

Two poles and two contact points, Comfortable momentary operation with click feel



Detector

Slide

Push

Rotary

Power

Dual-in-line Package Type

Horizontal Type

Vertical Type



Typical Specifications

| Items | | Specifications |
|---|--------------|-----------------------------|
| Rating (max.) (Resistive load) | | 0.2A 14V DC |
| Contact resistance (Initial/After operating life) | | 150mΩ max. / 150mΩ max. |
| Operating forces | | 3.5±0.7N |
| Operating life | Without load | 10,000 cycles |
| | With load | 10,000 cycles (0.2A 14V DC) |

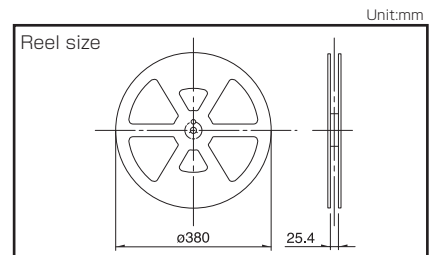
Product Line

| Travel (mm) | Poles | Positions | Minimum order unit (pcs.) | | Product No. |
|-------------|-------|-----------|---------------------------|--------|-------------------|
| | | | Japan | Export | |
| 1.7 | 2 | 2 | 500 | 2,000 | SPEJ110100 |

Packing Specifications

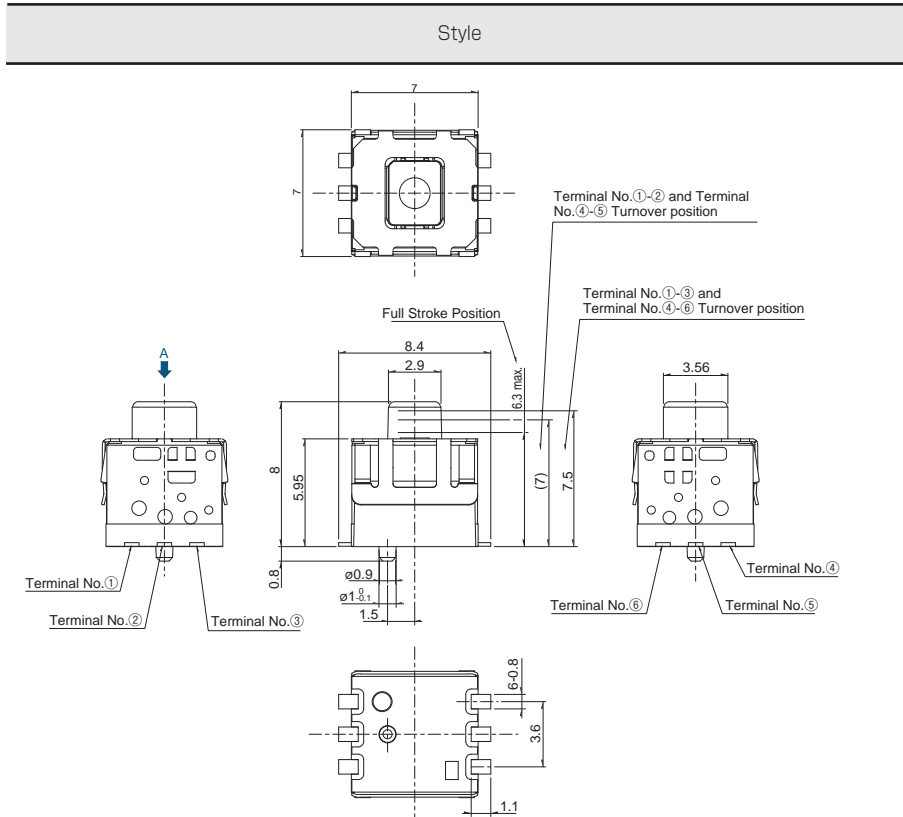
Taping

| Number of packages (pcs.) | | | Tape width (mm) | Export package measurements (mm) |
|---------------------------|---------------|------------------------|-----------------|----------------------------------|
| 1 reel | 1 case /Japan | 1 case /export packing | | |
| 500 | 1,000 | 2,000 | 24 | 404×397×140 |



