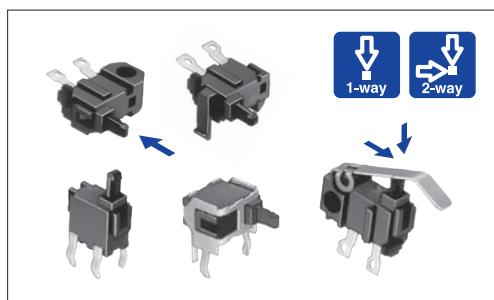




A wide variety of detector switches available for various digital AV devices.



Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		0.1A 30V DC / 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)

Detector

Slide

Push

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Product Line

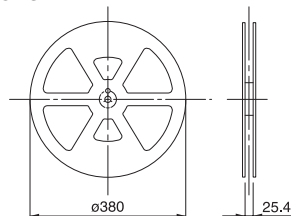
Product Line										
Poles	Positions	Operating part shape	Operating direction	Terminal type	Packaging style	Minimum order unit (pcs)		Product No.	Drawing No.	
						Japan	Export			
1	1	Push	Horizontal	For Lead	Bulk	100	10,000	SPPB110300	1	
								SPPB120200	2	
								SPPB310400	7	
								SPPB320100	8	
		Actuator A					5,000	SPPB1A0100	3	
								SPPB1A0101	4	
								SPPB2A0100	5	
								SPPB2A0101	6	
		Actuator C	200	20,000		SPPB512300	9			
				100		10,000	SPPB610400	13		
							SPPB620300	14		
						Actuator A	Vertical	For PC board (Dip)	5,000	SPPB5A0100
		SPPB6A0100	15							
		Horizontal	SPPB6A0400				16			
			Push		Vertical		For PC board (Reflow)		Taping	1,500
		600		2,400		SPPB530601				12
		Horizontal		1,300		5,200				SPPB630101
								SPPB640201		18

Packing Specifications

Taping

Unit:mm

Reel size



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		

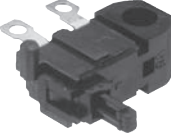
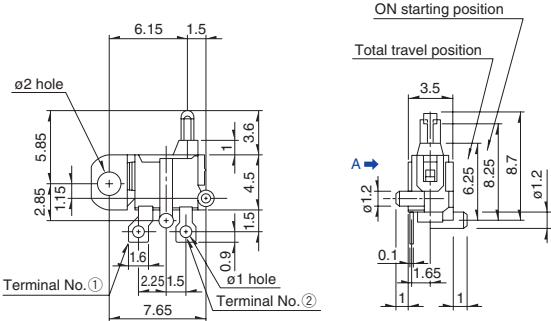
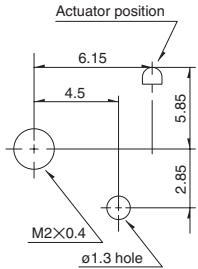
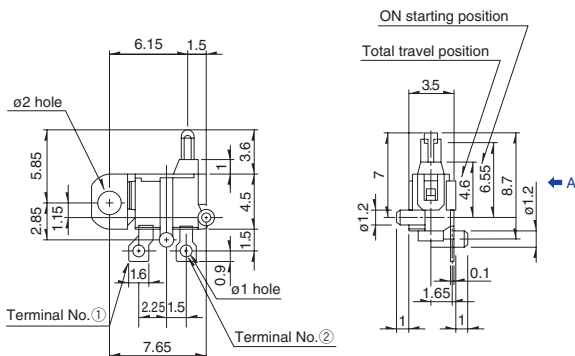
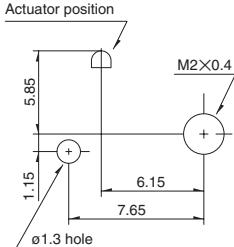
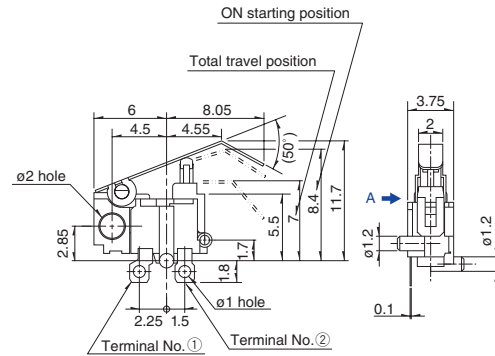
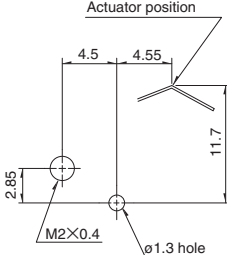
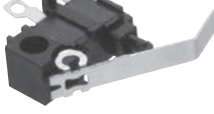
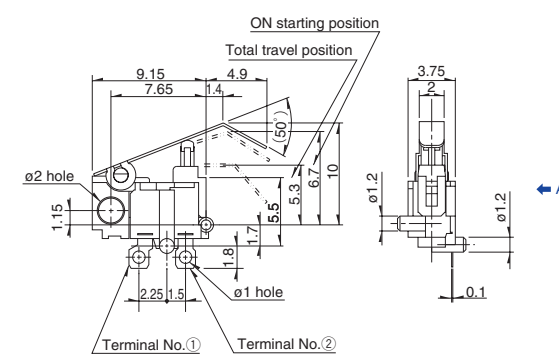
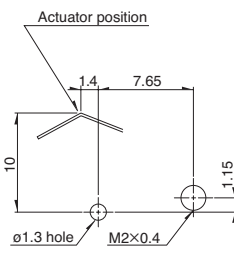
Bulk

