

SPPB General-purpose Type

A wide variety of detector switches available for various digital AV devices



Detector

Slide

Push

Rotary

Power

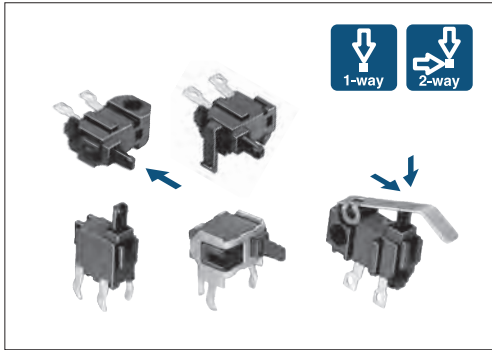
Dual-in-line Package Type

General-purpose Type

Water-proof Type

Fast Switching Type

Typical Specifications



Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 30V DC / 50μA 3V DC
Contact resistance (Initial / After operating life)		1Ω max. / 2Ω max.
Operating force		0.35N max.
Operating life	Without load	50,000cycles
	With load	50,000cycles (0.1A 30V DC)

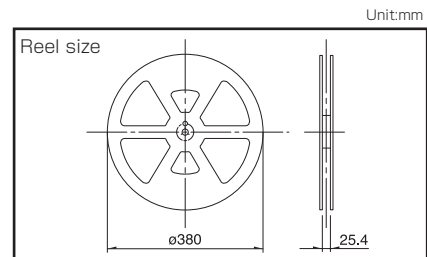
Product Line

Poles	Positions	Operating part shape	Operating direction	Terminal type	Packaging style	Minimum order unit (pcs)		Product No.	Drawing No.
						Japan	Export		
1	1	Push	Horizontal	For Lead	Bulk	2,000	10,000	SPPB110300	1
								SPPB120200	2
								SPPB310400	7
								SPPB320100	8
		Actuator A	Horizontal	For PC board (Dip)	Bulk	1,000	5,000	SPPB1A0100	3
								SPPB1A0101	4
								SPPB2A0100	5
								SPPB2A0101	6
		Push	Vertical	For PC board (Dip)	Bulk	4,000	20,000	SPPB512300	9
								SPPB610400	13
		Push	Horizontal	For PC board (Dip)	Bulk	2,000	10,000	SPPB620300	14
								SPPB5A0100	10
		Actuator A	Vertical	For PC board (Dip)	Bulk	1,000	5,000	SPPB6A0100	15
								SPPB6A0400	16
		Push	Vertical	For PC board (Reflow)	Taping	1,500	6,000	SPPB530701	11
						600	2,400	SPPB530601	12
						1,300	5,200	SPPB630101	17
								SPPB640201	18

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		
SPPB530701	1,500	3,000	6,000	24	406×406×160
SPPB530601	600	1,200	2,400		
SPPB630101 SPPB640201	1,300	2,600	5,200		


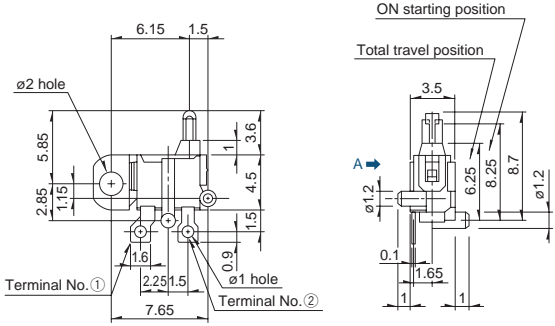
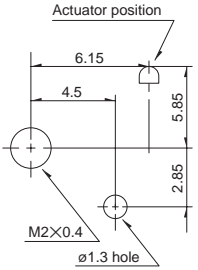

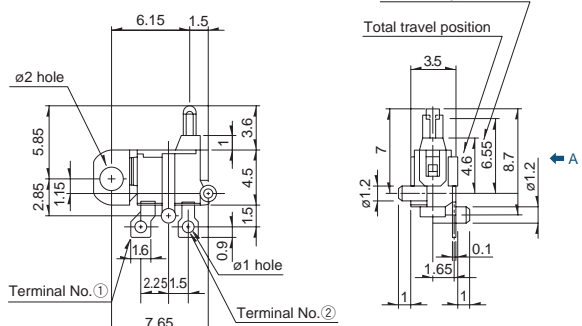
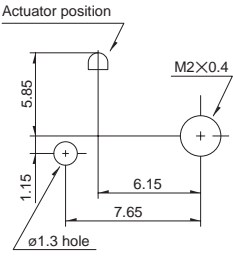

