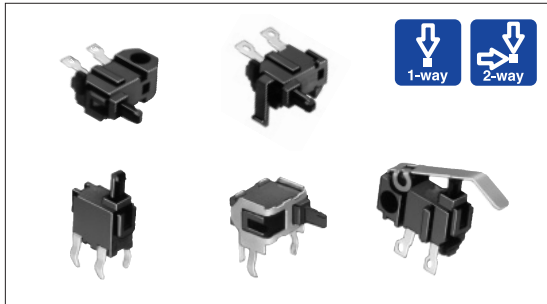


Detector Switch General-purpose Type

SPPB Series



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



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)

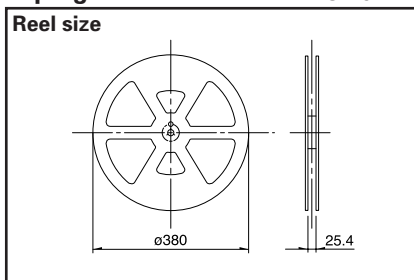
Product Line

Poles	Positions	Operating part shape	Operating direction	Terminal type	Packaging style	Minimum order unit (pcs)	Product No.	Drawing No.		
1	1	Push	Horizontal	Lead	Bulk	10,000	SPPB110300	1		
							SPPB120200	2		
							SPPB310400	7		
		SPPB320100				8				
		SPPB1A0100				3				
		SPPB1A0101				4				
		SPPB2A0100	5							
		SPPB2A0101	6							
		Push	Vertical	For PC board (Dip)		20,000	SPPB512300	9		
							Horizontal	10,000	SPPB610400	13
									SPPB620300	14
		Actuator A	Vertical	5,000		SPPB5A0100	10			
					Horizontal	SPPB6A0100	15			
						SPPB6A0400	16			
		Push	Vertical	For PC board (Reflow)	Taping	6000	SPPB530701	11		
						2400	SPPB530601	12		
						5200	SPPB630101	17		
									SPPB640201	18

Packing Specifications

Taping

Unit:mm



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	

Note

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

ALPS

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products



Automotive
Use

Dimensions

Unit:mm

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

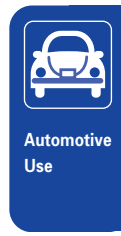
Custom-
Products



Automotive
Use

No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
1		<p>ON starting position Total travel position Actuator position</p>	<p>Actuator position</p>
2		<p>ON starting position Total travel position Actuator position</p>	<p>Actuator position</p>
3		<p>ON starting position Total travel position Actuator position</p>	<p>Actuator position</p>
4		<p>ON starting position Total travel position Actuator position</p>	<p>Actuator position</p>

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



Dimensions			Unit:mm
No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
5	<p>Actuator C</p>	<p>ON starting position Total travel position ø2 hole 2.85 6 4.5 5.8 4.8 7 5.5 9.3 9.7 1.7 1.8 2.25 1.5 ø1 hole Terminal No. ① Terminal No. ② ø1.2 0.1</p>	<p>Actuator position 4.5 5.8 9.7 2.85 M2×0.4 ø1.3 hole</p>
6	<p>Actuator C</p>	<p>ON starting position Total travel position ø2 hole 1.15 9.15 7.65 2.65 1.65 5.3 7.6 8 3.8 1.7 1.8 2.25 1.5 ø1 hole Terminal No. ① Terminal No. ② ø1.2 0.1</p>	<p>Actuator position 2.65 7.65 8 ø1.3 hole M2×0.4 1.15</p>
7	<p>Push</p>	<p>Total travel position ON starting position 1.65 1.5 3.35 5.35 1.5 1 4.5 3.6 1.6 0.9 1.5 ø1 hole Terminal No. ① 2.25 1.5 Terminal No. ② ø1.2 0.1 1.65 1</p>	<p>Actuator position 1.65 1.3 1.8 8.7 3.35 8 ø1.3 hole</p>
8	<p>Push</p>	<p>Total travel position ON starting position 1.65 1.5 3.35 5.35 1.5 1 4.5 3.6 1.6 0.9 1.5 ø1 hole Terminal No. ① 2.25 1.5 Terminal No. ② ø1.2 0.1 1.65 1</p>	<p>Actuator position 1.65 1.3 1.8 8.7 3.35 8 ø1.3 hole</p>

