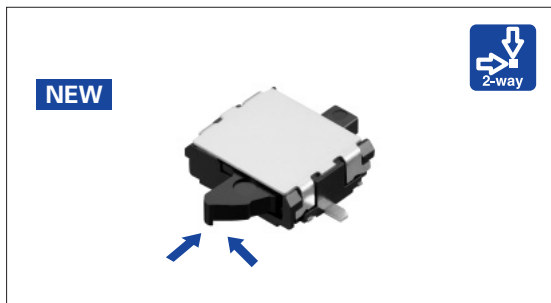


Detector Switch 1.9mm thick two-way operation type detector switch

SPVT Series

Surface mount type, two-way detection with body thickness of 1.9mm

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



Typical Specifications

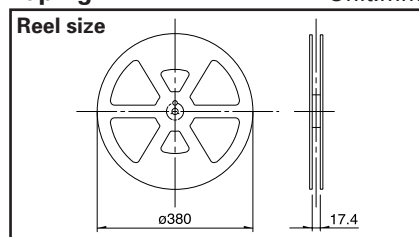
Items		Specifications
Rating (max.) / (min.) (Resistive load)		1mA 5V DC/100 μ A 3V DC
Contact resistance (Initial /After operating life)		2 Ω max./5 Ω max.
Operating force		0.4N
Operating life	Without load	100,000cycles
	With load	100,000cycles (1mA 5V DC)

Product Line

Poles	Positions	Terminal type	Operating direction	Location lug	Side terminal	Minimum order unit (pcs)	Product No.	Drawing No.
1	1	For P.C.Board (Reflow)	Right	With	With both sides.	2,500	SPVT110100	1
					With a right side.		SPVT130100	2
					With a left side.		SPVT120100	3
					Without		SPVT140100	4
				Without	With both sides.		SPVT110200	1
					With a right side.		SPVT130200	2
					With a left side.		SPVT120200	3
					Without		SPVT210100	5
			Left	With	With a right side.		SPVT230100	6
					With a left side.		SPVT220100	7
					Without		SPVT240100	8
				Without	With both sides.		SPVT210200	5
					With a right side.		SPVT230200	6
					With a left side.		SPVT220200	7

Packing Specifications

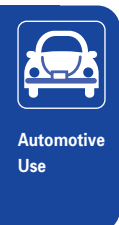
Taping Unit:mm



Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case /Japan	1 case /export packing		
2,500	5,000	10,000	16	417 × 409 × 139

