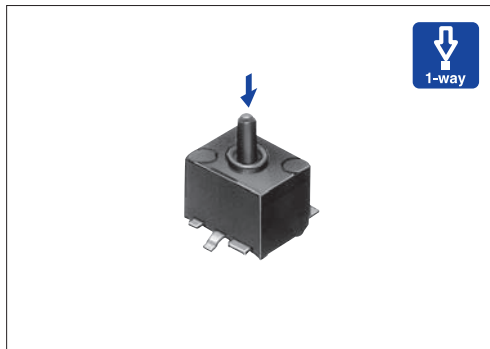


SPPW8 One-way Operation Type

One-way operation detector switch ideal for media detection



Typical Specifications



| Items | | Specifications |
|--------------------------------------------------------|--------------|-----------------------------------|
| Rating (max.)/(min.) (Resistive load) | | 0.1A 30V DC / 100 μ A 3V DC |
| Contact resistance (Initial / After operating life) | | 1 Ω max. / 2 Ω max. |
| Operating force | | 0.3N max. |
| Operating life | Without load | 100,000cycles |
| | With load | 100,000cycles (0.1A 30V DC) |

Product Line

| Poles | Positions | Terminal type | Slider height (mm) | ON start position (mm) | Total travel position (mm) | Minimum order unit (pcs) | | Product No. | Drawing No. |
|-------|-----------|--------------------------|-----------------------|---------------------------|-------------------------------|--------------------------|--------|-------------------|-------------|
| | | | | | | Japan | Export | | |
| 1 | 1 | For PC board (Reflow) | h=6.1 | h ₁ =5.6 | h ₂ =4.45 | 1,000 | 4,000 | SPPW812302 | 1 |
| | | For PC board (Dip) | | | | 4,000 | 20,000 | SPPW812300 | 2 |
| | | For PC board (Reflow) | h=6.55 | h ₁ =6.05 | h ₂ =4.85 | 1,000 | 4,000 | SPPW810201 | 1 |
| | | For PC board (Dip) | | | | 4,000 | 20,000 | SPPW810203 | 2 |
| | | For PC board (Reflow) | h=7.6 | h ₁ =7.1 | h ₂ =5.9 | 850 | 3,400 | SPPW811203 | 1 |
| | | For PC board (Dip) | | | | 4,000 | 20,000 | SPPW811200 | 2 |
| | | For PC board (Reflow) | 10.3 | 9.8 | 8.6 | | | SPPW810401 | 3 |
| | | For PC board (Dip) | | | | | | SPPW810400 | 4 |

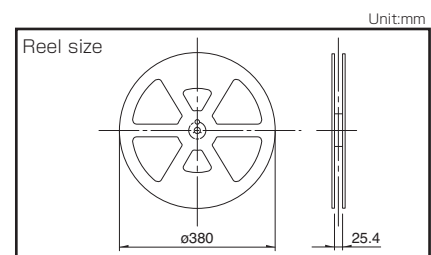
Note

Contact us for other slider height variations.

Packing Specifications

Taping

| Product No. | Number of packages (pcs.) | | | Tape width (mm) | Export package measurements (mm) |
|----------------------------------------|---------------------------|---------------|------------------------|--------------------|-------------------------------------|
| | 1 reel | 1 case /Japan | 1 case /export packing | | |
| SPPW812302 SPPW810201 | 1,000 | 2,000 | 4,000 | 24 | 406×406×160 |
| SPPW811203 | 850 | 1,700 | 3,400 | | |



Bulk

| Product No. | Number of packages (pcs.) | | Export package measurements (mm) |
|-------------------------------------------------------------------------------------------------------|---------------------------|------------------------|-------------------------------------|
| | 1 case /Japan | 1 case /export packing | |
| SPPW812300 SPPW810203 SPPW811200 SPPW810401 SPPW810400 | 4,000 | 20,000 | 400×270×290 |

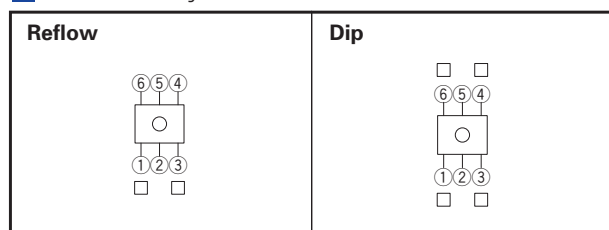
■ Dimensions

Unit:mm

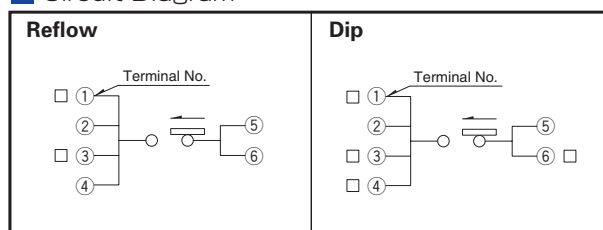
| No. | Style | PC board mounting hole dimensions (Viewed from direction A) |
|-----|---------------|----------------------------------------------------------------|
| 1 | Reflow | |
| 2 | Dip | |
| 3 | Reflow | |
| 4 | Dip | |

- Notes**
1. Dimensions drawing is for type with location lugs.
 2. Products without location lug are also available.

