | 10,000 cycles               |
|   | With load    | 10,000 cycles (0.2A 30V DC) |

## Product Line

| Changeover timing | Travel (mm) | Total travel (mm) | Mounting method | Poles | Operation | Terminal type | Minimum order unit (pcs.) |        | Product No.       | Drawing No. |
|-------------------|-------------|-------------------|-----------------|-------|-----------|---------------|---------------------------|--------|-------------------|-------------|
|                   |             |                   |                 |       |           |               | Japan                     | Export |                   |             |
| Non shorting      | 2.5         | 3.5               | PC board        | 2     | Latching  | For PC board  | 700                       | 3,500  | <b>SPPJ222200</b> | 1           |
|                   |             |                   |                 |       | Momentary |               |                           |        | <b>SPPJ223200</b> |             |
|                   |             |                   | M2-screw        |       | Latching  | For Lead      | 500                       | 2,500  | <b>SPPJ225800</b> | 2           |
|                   |             |                   |                 |       | Momentary |               |                           |        | <b>SPPJ226400</b> |             |

## Packing Specifications

Bulk

| Product No.                            | Number of packages (pcs.) |                         | Export package measurements (mm) |
|--|---------------------------|-------------------------|----------------------------------|
|  | 1 case / Japan            | 1 case / export packing |                                  |
| <b>SPPJ222200</b><br><b>SPPJ223200</b> | 700                       | 3,500                   | 400×270×290                      |
| <b>SPPJ225800</b><br><b>SPPJ226400</b> | 500                       | 2,500                   |                                  |

## Dimensions

Unit:mm

| No. | Style                      | PC board mounting hole dimensions (Viewed from the direction A) |
|-----|----------------------------|---|
| 1   | <p><b>For PC board</b></p> |   |

