

Detector Switch

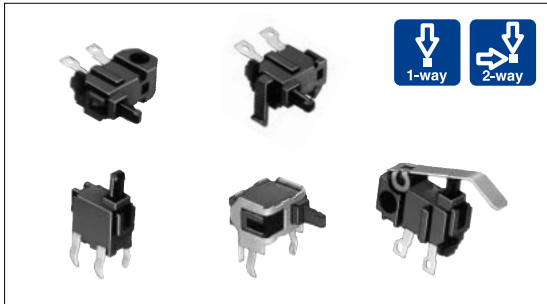
General-purpose Type

SPPB Series



A wide variety of detector switches available for various Digital AV devices.

Detector
Push
Slide
Rotary
Encoders
Power
Dual-in-line Package Type
TACT Switch™
Custom- Products



Typical Specifications

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

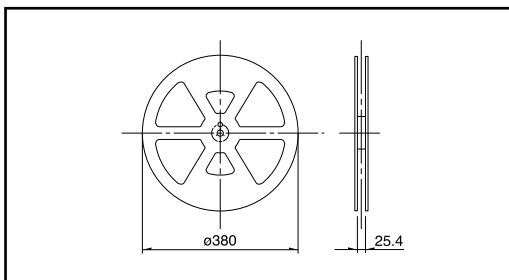
Product Line

Poles	Positions	Operating part shape	Operating direction	Terminal type	Packaging style	Minimum order unit (pcs)	Product No.	Drawing No.		
1	1	Push	Horizontal	Lead	Bulk	10,000	SPPB110300	1		
							SPPB120200	2		
							SPPB310400	7		
							SPPB320100	8		
		Actuator A				5,000	SPPB1A0100	3		
							SPPB1A0101	4		
							SPPB2A0100	5		
							SPPB2A0101	6		
		Actuator C	20,000	SPPB512300		9				
				Push		Vertical	For PC board (Dip)	10,000	SPPB610400	13
									SPPB620300	14
									Actuator A	5,000
		SPPB6A0100	15							
		SPPB6A0400	16							
		Push	Vertical	For PC board (Reflow)	Taping	6000		SPPB530701		
								2400	SPPB530601	12
									5200	SPPB630101
							SPPB640201			18

Taping Specifications (Taping Packaging)

Reel Size

Unit:mm



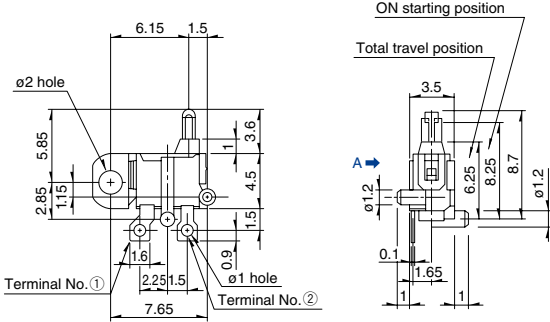
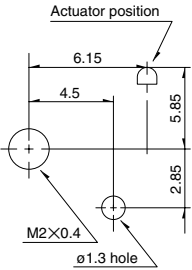
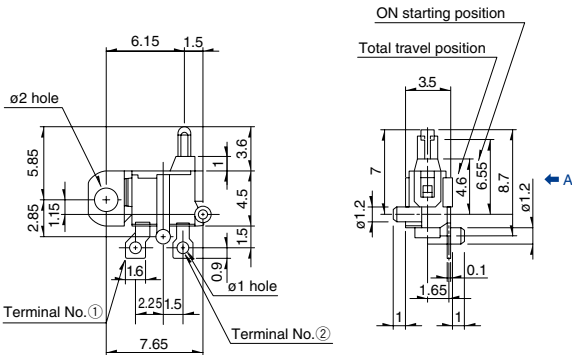
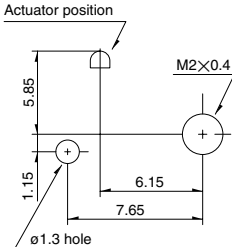
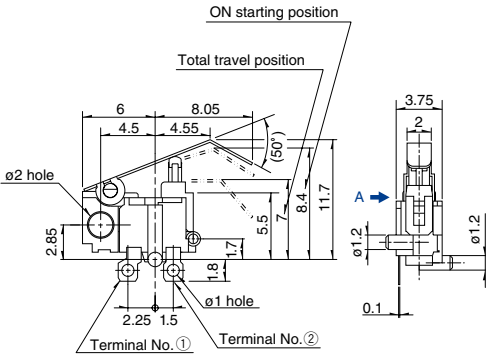
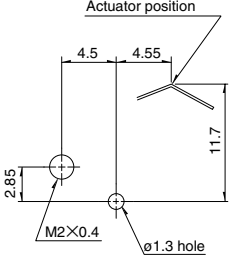
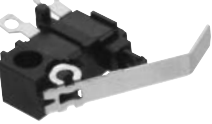
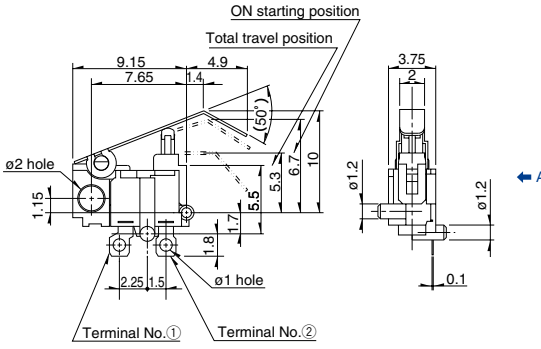
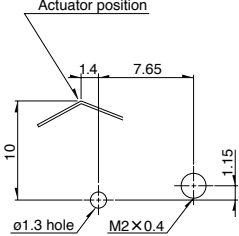
Product No.	Number of packages (pcs.)			Tape width (mm)
	1 reel	1 case /Japan	1 case /export packing	
SPPB530701	1,500	3,000	6,000	24
SPPB530601	600	1,200	2,400	
SPPB630601 SPPB640201	1,300	2,600	5,200	

