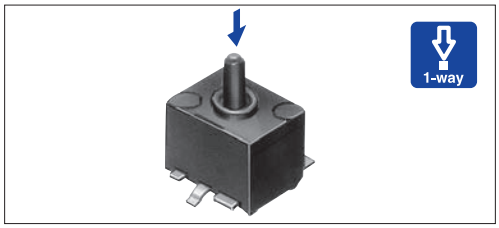
SPPW8 One-way Operation Type

One-way operation detector switch ideal for media detection.



Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		0.1A 30V DC / 100μA 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)	Minimumorder unit (pcs) Japan	Minimumorder unit (pcs) Export	Product No.	Drawing No.
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)				100	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)				100	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)				100	20,000	SPPW811200	2
		For PC board (Reflow)	10.3	9.8	8.6			SPPW810401	3
		For PC board (Dip)						SPPW810400	4

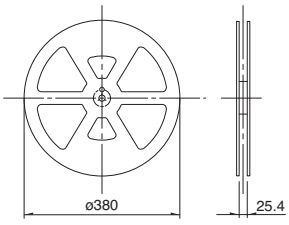
Note

1. Other varieties are also available. Please inquire.
2. Contact us for other slider height variations.

Packing Specifications

Taping Unit:mm

Reel size



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

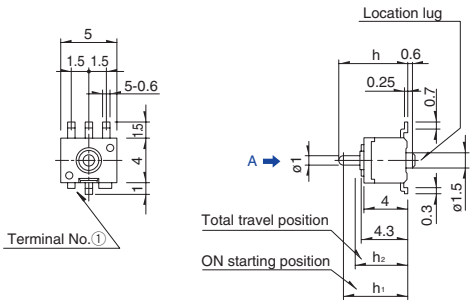
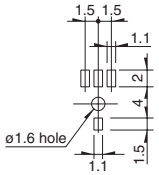
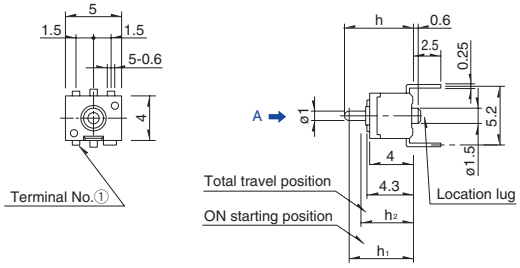
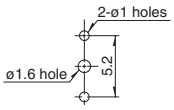
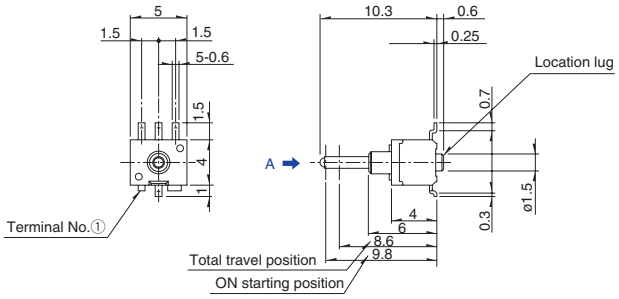
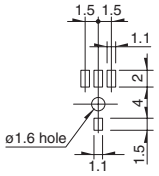
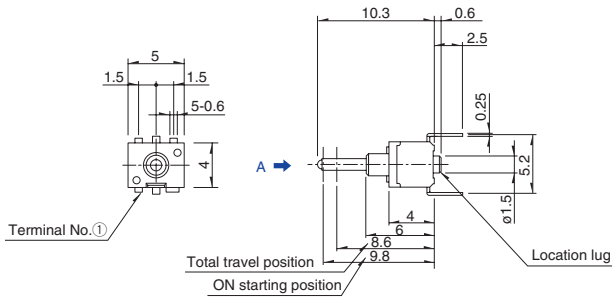
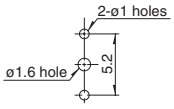
Bulk

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

Refer to **P.66** for soldering conditions.

Dimensions

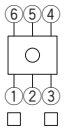
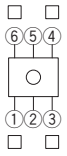
Unit:mm

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

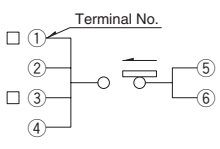
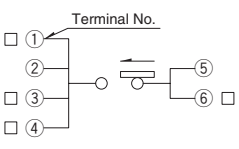
Notes

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

Terminal Layout (Viewed from Direction A)

Reflow	Dip
	

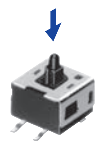
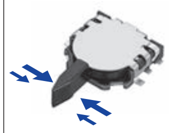
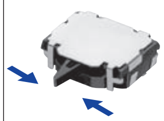
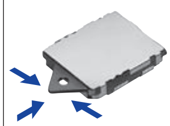
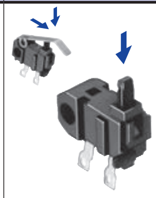
Circuit Diagram

Reflow	Dip
	

Notes

1. □ mark shows a cutting terminal.
2. Contact us for other terminal types.