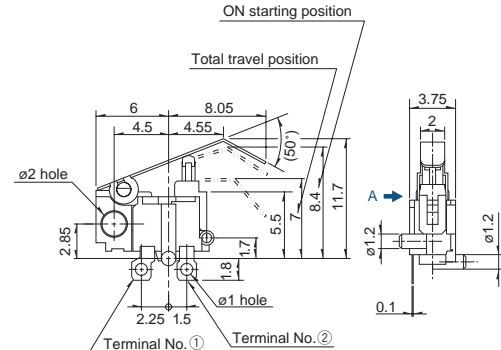
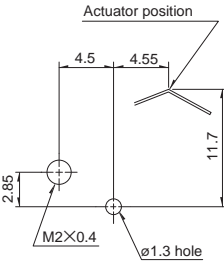
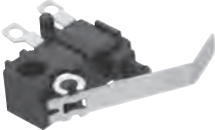
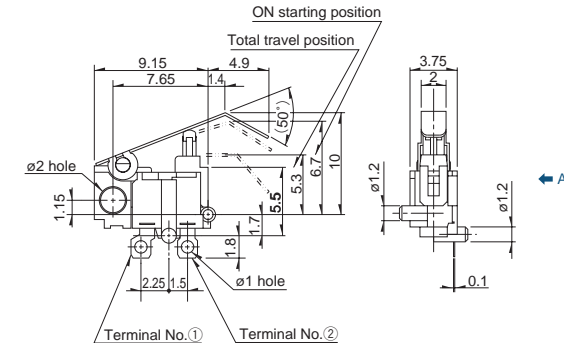
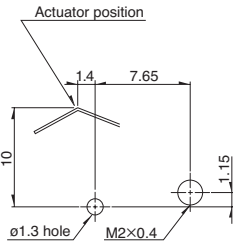


Bulk

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
SPPB512300	4,000	20,000	400×270×290
SPPB1A0100, SPPB1A0101, SPPB2A0100, SPPB2A0101, SPPB5A0100, SPPB6A0100, SPPB6A0400	1,000	5,000	
SPPB310400, SPPB320100, SPPB610400, SPPB620300, SPPB110300, SPPB120200	2,000	10,000	

Dimensions

Unit:mm

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

Detector

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Dual-in-line
Package Type

General-
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Water-proof
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Fast Switching
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SPPB General-purpose Type

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Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
5			
6			
7			
8			

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
9		<p>Terminal No.① Terminal No.② PC board mounting face Total travel position ON starting position</p>	<p>4-ø1.1 hole ø1.25 hole Actuator position 0.95 2.3 2.45 3.3</p>
10		<p>ON starting position Total travel position PC board mounting face Terminal No.① Terminal No.②</p>	<p>4-ø1.1 hole ø1.25 hole 0.95 2.3 3.3</p>
11		<p>Terminal No.① Terminal No.② PC board mounting face Total travel position ON starting position</p>	<p>Actuator position 1.65 1.5 (3.3) 2-ø1.1 hole 2-pattern section 1.4 1.5 1.75 2.2 4</p>
12		<p>Terminal No.① Terminal No.② PC board mounting face Total travel position ON starting position</p>	<p>4-pattern section 1.75 1.5 1.4 1.4 2-ø1.3 hole 1.65 1.4 2 2 1.4 1.4</p>

- Detector
- Slide
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- Power
- Dual-in-line
Packager Type
- General-
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SPPB General-purpose Type

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Package Type

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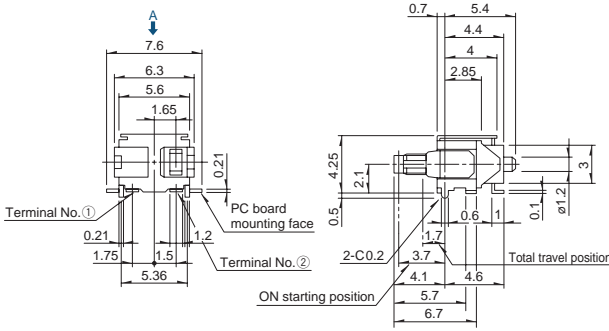
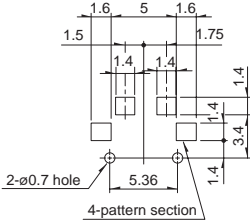