Dimensions

Unit:mm

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products



Automotive
Use

No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
9			
10			
11			
12			

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products



Automotive
Use

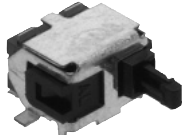
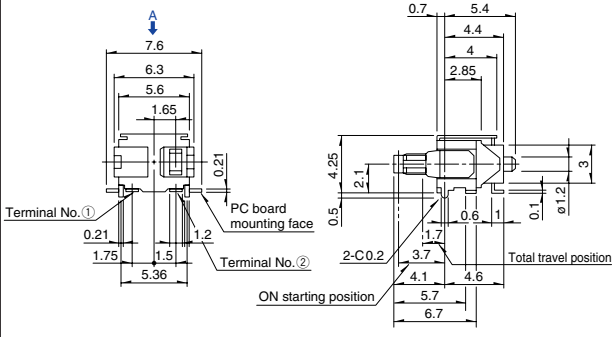
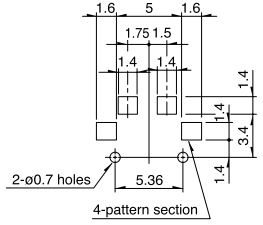
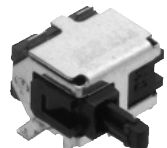
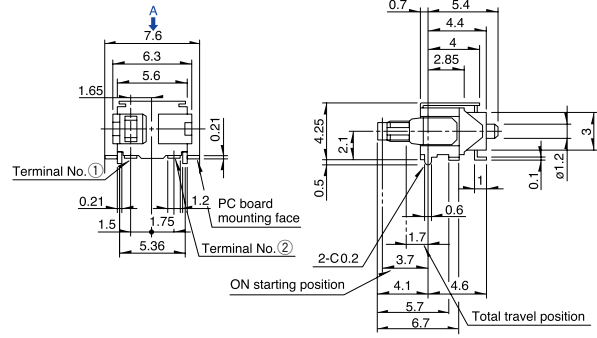
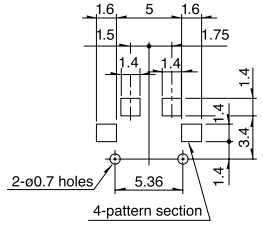
Dimensions

Unit:mm

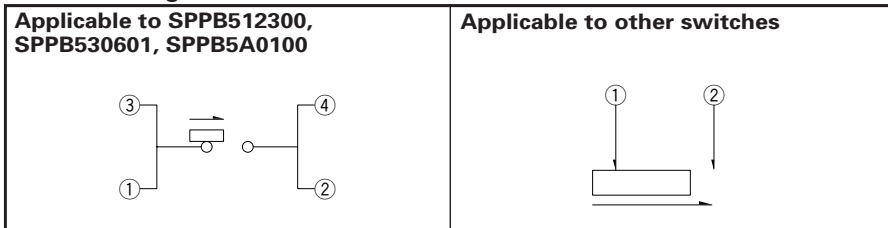
No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
13			
14			
15			
16			

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)



List of Varieties (General-purpose Type)

Series	General-purpose Type							
	SPPB	SPVE	SPPW8	SPVM	SPVR	SPVF	SSCU	
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	
Automotive use	●	—	—	●	●	—	●	
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.	
	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	
	Actuator strength	10N	5N	10N	5N	2N	1N	
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.	
	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.	
Environmental performance	Cold	-40±2°C for 500h	-20±2°C for 96h		-40±2°C for 500h		-40±2°C for 96h	
	Dry heat	85±2°C for 500h	85±2°C for 96h		85±2°C for 500h		85±2°C for 96h	
	Damp heat	60±2°C, 90 to 95%RH for 500h	40±2°C, 90 to 95%RH for 96h		60±2°C, 90 to 95%RH for 500h		40±2°C, 90 to 95%RH for 96h	
Dimensions (mm)	W	6.3	3.4	5	2.8	3.6	9	
	D	3		4	3.5	4.2	3.5	
	H	4.9	2.3		1.5	1.2	4.5	
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	255±5°C, 5±1s	—	255±5°C, 5±1s	—		245±5°C, 5±1s	—
	Reflow soldering	Please see P.102						—
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.	
Page	44	50	52	54	56	57	60	

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

TACT Switch™

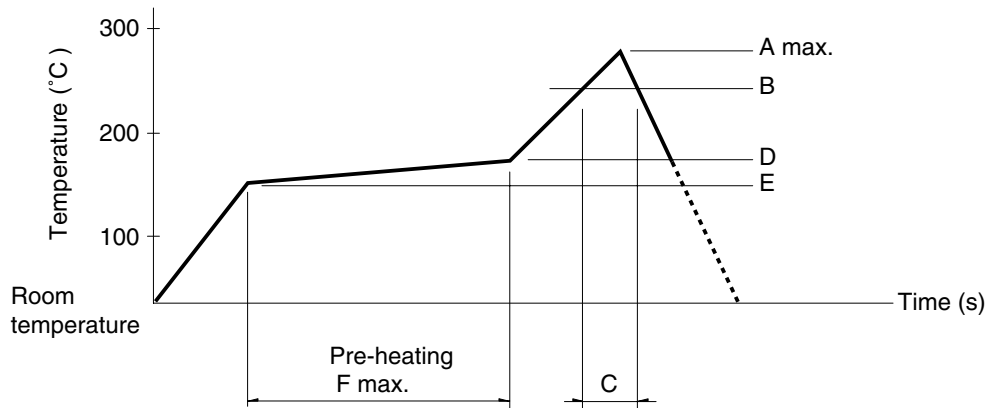
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- Detector Switches Soldering Conditions102
- Detector Switches Cautions103

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

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

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