

One-way operation detector switch ideal for media detection



■ Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 30V DC / 100μA 3V DC
Contact resistance (Initial / After operating life)		1Ω max. / 2Ω 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)						SPPW810401	3
		For PC board (Dip)	10.3	9.8	8.6			SPPW810400	4

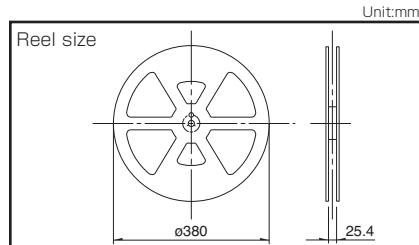
Note

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		

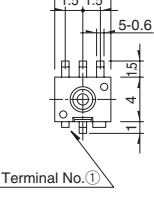
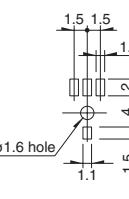
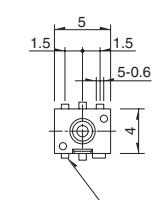
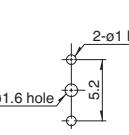
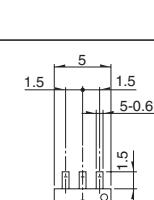
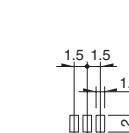
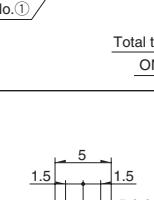
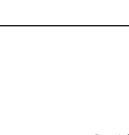


Bulk

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

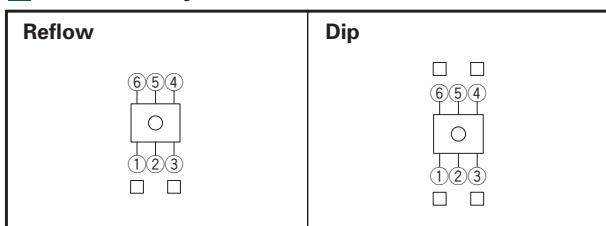
Unit:mm

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

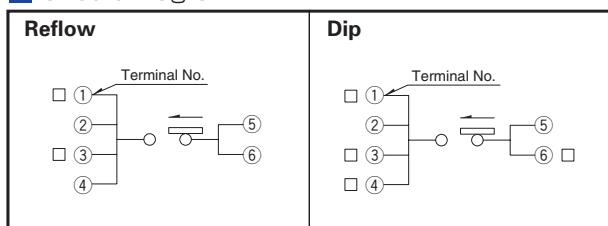
Notes

- 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°C to +60°C			-40°C to +85°C				
Automotive use		—	—	—	●	●			
Life cycle (availability)		 3	 3	 3	 3	 3			
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°C 96h			-40°C 500h				
	Dry heat	85°C 96h			85°C 500h				
	Damp heat	40°C, 90 to 95%RH 96h			60°C, 90 to 95%RH 500h				
Operation force		0.3N max.	0.35N max.						
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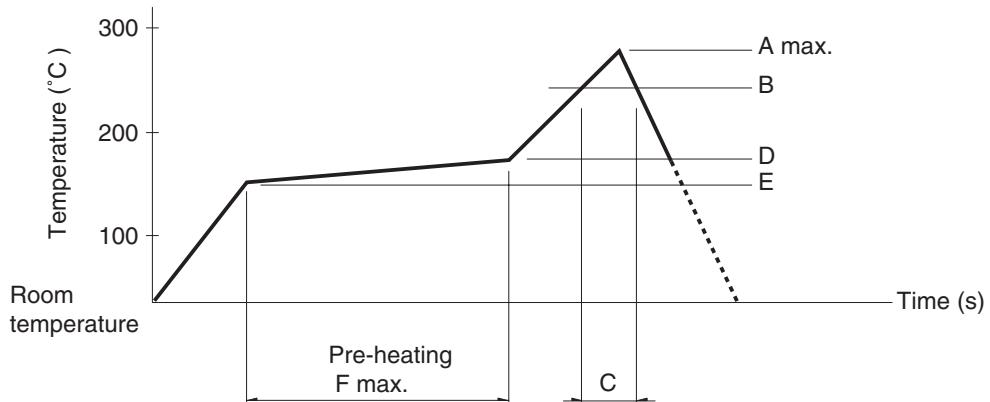
Note

- 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		40							
SPPW8			35							
SPVE	260		230				40	180	150	120
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	$350 \pm 5^\circ\text{C}$	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	$300 \pm 10^\circ\text{C}$	$3 + 1 / 0\text{s}$
SPPB (Reflow)	$300 \pm 5^\circ\text{C}$	5s max.
SSCF, SPPB (For Lead, Dip)	$350 \pm 10^\circ\text{C}$	$3 + 1 / 0\text{s}$

■ 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	$100 \pm 10^\circ\text{C}$	60s max.	$260 \pm 5^\circ\text{C}$	$5 \pm 1\text{s}$
SPPW8, SPPB	100°C max.	60s max.	$255 \pm 5^\circ\text{C}$	$5 \pm 1\text{s}$
SSCF		—	$260 \pm 5^\circ\text{C}$	$5 \pm 1\text{s}$

Detector	Slide	Push	Push
SPVE	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVL	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVM	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVN	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVR	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVS	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVT	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SSCM	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SSCQ	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPPB	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPPW8	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF
SPVQC, SPVQE	SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	SSCF

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