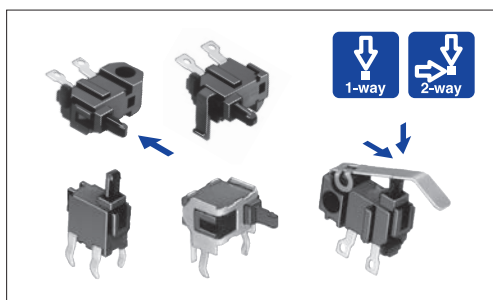


A wide variety of detector switches available for various digital AV devices.



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™

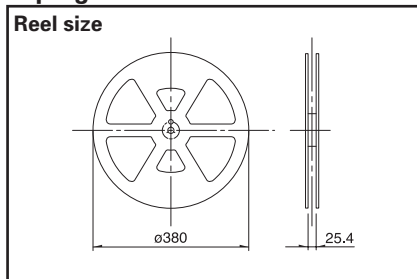
Product Line

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				
								SPPB1A0100	3				
								SPPB1A0101	4				
		Actuator A	Vertical	For PC board (Dip)	100	5,000	SPPB2A0100	5					
							SPPB2A0101	6					
							Push	Horizontal	200	20,000	SPPB512300	9	
											SPPB610400	13	
							Actuator A	Vertical	For PC board (Dip)	100	10,000	SPPB620300	14
												Horizontal	5,000
		SPPB6A0100	15										
		SPPB6A0400	16										
		Push	Horizontal	For PC board (Reflow)	Taping	1,500	6,000	SPPB530701	11				
								Vertical	600	2,400	SPPB530601	12	
											Horizontal	1,300	5,200
								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	

Refer to P.66 for soldering conditions.

Dimensions

Unit:mm

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

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

Dimensions

Unit:mm

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

Detector

Slide

Push

Rotary

Encoders


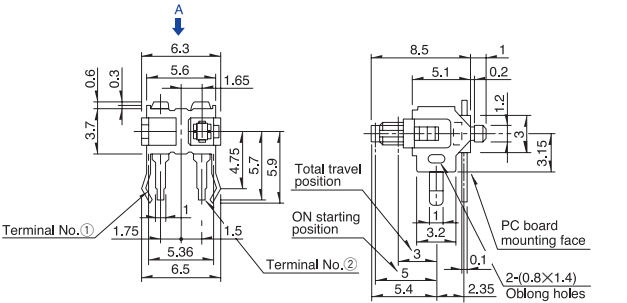
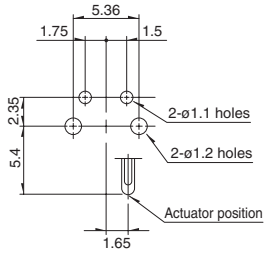

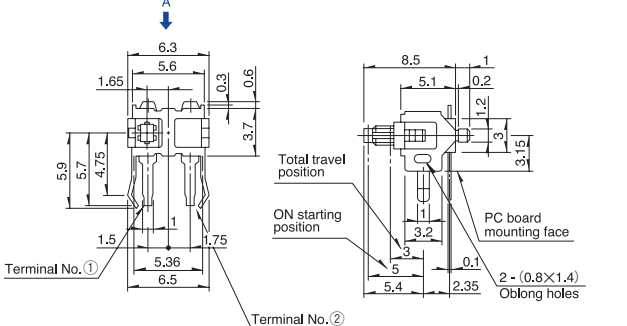
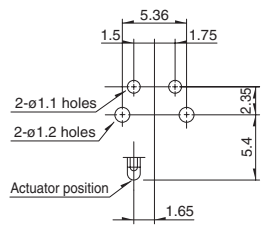
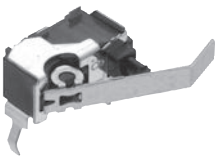
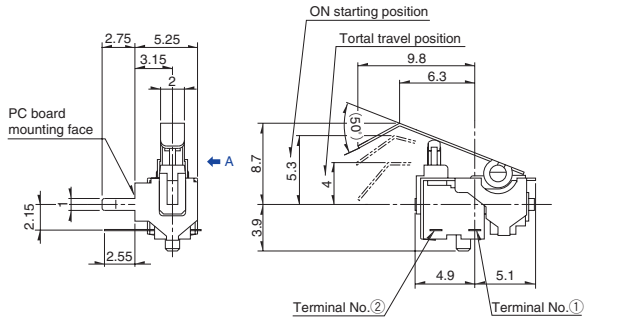
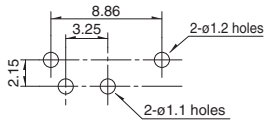
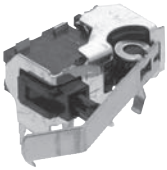
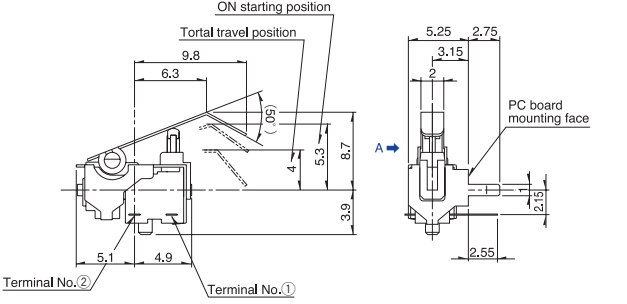
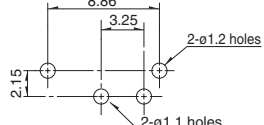
Power