Note

Please place purchase orders per minimum order unit(integer).

Dimensions

Unit:mm

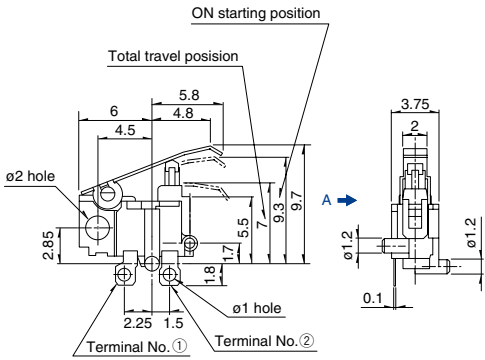
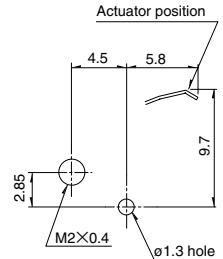
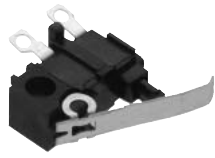
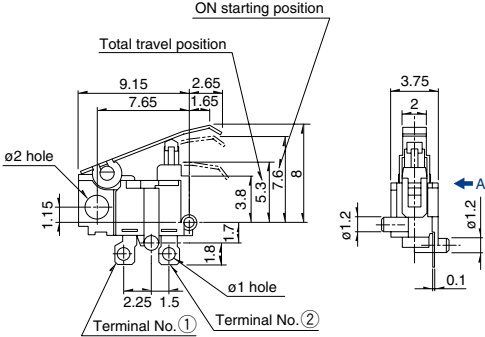
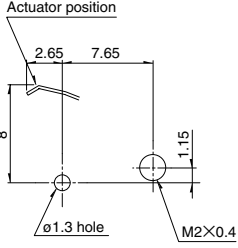
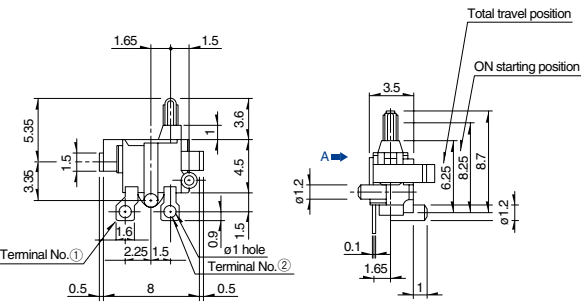
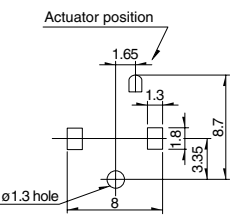
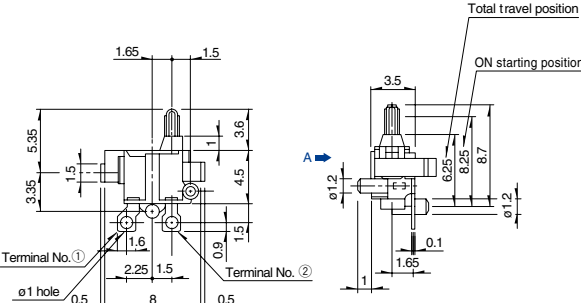
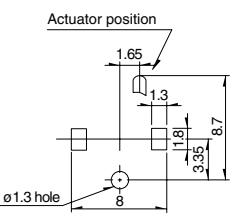
No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
1			
2			
3			
4			

