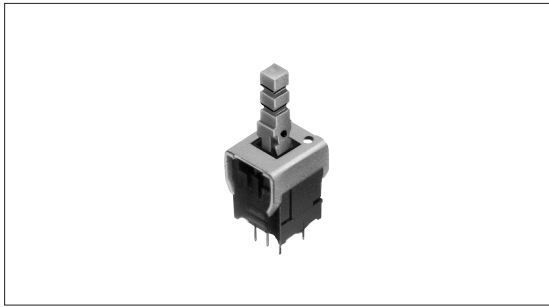


Push Switch 2.5mm-travel Vertical Type

SPEC Series



Vertical type, widely applicable to home and industrial electronic equipment.



Typical Specifications

| Items | | Specifications |
|---|--------------|-------------------------------------|
| Rating (max.) / (min.) (Resistive load) | | 0.1A 30V DC/50 μ A 3V DC |
| Contact resistance (Initial / After operating life) | | 30m Ω max./50m Ω max. |
| Operating force | | 2 \pm 1N |
| Operating life | Without load | 10,000cycles |
| | With load | 10,000cycles (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. |
|-------------------|-------------|-------------------|-----------------|-------|-----------|---------------|---------------------------|-------------|
| Non shorting | 2.5 | 3.4 | PC board | 2 | Latching | Straight | 2,000 | SPEC121100 |
| | | | | | | Snap-in | | SPEC121300 |

Packing Specifications

Bulk

| Number of packages (pcs.) | | Export package measurements (mm) |
|---------------------------|------------------------|----------------------------------|
| 1 case /Japan | 1 case /export packing | |
| 400 | 2,000 | 400 \times 270 \times 290 |

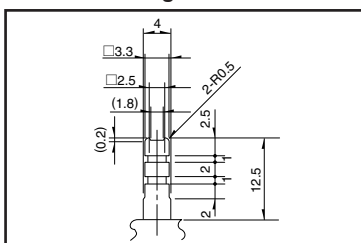
Dimensions

Unit:mm

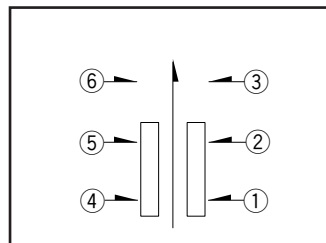
| Style | PC board mounting hole dimensions (Viewed from the direction A) | |
|-------|---|-----------------------------|
| | Straight terminal | Snap-in terminal |

Actuator Configuration at Front Edge

Unit:mm

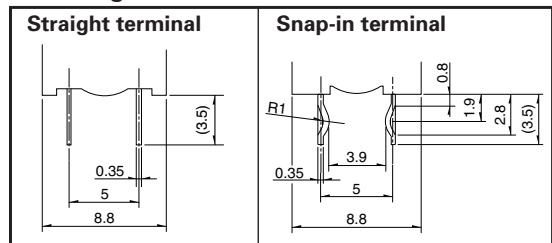


Circuit Diagram (Viewed from Direction A)



Terminal Configuration

Unit:mm



Notes

- Products other than those listed in the above chart are also available. Please contact us for details.
- Please place purchase orders per minimum order unit N (integer).

Refer to P.126 for knobs.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Horizontal
Type

Vertical
Type



Automotive
Use

List of Varieties

Detector
Push
 Slide
 Rotary
 Encoders
 Power
 Dual-in-line Package Type
 TACT Switch™
 Custom-Products