Dual-in-line
Package Type

TACT Switch™

Dimensions

Unit:mm

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

Detector

Slide

Push

Rotary

Encoders

Power

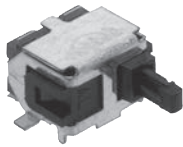
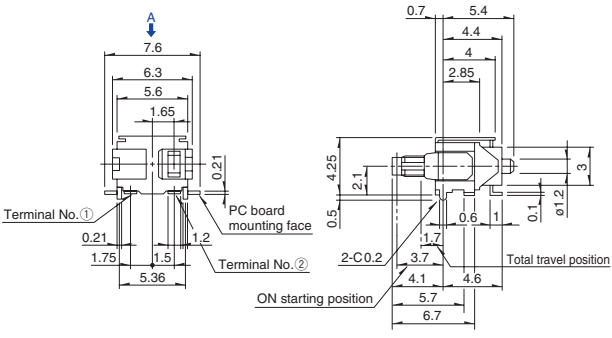
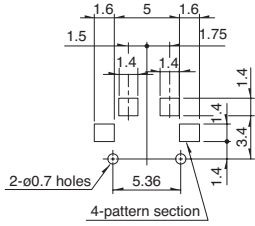
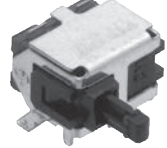
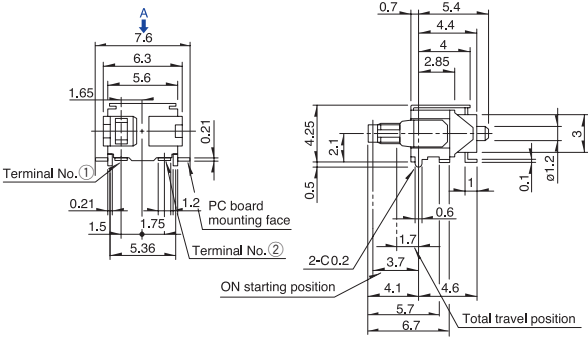
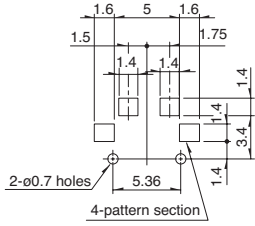
Dual-in-line
Package Type

TACT Switch™

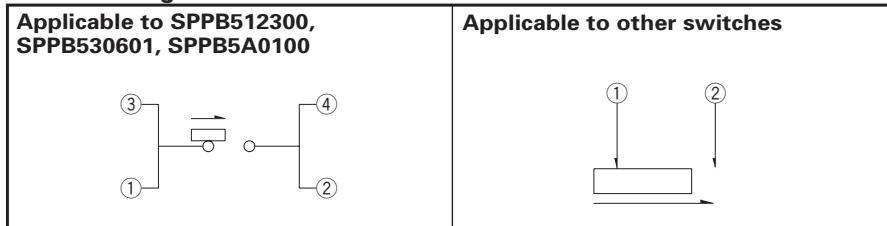
Dimensions

Unit:mm

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



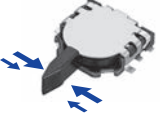
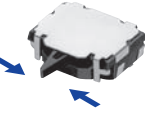

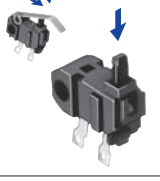






No.	Photo	Style	PC board mounting hole and land dimensions (Viewed from direction A)
17			
18			

Circuit Diagram (Viewed from Direction A)



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°C to + 60°C				- 40°C to + 85°C	
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°C for 96h				-40±2°C for 500h	
	Dry heat	85±2°C for 96h				85±2°C for 500h	
	Damp heat	40±2°C, 90 to 95%RH for 96h				60±2°C, 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

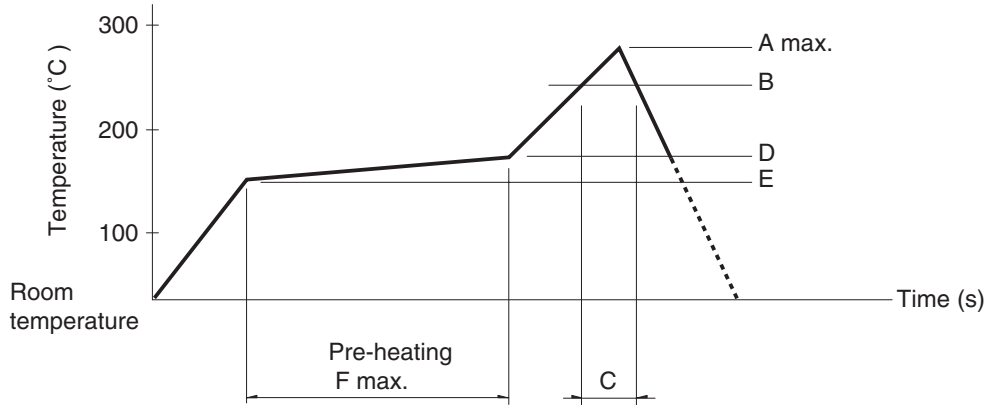
Note

● indicates applicability to all products in the series.

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 (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)				
SPPB	250	230	40	180	150	120				
SPPW8			35							
SPVE	260		230				40	180	150	120
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°C	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	300 ± 10°C	3 + 1 / 0s
SPPB	350 ± 5°C	5s max.
SSCF	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, SPVQ1, 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