■ List of Varieties (General-purpose Type)

Series		General-purpose Type					
		SPVE	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	3.4	5	3.8	5	5.55	6.3
	D	3	4	3.6	4	6.6	3
	H	2.3		0.9	1.5	1	4.9
Operating temperature range		−10℃ to +60℃				−40℃ to +85℃	
Automotive use		—	—	—	—	●	●
Life cycle (availability)		★3	★3	★3	★3	★3	★3
Poles / Positions		1 / 1		1 / Two-direction type: 2-positions 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)		50μA 3V DC	100μA 3V DC	50μA 3V DC			
Durability	Operating life without Load	50,000cycles 1Ω max.	100,000cycles 2Ω max.	50,000cycles 5Ω max.			50,000cycles 2Ω max.
	Operating life with Load Rating (max.) (Resistive load)	50,000cycles 1Ω max.	100,000cycles 2Ω max.	50,000cycles 5Ω max.			50,000cycles 2Ω max.
Electrical performance	Initial contact resistance	500mΩ max.	1Ω max.	2Ω max.			1Ω max.
	Insulation resistance	100MΩ min. 100V DC					
	Voltage proof	100V AC for 1 minute					
Mechanical performance	Terminal strength	0.5N for 1minute	3N for 1minute	0.5N for 1minute		1N for 1minute	3N for 1minute
	Actuator strength	5N	10N	1N	2N	5N	10N
Environmental performance	Cold	−20±2℃ for 96h				−40±2℃ for 500h	
	Dry heat	85±2℃ for 96h				85±2℃ for 500h	
	Damp heat	40±2℃, 90 to 95%RH for 96h				60±2℃, 90 to 95%RH for 500h	
Operation force		0.3N max.		0.35N max.			
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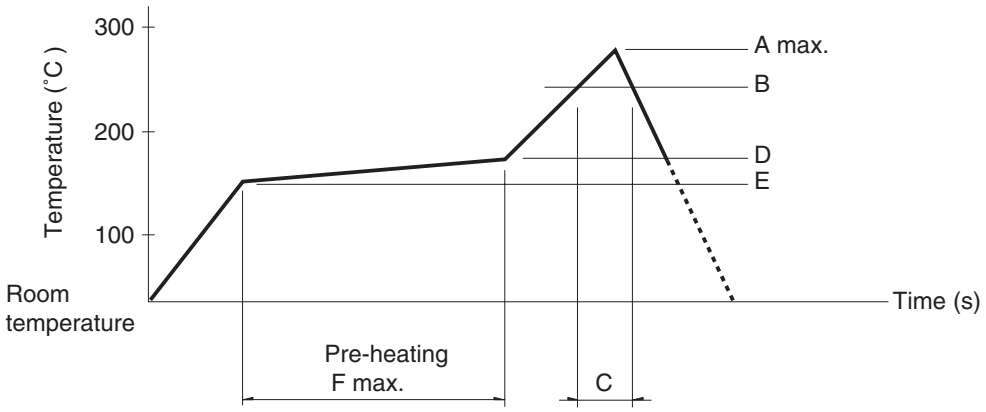
Note
● indicates applicability to all products in the series.

Detector Switches Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 ϕ 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 (℃) 3s max.	B (℃)	C (s)	D (℃)	E (℃)	F (s)
SPPB	250	230	40	180	150	120
SPPW8			35			
SPVE	260		40			
SPVL						
SPVM						
SPVN						
SPVP						
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, SPVP, SPVT, SPVM, SPVR, SPVE, SPPW8,SSCQ, SSCM, SPVL, SSCT, SPVQC	350 ± 5℃	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	300 ± 10℃	3 +1 / 0s
SPPB	350 ± 5℃	5s max.
SSCF	350 ± 10℃	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℃	60s max.	260 ± 5℃	5 ± 1s
SPPW8, SPPB	100℃ max.	60s max.	255 ± 5℃	5 ± 1s
SSCF	–		260 ± 5℃	5 ± 1s

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