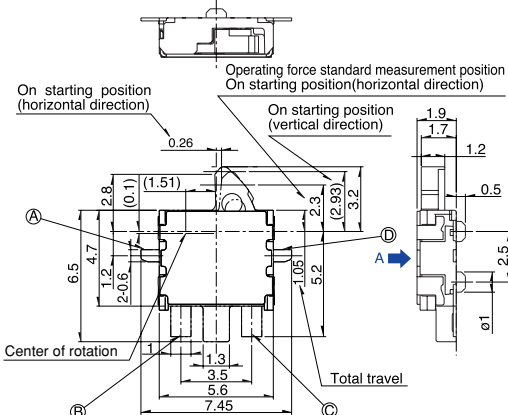
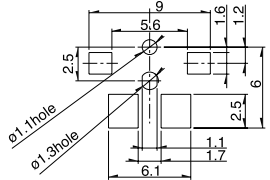
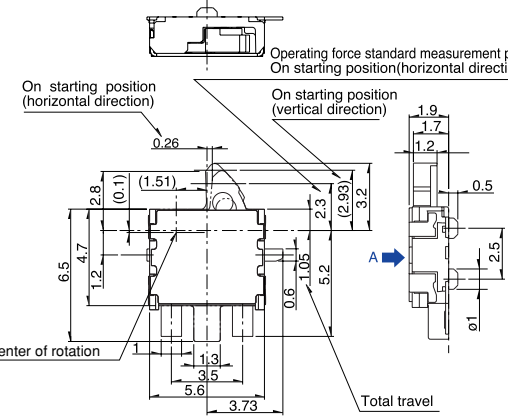
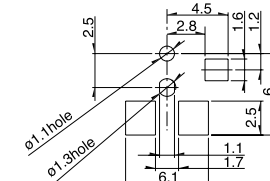
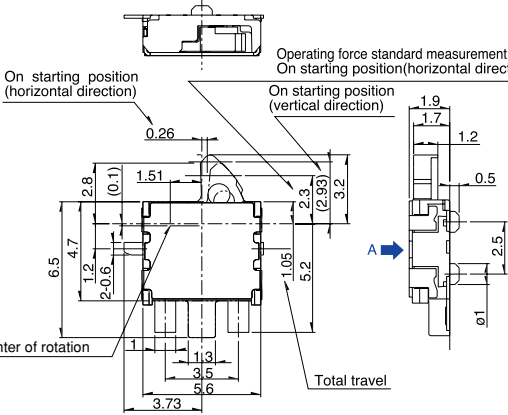
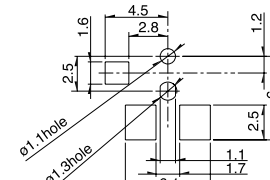
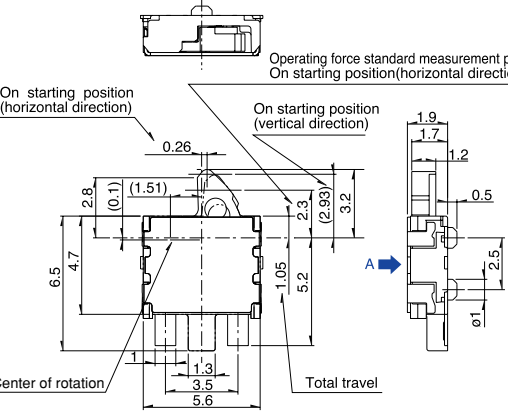
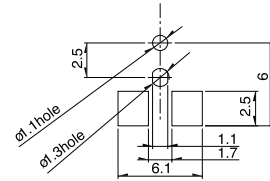
Note

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



Dimensions

Unit:mm

No.	Style	PC board mounting hole and land dimensions (Viewed from direction A)
1	 <p>Operating force standard measurement position On starting position(horizontal direction)</p> <p>On starting position (horizontal direction)</p> <p>On starting position (vertical direction)</p> <p>Center of rotation</p> <p>Total travel</p>	
2	 <p>Operating force standard measurement position On starting position(horizontal direction)</p> <p>On starting position (horizontal direction)</p> <p>On starting position (vertical direction)</p> <p>Center of rotation</p> <p>Total travel</p>	
3	 <p>Operating force standard measurement position On starting position(horizontal direction)</p> <p>On starting position (horizontal direction)</p> <p>On starting position (vertical direction)</p> <p>Center of rotation</p> <p>Total travel</p>	
4	 <p>Operating force standard measurement position On starting position(horizontal direction)</p> <p>On starting position (horizontal direction)</p> <p>On starting position (vertical direction)</p> <p>Center of rotation</p> <p>Total travel</p>	

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
 Package Type

TACT Switch™

Custom-
 Products



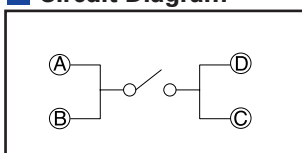
Automotive
 Use

Dimensions

Unit:mm

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

Circuit Diagram



















Note

Above dimensions indicate "with location lug" versions.