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	

Refer to P.66 for soldering conditions.

Dimensions

Unit:mm

Detector	No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
Slide Push Rotary Encoders Power Dual-in-line Package Type TACT Switch™	1	Push 		
	2	Push 		
	3	Actuator A 		
	4	Actuator A 		

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from direction A)
5	Actuator C	ON starting position Total travel position ø2 hole 2.85 6 4.5 5.8 4.8 7 5.5 9.3 9.7 1.8 1.7 2.25 1.5 ø1 hole Terminal No. ① Terminal No. ② 3.75 2 ø1.2 0.1 ø1.2	Actuator position 4.5 5.8 2.85 M2×0.4 ø1.3 hole 9.7
6	Actuator C	ON starting position Total travel position ø2 hole 1.15 9.15 7.65 2.65 1.65 3.8 5.3 7.6 8 1.7 2.25 1.5 ø1 hole Terminal No. ① Terminal No. ② 3.75 2 ø1.2 0.1 ø1.2	Actuator position 2.65 7.65 8 ø1.3 hole M2×0.4 1.15
7	Push	Total travel position ON starting position 1.65 1.5 3.35 5.35 1.5 3.6 4.5 0.9 1.5 ø1 hole 2.25 1.5 Terminal No. ① Terminal No. ② 0.5 8 0.5 3.5 6.25 8.7 ø1.2 0.1 1.65 1 ø1.2	Actuator position 1.65 1.3 1.8 3.35 8.7 ø1.3 hole 8
8	Push	Total travel position ON starting position 1.65 1.5 3.35 5.35 1.5 3.6 4.5 0.9 1.5 ø1 hole 2.25 1.5 Terminal No. ① Terminal No. ② 0.5 8 0.5 3.5 6.25 8.7 ø1.2 0.1 1.65 1 ø1.2	Actuator position 1.65 1.3 1.8 3.35 8.7 ø1.3 hole 8