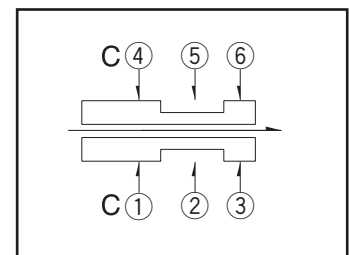
Dimensions

Unit:mm

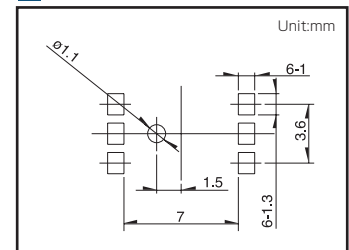


Circuit Diagram









(Viewed from Direction A)



Recommend Pattern



Refer to P.130 for soldering conditions.

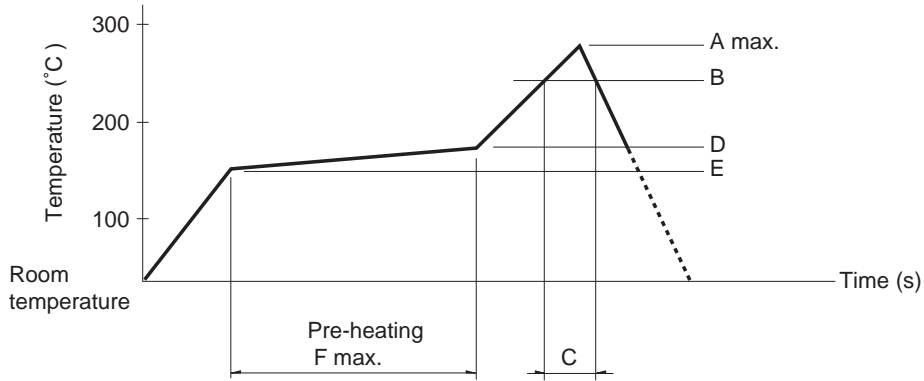
| Series | | Vertical | | | | |
|--------------------------------|---|---|---|---|---|-----|
| | | SPEH | SPEJ | SPPH4 | SPPH1 | |
| Photo | |  |  |  |  | |
| Dimensions (mm) | W | 6 | 7 | 6.5 | 10 | |
| | D | 6 | 7 | 8.5 | 10 | |
| | H | 5 | 5.95 | 8.5 | | |
| Travel (mm) | | — | — | 2.2 | 1.5 | |
| Total travel (mm) | | 1.6 | 1.7 | 3 | 2.5 | |
| Number of poles | | 1 | 2 | | | |
| Operating temperature range | | -40°C to +90°C | -40°C to +85°C | -10°C to +60°C | | |
| Automotive use | | ● | ● | — | ● | |
| Life cycle | |  |  |  |  | |
| Rating (max.) (Resistive load) | | 50mA 16V DC | 0.2A 14V DC | 0.1A 30V DC | | |
| Rating (min.) (Resistive load) | | 10μA 1V DC | — | 50μA 3V DC | | |
| Durability | Operating life without load | 100,000cycles 400mΩ max. | 10,000cycles 150mΩ max. | 10,000cycles 100mΩ max. | 10,000cycles 40mΩ max. | |
| | Operating life with load (at max. rated load) | 100,000cycles 400mΩ max. | 10,000cycles 150mΩ max. | 10,000cycles 100mΩ max. | 10,000cycles 40mΩ max. | |
| Electrical performance | Initial contact resistance | 200mΩ max. | 150mΩ max. | 100mΩ max. | 20mΩ max. | |
| | Insulation resistance | 100MΩ min. 100V DC | 100MΩ min. 500V DC | | | |
| | Voltage proof | 250V AC for 1minute | 500V AC for 1minute | | | |
| Mechanical performance | Terminal strength | — | — | 5N for 1minute | | |
| | Actuator strength | Operating direction | 50N | 49N | 30N | 50N |
| | | Pulling direction | — | — | 10N | — |
| Environmental performance | Cold | -40°C 1000h | -40°C 500h | -20°C 96h | | |
| | Dry heat | 90°C 1000h | 85°C 500h | 85°C 96h | | |
| | Damp heat | 60°C, 90 to 95%RH 1000h | 60°C, 90 to 95%RH 500h | 40°C, 90 to 95%RH 96h | | |
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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 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 |