Detector

- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line
Package Type
- TACT Switch™
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Products

Dimensions

Unit:mm

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

Unit:mm

No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
9	Push	Side view dimensions: 2.45, 0.8, 1, 4.9, 8.5, 1, 2.6, 0.95, 2.3, 5, 6.3, Terminal No.①, Terminal No.②, PC board mounting face. Front view dimensions: 3, Total travel position, ON starting position, 6.1, 8.05, 0.1, 1.2, 3.3.	Dimensions: 4-ø1.1 holes, ø1.25 hole, Actuator position, 0.95, 2.3, 2.45, 3.3.
10	Actuator A	Side view dimensions: 8.85, 5.35, 8.3, 11.5, 5.3, 1, 2.6, 5.2, 3.95, Terminal No.①, Terminal No.②, PC board mounting face, ON starting position, Total travel position, (50°). Front view dimensions: 3.75, 2, ø1.2.	Dimensions: 4-ø1.1 holes, ø1.25 hole, 0.95, 2.3, 3.3.
11	Push	Side view dimensions: 2.45, 1.5, 1.65, 2-ø1, 0.3, 0.8, 0.95, 2.3, 5.1, 6.5, Terminal No.①, Terminal No.②, PC board mounting face. Front view dimensions: 1.6, 1.5, Total travel position, ON starting position, 6.1, 8.05, 0.1, 1.2, 3.3.	Dimensions: Actuator position, 1.65, 1.5, (3.3), 2-ø1.1 holes, 2-pattern section, 1.4, 1.5, 1.75, 2.2, 4.
12	Push	Side view dimensions: 1.65, 1, 4.9, 8.5, 1, 1.75, 1.65, 5, 6.4, Terminal No.①, Terminal No.②, PC board mounting face. Front view dimensions: 3, Total travel position, ON starting position, 6.1, 8.05, 0.1, 1.2, 3.3, 2.3, 2.3, 3.3, 3.3, Detail of a, 0.15 max., 0.3 max.	Dimensions: 4-pattern section, 1.75, 1.5, 1.4, 2-ø1.3 holes, 1.65, 1.4, 2, 2, 1.4, 1.4.

Custom-Products

Detector Switch General-purpose Type

SPPB Series

Dimensions

Unit:mm

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

Dimensions			Unit:mm
No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
17	Push		
18	Push		

Detector

Push

Slide

Rotary

Encoders

Power

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Custom-
Products

Circuit Diagram (Viewed from Direction A)

Applicable to SPPB512300, SPPB530601, SPPB5A0100	Applicable to other switches

List of Varieties (General-purpose Type)