Detector

Slide

Push

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Dimensions

Unit:mm

Detector

Slide

Push

Rotary

Encoders

Power

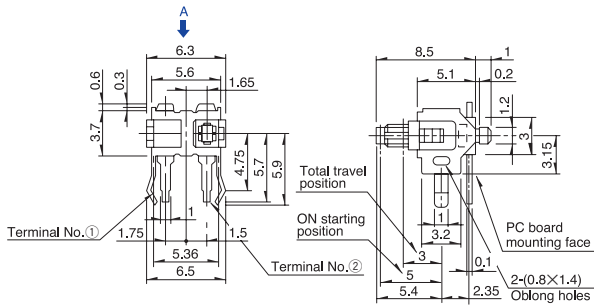
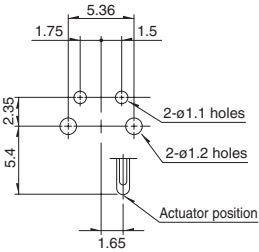
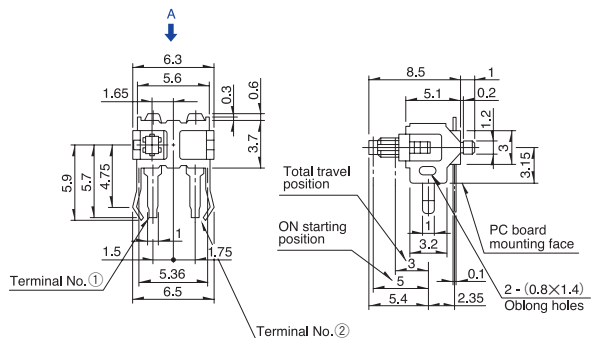
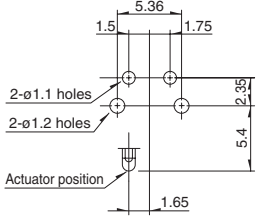
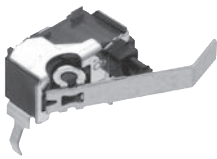
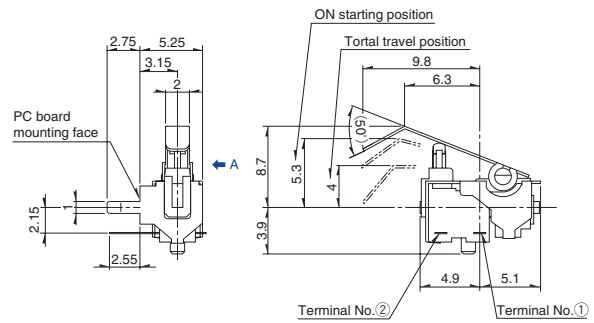
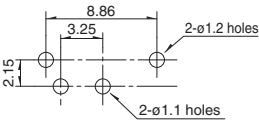
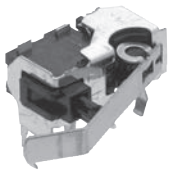
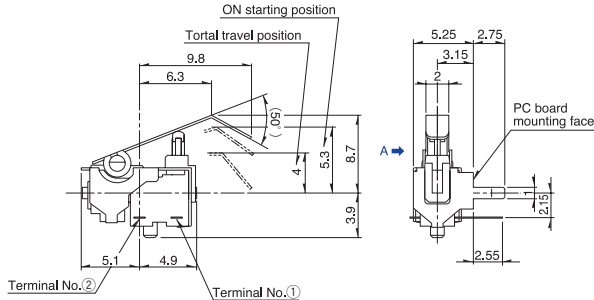
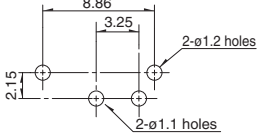
Dual-in-line
Package Type