- Detector
- Push
- Slide
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List of Varieties (General-purpose Type / Water-proof Type / Telephone-hook Type)

Series	General-purpose Type					Water-proof Type		
	SPVT	SPVG	SPVL	SSCW	SPVQ5	SPVQ1	SPVQ3	
Photo								
Operation type						 	 	
Operating temperature range	-40°C to +85°C							
Automotive use	●	●	●	●	●	●	●	
Rating (max.) (Resistive load)	1mA 5V DC	50mA 20V DC	1mA 5V DC	0.1A 12V DC				
Rating (min.) (Resistive load)	100µA 3V DC		50µA 3V DC	100µA 3V DC	50µA 3V DC		50µA 3V DC or 1mA 5V DC	
Electrical performance	Initial contact resistance	2Ω max.	500mΩ max.	2Ω max.	500mΩ max.			
	Insulation resistance	100MΩ min. 100V DC			100MΩ min. 250V DC	100MΩ min. 500V DC		
	Voltage proof	100V AC for 1 minute			250V AC for 1 minute	500V AC for 1 minute		
Mechanical performance	Terminal strength	0.5N for 1 minute		1N for 1 minute	3N for 1 minute Wire strength 30N for 1 minute			
	Actuator strength	10N		5N	20N			
Durability	Operating life without Load	100,000cycles 5Ω max.	100,000cycles 1Ω max.	50,000cycles 5Ω max.	100,000cycles 1Ω max.	300,000cycles 1Ω max.	300,000cycles or 1,200,000cycles 1Ω max.	
	Operating life with Load	(1mA 5V DC) 100,000cycles 5Ω max.	(50mA 20V DC) 100,000cycles 1Ω max.	(1mA 5V DC) 50,000cycles 5Ω max.	(0.1A 12V DC) 100,000cycles 1Ω max.	(0.1A 12V DC) 300,000cycles 1Ω max.	(0.1A 12V DC) 300,000cycles or 1,200,000 1Ω max.	
Environmental performance	Cold	-40±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					
Dimensions (mm)	W	5.6	5.5	5.55	13.1	13.8	13.3	13
	D	6.5	6.5	6.6	11.35	5.8		
	H	1.9	2	1	5.3	5.8	8	8.35
Soldering	Manual soldering	350±5°C, 3s max.					300±10°C, 3 ⁺¹ s	
	Dip soldering	—					260±5°C, 5±1s	
	Reflow soldering	Please see P.102						
Number of poles	1							
Operation force	0.4N max.		0.35N max.	1N max.	2N max.	2N max. 5.9N max.	3N max.	
Page	71	74	79	80	81	82	86	

● Detector Switches Soldering Conditions102

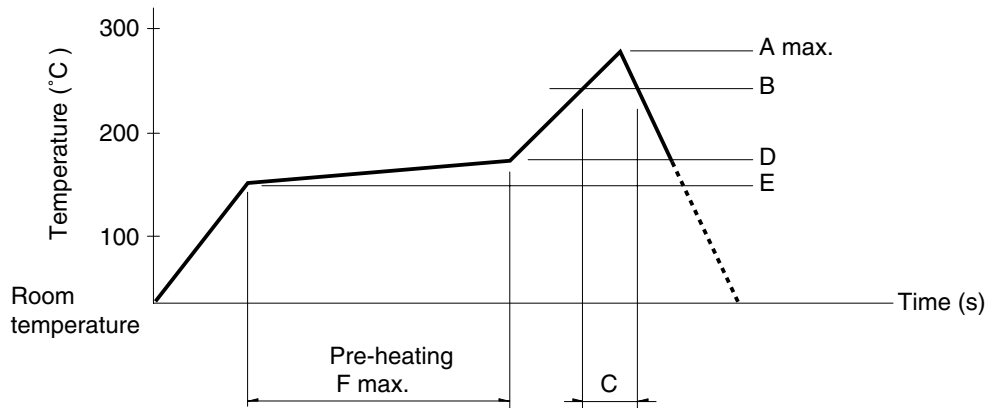
● Detector Switches Cautions103

- Detector
- Push
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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

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.