# SPPJ2 2.5mm-travel Horizontal Type

Detector

Slide

Push

Rotary

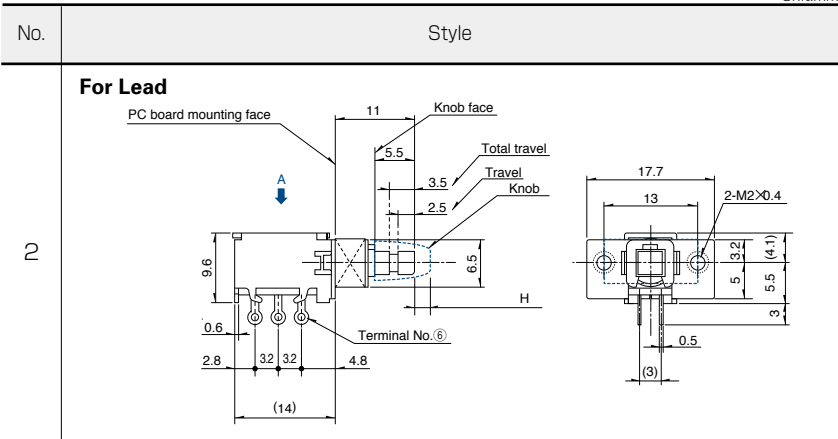
Power

Dual-in-line  
Package Type

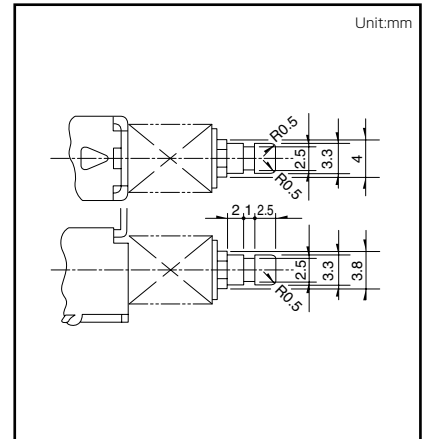
Horizontal  
Type

Vertical  
Type

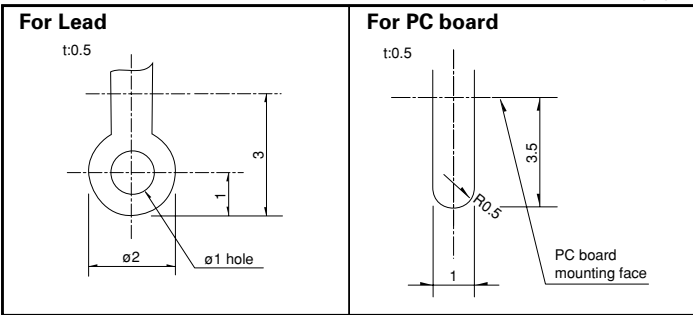
## ■ Dimensions



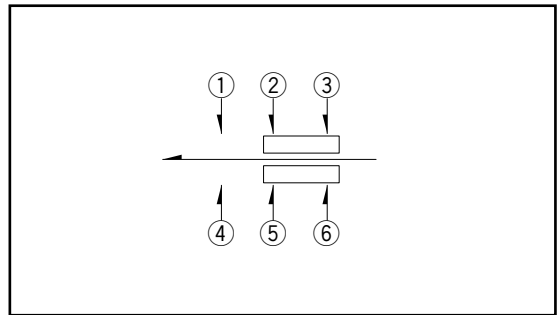
## ■ Actuator Configuration at Front Edge



## ■ Terminal Configuration



## ■ Circuit Diagram (Viewed from Direction A)



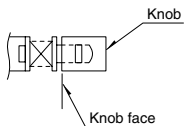
## ■ Attached Parts Please specify required knob.

Unit:mm

| Knob outline drawing                  | Model           | Knob attachment height (H) |
|---------------------------------------|-----------------|----------------------------|
| <p>Square knob</p> <p>Color:Black</p> | <b>UE201011</b> | 5                          |
| <p>Round knob</p> <p>Color:Black</p>  | <b>UE200011</b> | 9                          |











## 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.



# 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<br>22.7  | 24<br>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<br>2  | 2   | 2<br>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   |   |

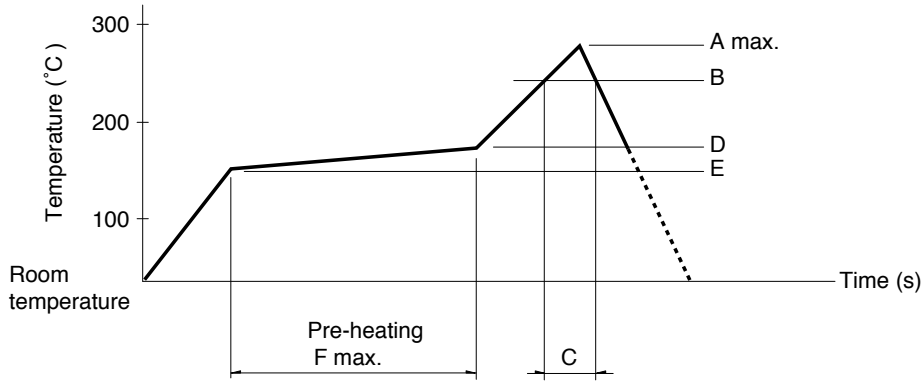
|                                    |     |
|------------------------------------|-----|
| Push Switches Soldering Conditions | 130 |
| Push Switches Cautions             | 131 |

### Note

● Indicates applicability to all products in the series.

## Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple  $\phi$  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)<br>3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|-------------------|--------|-------|--------|--------|-------|
| <b>SPEJ</b>          | 260               | 230    | 40    | 180    | 150    | 120   |
| <b>SPEF</b>          |                   |        |       |        |        |       |
| <b>SPEH</b>          |                   |        |       |        |        |       |

### 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 |
|---|-----------------------|----------------|
| <b>SPPJ3, SPPJ2, SPUN, SPPH4, SPPH1</b> | 350±10°C              | 3+1/0s         |
| <b>SPED2, SPED4</b>                     | 350±10°C              | 3±0.5s         |
| <b>SPEJ</b>                             | 350±10°C              | 4s max.        |
| <b>SPEF</b>                             | 350±5°C               | 3s max.        |
| <b>SPEH</b>                             | 350°C max.            | 3s max.        |
| <b>SPUJ</b>                             | 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 |
| <b>SPPJ3</b>                            | 100°C max.             | 60s max.        | 260±5°C               | 5±1s                  |
| <b>SPUN</b>                             | 100°C max.             | 60s max.        | 260±5°C               | 10±1s                 |
| <b>SPUJ, SPPH4</b>                      | —                      |                 | 260±5°C               | 5±1s                  |
| <b>SPPJ2, SPPH1, SPED2, SPED4, SPEF</b> | —                      |                 | 260±5°C               | 10±1s                 |