TACT Switch™

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

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	 	

Detector

Slide

Push

Rotary

Encoders

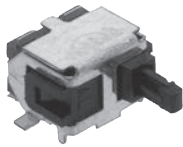
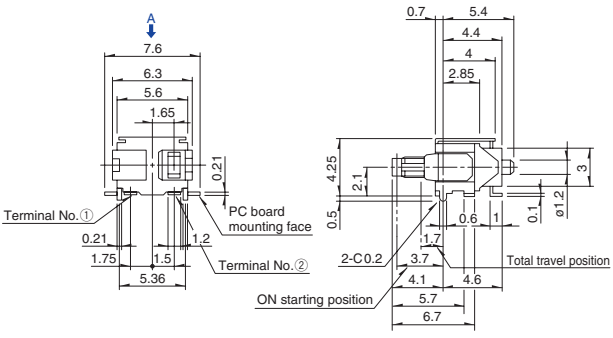
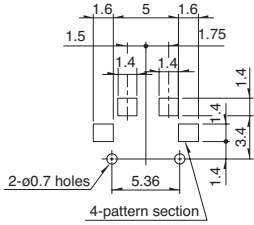
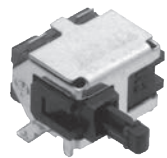
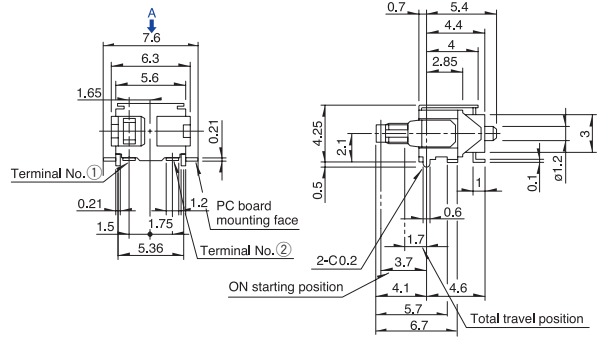
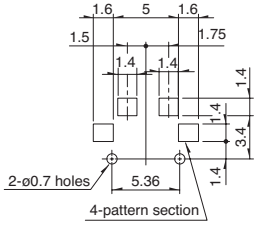
Power

Dual-in-line
Package Type

TACT Switch™

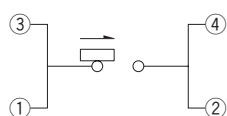
■ Dimensions

Unit:mm

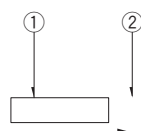
Detector	No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
Slide	17			
Push				
Rotary				
Encoders				
Power				
Dual-in-line Package Type	18			
TACT Switch™				

■ Circuit Diagram (Viewed from Direction A)

Applicable to SPPB512300,
SPPB530601, SPPB5A0100

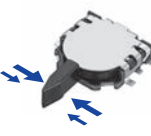
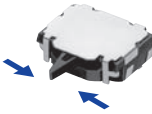
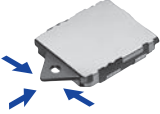
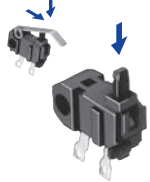


Applicable to other switches



Detector Switches

■ 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)							
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.			
Page		24	26	28	29	30	31

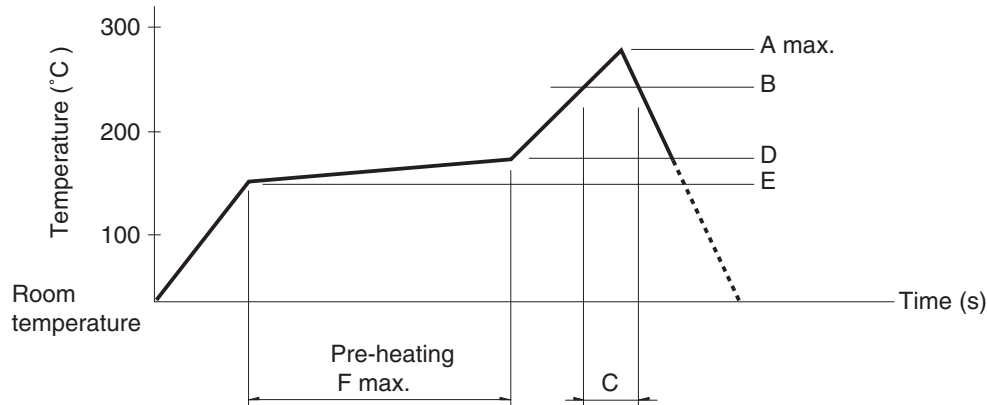
- Detector Switches Soldering Conditions 66
- Detector Switches Cautions 67

Note

- indicates applicability to all products in the series.

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 (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	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 $\pm$ 5°C	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	300 $\pm$ 10°C	3 + 1 / 0s
SPPB	350 $\pm$ 5°C	5s max.
SSCF	350 $\pm$ 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, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	100 $\pm$ 10°C	60s max.	260 $\pm$ 5°C	5 $\pm$ 1s
SPPW8, SPPB	100°C max.	60s max.	255 $\pm$ 5°C	5 $\pm$ 1s
SSCF	—	—	260 $\pm$ 5°C	5 $\pm$ 1s