

SPVQ6 Water-proof Type

Compact type with body size of 13.3×5.3×7mm



Detector

Slide

Push

Rotary

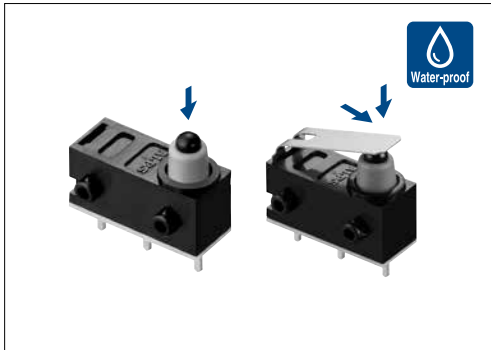
Power

Dual-in-line Package Type

General-purpose Type

Water-proof Type

Fast Switching Type



Typical Specifications

| Items | Specifications | | |
|---|--------------------------|-----------------------------|---|
| | Standard type | With internal resistor type | |
| Rating (max.)/(min.) (Resistive load) | 0.1A 12V DC / 50μA 5V DC | | |
| Contact resistance (Initial / After operating life) | 500mΩ max./1Ω max. | | |
| 電氣的出力 | — | Respond individually | |
| Operating force | Push type | Actuator type | |
| | 1±0.5N | 3N max. | |
| Operating life | Without load | 300,000cycles | |
| | With load | 300,000cycles (0.1A 12V DC) | — |

Product Line

| Poles | Positions | Change over timing | Operating part shape | Terminal type | Main body form | Minimum order Unit (pcs.) | | Product No. | Drawing No. |
|-------|-----------|--------------------|-----------------------------|-----------------|-------------------|---------------------------|--------|-------------------|-------------|
| | | | | | | Japan | Export | | |
| 1 | 2 | Non shorting | Push | For PC board | Boss - right side | 1,500 | 6,000 | SPVQ640102 | 1 |
| | | | | | Boss - left side | | | SPVQ640202 | 2 |
| | | | | | Boss - right side | | | SPVQ630104 | 3 |
| | | | | | Boss - left side | | | SPVQ630203 | 4 |
| | Press fit | | Without boss / Left bending | SPVQ6R * | 5 | | | | |

Note

This unit cannot be used in water (IP67 rating, except for terminal).

Packing Specifications

Tray

| Number of packages (pcs.) | | Export package measurements (mm) |
|---------------------------|------------------------|----------------------------------|
| 1 case /Japan | 1 case /export packing | |
| 1,500 | 6,000 | 540×360×270 |

Dimensions

Unit:mm

| No. | Style |
|-----|-------|
| 1 | |

Dimensions

Unit:mm

| No. | Style |
|-----|-------|
| 2 | |
| 3 | |
| 4 | |

- Detector
- Slide
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SPVQ6 Water-proof Type