■ Terminal Layout (Viewed from Direction A)




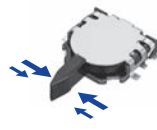
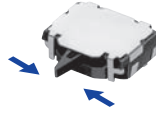
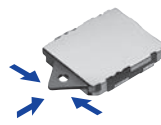
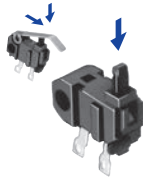







■ Circuit Diagram



- Notes**
1. □ Mark shows a cutting terminal.
 2. Contact us for other terminal types.

Detector Switches

List of Varieties

| Series | | General-purpose Type | | | | |
|-----------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| | | SPPW8 | SSCQ | SSCM | SPVL | SPPB |
| Photo | |  |  |  |  |  |
| Operation type | | One-way | Two-way Two-direction type | Two-way | Three-way | One-way Two-way |
| Dimensions (mm) | W | 5 | 3.8 | 5 | 5.55 | 6.3 |
| | D | 4 | 3.6 | 4 | 6.6 | 3 |
| | H | | 0.9 | 1.5 | 1 | 4.9 |
| Operating temperature range | | -10℃ to +60℃ | | | -40℃ to +85℃ | |
| Automotive use | | — | — | — |  |  |
| Life cycle (availability) | |  |  |  |  |  |
| Poles / Positions | | 1/1 | 1 / Two-direction type: 2-position each side | 1/2 | 1/1 | |
| Rating (max.) (Resistive load) | | 0.1A 30V DC | 1mA 5V DC | | | 0.1A 30V DC |
| Rating (min.) (Resistive load) | | 100μA 3V DC | 50μA 3V DC | | | |
| Durability | Operating life without load | 100,000cycles 2Ω max. | 50,000cycles 5Ω max. | | | 50,000cycles 2Ω max. |
| | Operating life with load Rating (max.) (Resistive load) | 100,000cycles 2Ω max. | 50,000cycles 5Ω max. | | | 50,000cycles 2Ω max. |
| Electrical performance | Initial contact resistance | 1Ω max. | 2Ω max. | | | 1Ω max. |
| | Insulation resistance | 100MΩ min. 100V DC | | | | |
| | Voltage proof | 100V AC for 1 minute | | | | |
| Mechanical performance | Terminal strength | 3N for 1minute | 0.5N for 1minute | | 1N for 1minute | 3N for 1minute |
| | Actuator strength | 10N | 1N | 2N | 5N | 10N |
| Environmental performance | Cold | -20℃ 96h | | | -40℃ 500h | |
| | Dry heat | 85℃ 96h | | | 85℃ 500h | |
| | Damp heat | 40℃, 90 to 95%RH 96h | | | 60℃, 90 to 95%RH 500h | |
| Operation force | | 0.3N max. | 0.35N max. | | | |
| Page | | 29 | 31 | 32 | 33 | 34 |

| | |
|----------------------------------------|----|
| Detector Switches Soldering Conditions | 73 |
| Detector Switches Cautions | 74 |

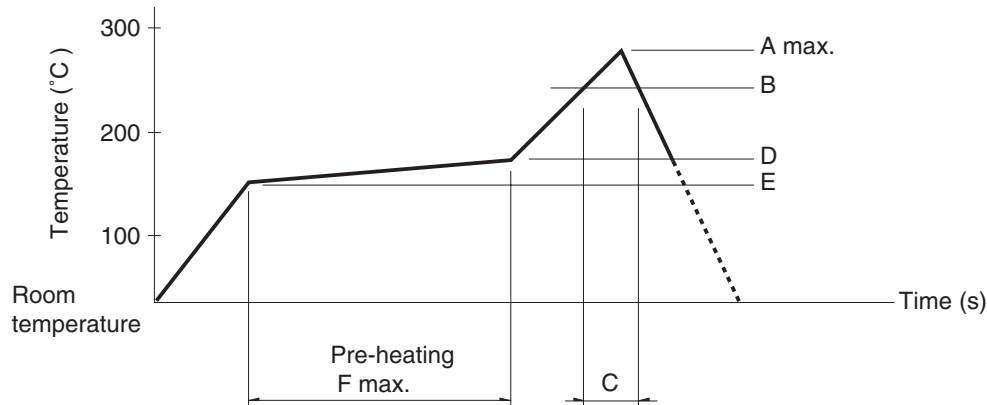
Note

● Indicates applicability to all products in the series.

Detector Switches Soldering Conditions

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) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|----------------|--------|-------|--------|--------|-------|
| SPPB | 250 | 230 | 40 | 180 | 150 | 120 |
| SPPW8 | | | 35 | | | |
| SPVE | 260 | | 40 | | | |
| SPVL | | | | | | |
| SPVM | | | | | | |
| SPVN | | | | | | |
| SPVR | | | | | | |
| SPVS | | | | | | |
| SPVT | | | | | | |
| SSCM | | | | | | |
| SSCQ | | | | | | |
| SPVQC, SPVQE | 250 | | | | | |

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, surface 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 |
|----------------------------------------------------------------------------------------|-----------------------|----------------|
| SPVS, SPVN, SPVT, SPVM, SPVR, SPVE, SPPW8, SSCQ, SSCM, SPVL, SSCT, SPVQC, SPVQE | 350±5°C | 3s max. |
| SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA | 300±10°C | 3 + 1 / 0s |
| SPPB (Reflow) | 300±5°C | 5s max. |
| SSCF, SPPB (For Lead, Dip) | 350±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 |
| SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA | 100±10°C | 60s max. | 260±5°C | 5±1s |
| SPPW8, SPPB | 100 °C max. | 60s max. | 255±5°C | 5±1s |
| SSCF | — | | 260±5°C | 5±1s |

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