Horizontal Type
 Vertical Type

| Series | | SPPH2 | SPPH4 | SPPH1 | SPEC | SPED2 | SPED3 | SPED4 | SPED5 | SPEF | | |
|--------------------------------|--|---------------------|-----------------------------|---------------|--------------------|-------------------------|-------------|-----------------|-----------------|------------------|------------------|--|
| Photo | | | | | | | | | | | | |
| Travel (mm) | | 1 | 2.2 | 1.5 | 2.5 | — | | | | 1.5 | | |
| Total travel (mm) | | 1.5 | 3 | 2.5 | 3.4 | 4.5 | 3.8 | | | 2.7 | | |
| Number of poles | | 2 | | | | 1 | | | | | | |
| Dimensions (mm) | W | 6.5 | 8.5 | 10 | 12 | 14 | | | 13.5 | 9.4 | | |
| | D | 6 | 6.5 | 10 | | 16.8 | 18 | | 18.2 | 9 | | |
| | H | 6.5 | 8.5 | | 12.5 | 26.7 | 20.7 | 16.97 | 20.7 | 6.9 | | |
| Operating temperature range | | -10°C to +60°C | | | -40°C to +85°C | | | | | | | |
| Automotive use | | — | | ● | ● | ● | ● | ● | ● | ● | ● | |
| Rating (max.) (Resistive load) | | 0.1A 12V DC | 0.1A 30V DC | | | 1A 14.5V DC | | | | | | |
| Rating (min.) (Resistive load) | | 50μA 3V DC | | | | | 1A 14.5V DC | | | | | |
| Electrical performance | Initial contact resistance | 30mΩ max. | 100mΩ max. | 20mΩ max. | 30mΩ max. | 100mΩ max. | | | | | | |
| | Insulation resistance | 100MΩ min. 500V DC | | | | 3MΩ min. 500V DC | | | 3MΩ min. 100VDC | | | |
| | Voltage proof | 500V AC for 1minute | | | | 100V AC for 1minute | | | | | | |
| Mechanical performance | Terminal strength | | 5N for 1minute | | 3N for 1minute | | — | | | | | |
| | Actuator strength | Operating direction | 30N | | 50N | | | | 90N | | | |
| | | Pulling direction | — | 10N | — | 50N | — | | | | | |
| Durability | Operating life without load | 10,000cycles | 10,000cycles | 10,000cycles | 10,000cycles | 30,000cycles 100mΩ max. | | | | | | |
| | Operating life without load Load:as rating | 50mΩ max. | 100mΩ max. | 40mΩ max. | 50mΩ max. | | | | | | | |
| Environmental performance | Cold | | -20±2°C for 96h | | | -40±2°C for 96h | | | | | | |
| | Dry heat | | 85±2°C for 96h | | | | | | | | | |
| | Damp heat | | 40±2°C, 90 to 95%RH for 96h | | | | | | | | | |
| Soldering | Manual soldering | 350°C max. 3s max. | 350±10°C 3 ⁺ 1s | | | 350±10°C 3±0.5s ※3 | — | 350±10°C 3±0.5s | — | 350±5°C 3s max. | | |
| | Dip soldering | 260±5°C 5±1s | | 260±5°C 10±1s | 260°C max. 5s max. | 260±5°C 10±1s ※3 | — | 260±5°C 10±1s | — | 260±5°C 10±1s ※4 | | |
| | Reflow soldering | — | | | | | | | | | Please see P.127 | |
| Page | | 115 | 117 | 118 | 120 | 121 | 122 | | | 124 | | |

- Push Switches Attached Parts126
- Push Switches Products Caution128

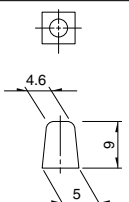
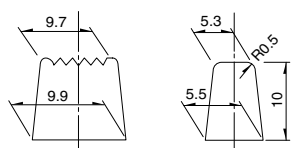
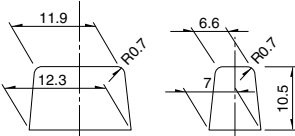
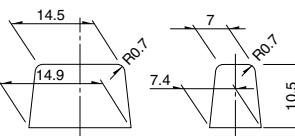
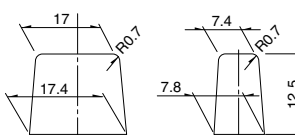
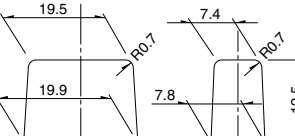
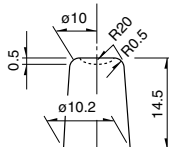
Notes

- ※3. Applicable to SPED220200(PC board type) only.
- ※4. Applicable to dip soldering.
- marks in "Available for automotive use" indicate that all of the series products can work at the operating temperature range from -40°C to +85°C.

Attached Parts

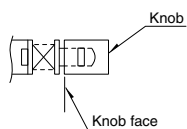
Please specify required knob.

Unit:mm

| Knob outline drawing | Variety | | Series |
|--|-----------------------|----------------------------------|---------------|
| | Color | Model | |
|  | Black Red White | UJ206022 UJ206020 UJ206026 | SPPJ3 SPUJ |
| <p>Key pitch 10mm</p> <p>Square knob</p>  | | 4093-1 4093-2 4093-3 | |
| <p>Key pitch 12.5mm</p> <p>Square knob</p>  | | UE201011 UE201012 UE201013 | |
| <p>Key pitch 15mm</p> <p>Square knob</p>  | | UE202011 UE202012 UE202013 | SPPJ2 SPUP |
| <p>Key pitch 17.5mm</p> <p>Square knob</p>  | | UE203011 UE203012 UE203013 | SPUN SPEC |
| <p>Key pitch 20mm</p> <p>Square knob</p>  | | UE204011 UE204012 UE204013 | |
| <p>Round knob</p>  | | UE200011 UE200012 UE200013 | |

Note

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



Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Horizontal
Type

Vertical
Type