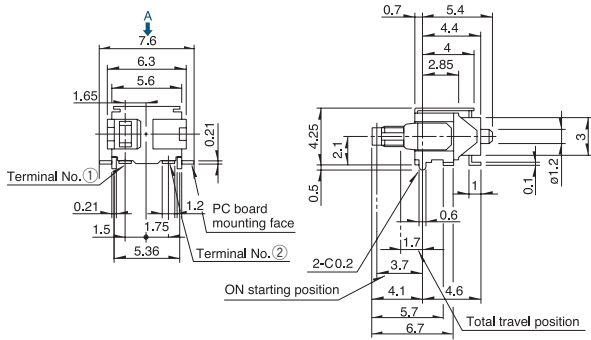
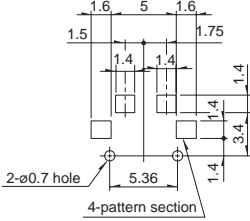
Dimensions

Unit:mm

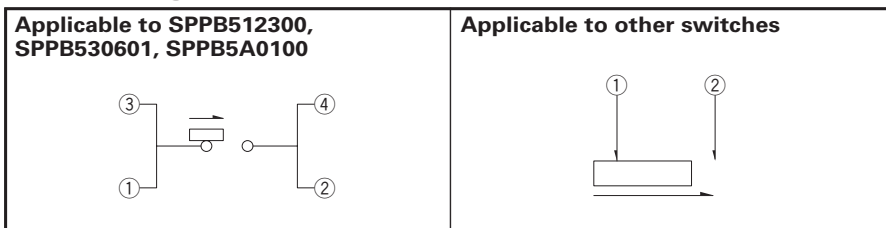
No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
13			
14			
15			
16			

■ Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
17			
18			

■ Circuit Diagram (Viewed from Direction A)



Detector

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Dual-in-line
Package Type

General-
purpose Type


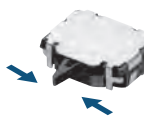
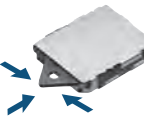
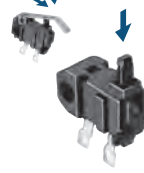




Water-proof
Type

Fast Switching
Type

Detector Switches

List of Varieties

Detector
Slide
Push
Rotary
Power
Dual-in-line Package Type

Series		General-purpose Type			
		SSCQ	SSCM	SPVL	SPPB
Photo					
Operation type		Two-way Two-direction type	Two-way	Three-way	One-way Two-way
Dimensions (mm)	W	3.8	5	5.55	6.3
	D	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)					
Poles / Positions		1 / Two-direction type: 2-position each side	1/2	1/1	
Rating (max.) (Resistive load)		1mA 5V DC			0.1A 30V DC
Rating (min.) (Resistive load)		50μA 3V DC			
Durability	Operating life without load	50,000cycles 5Ω max.			50,000cycles 2Ω max.
	Operating life with load Rating (max.) (Resistive load)	50,000cycles 5Ω max			50,000cycles 2Ω max.
Electrical performance		Initial contact resistance			
		2Ω max.			
		Insulation resistance			
		100MΩ min. 100V DC			
		Voltage proof			
		100V AC for 1 minute			
Mechanical performance	Terminal strength	0.5N for 1minute		1N for 1minute	3N for 1minute
	Actuator strength	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		0.35N max.			
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General-purpose Type
Water-proof Type
Fast Switching Type

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Note

- Indicates applicability to all products in the series.

Detector Switches / Soldering Conditions

Detector

Slide

Push

Rotary

Power

Dual-in-line
Package Type

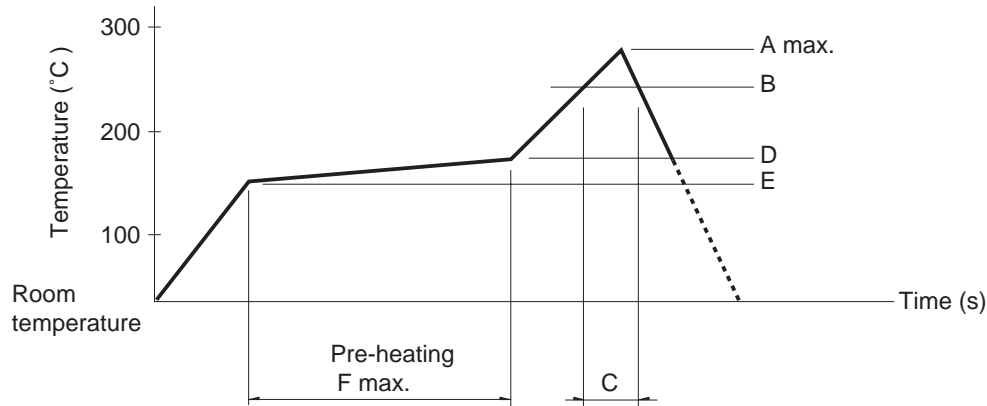
General
purpose Type

Water-proof
Type

Fast Switching
Type

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					
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.
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, 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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