Series		General-purpose Type								
		SPPB	SPVE	SPPW8	SPVM	SPVR	SPVF	SSCU	SSCT	
Photo										
Operation type										
Operating temperature range		-40°C to +85°C	-10°C to +60°C		-40°C to +85°C		-10°C to +60°C	-40°C to +85°C		
Rating (max.) (Resistive load)		0.1A 30V DC			1mA 5V DC			0.1A 12V DC		
Rating (min.) (Resistive load)		50μA 3V DC		100μA 3V DC	50μA 3V DC	100μA 3V DC	50μA 3V DC			
Electrical performance	Initial contact resistance	1Ω max.	500mΩ max.	1Ω max.	2Ω max.	3Ω max.	500mΩ max.	70mΩ max.	20mΩ max.	
	Insulation resistance	100MΩ min. 100V DC						100MΩ min. 250V DC		
	Voltage proof	100V AC for 1 minute						250V AC for 1 minute		
Mechanical performance	Terminal strength	3N for 1 minute	0.5N for 1 minute	3N for 1 minute	1N for 1 minute	0.5N for 1 minute	3N for 30s	3N for 1 minute		
	Actuator strength	10N	5N	10N	5N	2N	1N	5N	10N	
Durability	Operating life without Load	50,000cycles 2Ω max.	50,000cycles 1Ω max.	100,000cycles 2Ω max.	50,000cycles 5Ω max.		100,000cycles 1Ω max.	10,000cycles 100mΩ max.	10,000cycles 40mΩ max.	
	Operating life with Load	(0.1A 30V DC) 50,000cycles 2Ω max.	(0.1A 30V DC) 50,000cycles 1Ω max.	(0.1A 30V DC) 100,000cycles 2Ω max.	(1mA 5V DC) 50,000cycles 5Ω max.		(1mA 5V DC) 100,000cycles 1Ω max.	(0.1A 12V DC) 10,000cycles 150mΩ max.	(0.1A 12V DC) 10,000cycles 60mΩ max.	
Environmental performance	Cold	-20±2°C for 96h					-40±2°C for 96h	-20±2°C for 96h		
	Dry heat	85±2°C for 96h								
	Damp heat	40±2°C, 90 to 95%RH for 96h								
Dimensions (mm)		W	6.3	3.4	5	2.8	3.6	9	11	12.5
		D	3		4	3.5	4.2	3.5	5.8	5
		H	4.9	2.3		1.5	1.2	4.5	7	11.5
Soldering	Manual soldering	300±5°C, 5s max.	350±5°C, 3s max.				300±10°C, 3 ⁺¹ ₋₀ s	350±5°C, 3s max.		
	Dip soldering	260±5°C, 5±1s	—	255±5°C, 5±1s	—		245±5°C, 5±1s	—	260±5°C, 5±1s	
	Reflow soldering	Please see P.79					—			
Number of poles		1					1.2	1		
Operation force		0.35N max.	0.3N max.		0.4N max.	0.35N max.	0.3N max.	0.5N max.	0.7±0.3N	
Page		28	34	36	38	40	41	44	45	

Detector

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Dual-in-line
Package Type

TACT Switch™

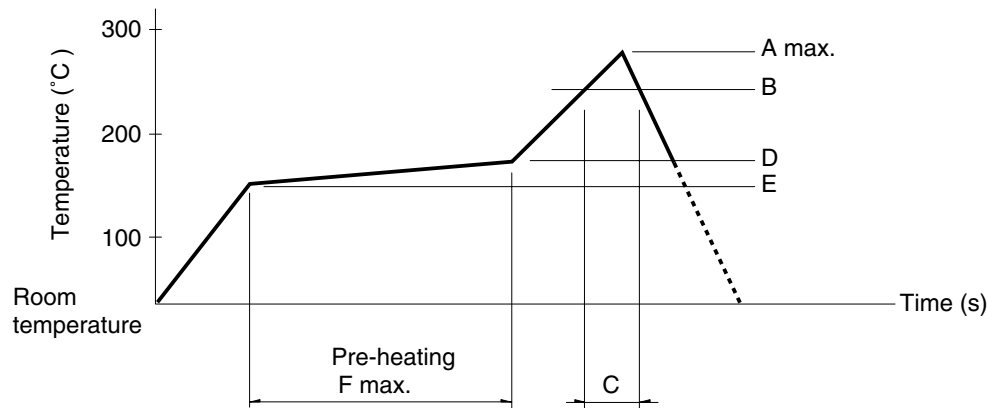
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Products

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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



Detector

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Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SPPB	250	230	40			
SPPW8		200	20			
SPVE	260	230	40	180	150	120
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SSCM						
SPPY5	240		20	150	Room temperature	180

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, 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.

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<http://moschip.ru/get-element>

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