Detector

Slide

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Power

Dual-in-line
Package Type

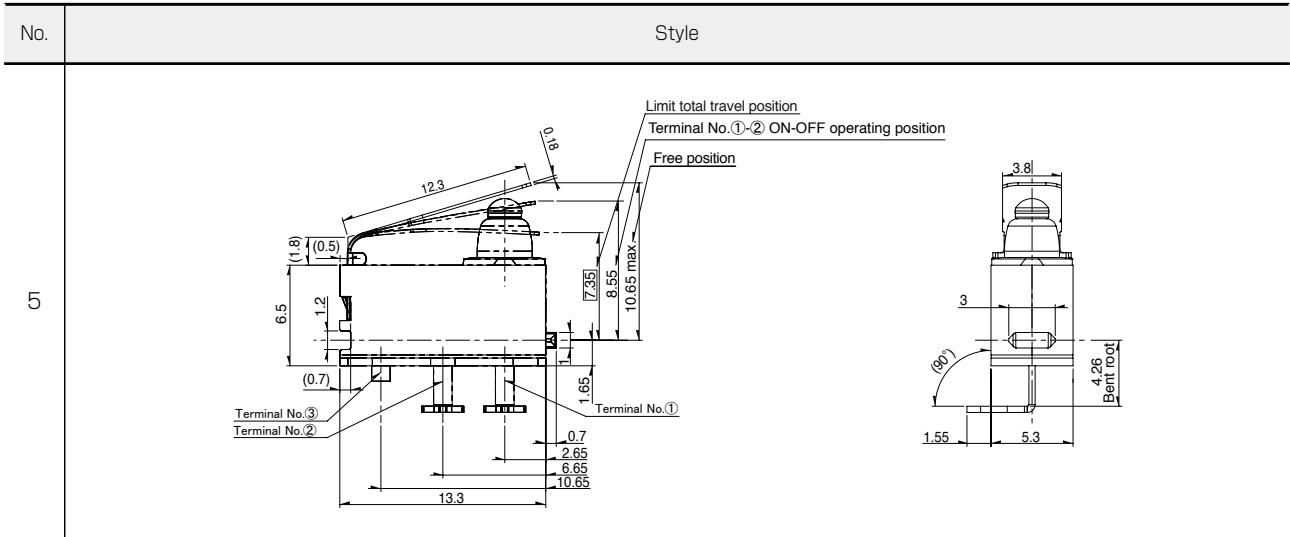
General-
purpose Type

Water-proof
Type

Fast Switching
Type

Dimensions

Unit:mm

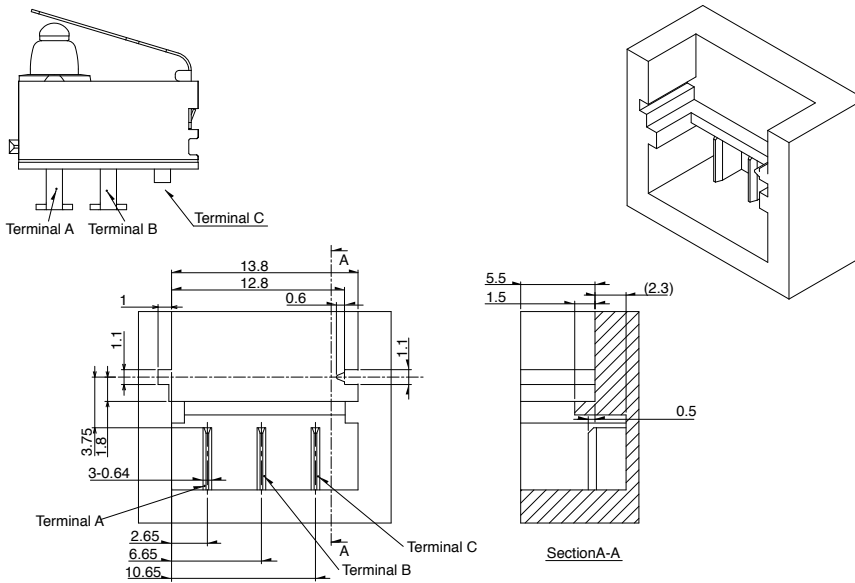


Recommended Unit Terminal Shape for Press-Fit Terminals (Normally Open)

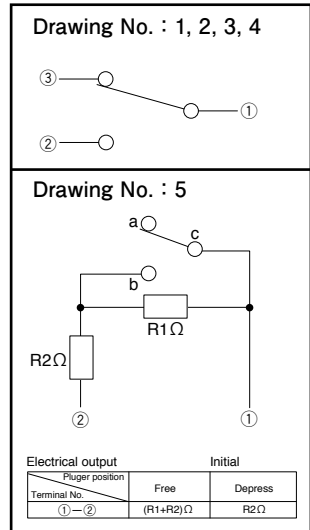
Unit:mm



SPVQ6R*


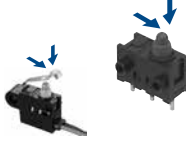








Circuit Diagram



Detector Switches

List of Varieties

| Series | | Water-proof Type | | | |
|--------------------------------|---|---|---|---|---|
| | | SPVQ1 | SPVQ3 | SPVQ6 | SPVQ7 |
| Photo | |  |  |  |  |
| Operation type | | One-way Two-way | Two-way | One-way Two-way | Two-way |
| Dimensions (mm) | W | 13.3 | 13 | 13.3 | 14.7 |
| | D | 5.8 | | 5.3 | 5.4 |
| | H | 8 | 8.35 | 7 | 6.7 |
| Operating temperature range | | -40°C to +85°C | | | |
| Automotive use | | ● | ● | ● | ● |
| Life cycle (availability) | |  |  |  |  |
| Poles / Positions | | 1/2 | 1/1 1/2 | 1/2 | 1/1 1/2 |
| Rating (max.) (Resistive load) | | 0.1A 12V DC | | | |
| Rating (min.) (Resistive load) | | 50μA 3V DC | 50μA 5V DC | | |
| Durability | Operating life without load | 300,000cycles 1Ω max. | | | |
| | Operating life with load Rating (max.) (Resistive load) | 300,000cycles 1Ω max. | | | |
| Electrical performance | Initial contact resistance | 500mΩ max. | | | |
| | Insulation resistance | 100MΩ min. 500V DC | | | |
| | Voltage proof | 500V AC for 1minute | | | |
| Mechanical performance | Terminal strength | 3N for 1minute | 3N for 1minute (with terminal) Wire strength 30N for 1minute (with wire) | 3N for 1minute | |
| | Actuator strength | 20N | | | |
| Environmental performance | Cold | -40°C 500h | | | |
| | Dry heat | 85°C 500h | | | |
| | Damp heat | 60°C, 90 to 95% RH 500h | | | |
| Operation force | | 2N max. 5.9N max. | 1±0.5N 3N max. | | 1±0.5N |
| Page | | 43 | 45 | 50 | 53 |

| | |
|--|----|
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| Detector Switches Cautions | 67 |

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