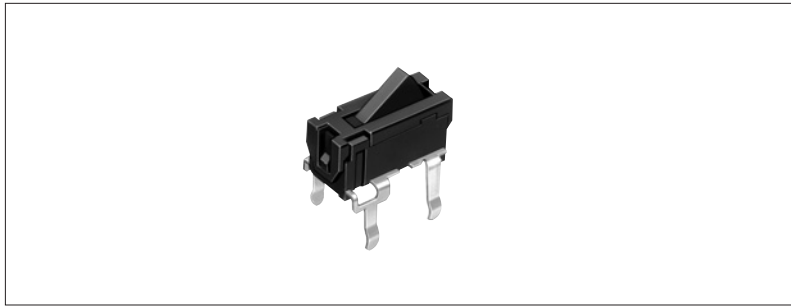


Two-way Operation Type Detector Switch

SPVF Series

Highly convenient, compact operable in both vertical and horizontal directions.



Features

- A wide variety of operation components is possible based on the application.
- Dip soldering is possible.

Applications

- For detection mechanisms in DVD players, audio players, and VCRs
- For detecting tray sizes of photo copiers

Typical Specifications

Items		Specifications
Rating (max.) (Resistive load)		1mA 5V DC
Contact resistance (Initial performance / After lifetime)		500mΩ max. / 1Ω max.
Operating force		0.3N max.
Operating life	Without load	100,000 cycles
	With load	100,000 cycles (1mA 5V DC)

Products Line

Poles	Positions	Terminal style	Terminal pitch (mm)	Minimum packing unit (pcs.)	Products No.	Drawing No.
1	1	Snap-in	5.2	100	SPVF110100	1
					SPVF120100	2
					SPVF130100	3
					SPVF140100	4
			SPVF210200		5	
			SPVF220200		6	
			SPVF230200		7	
			SPVF240200		8	
2			—		SPVF350100	9

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

Multi Control Devices

TACT

For other detailed specifications, see P.300

Dimensions

Unit : mm

No.	Style	PC board mounting hole dimensions
1	<p>Technical drawing of detector switch style 1. Front view shows a cylindrical body with a diameter of 3.5 mm and a height of 1.2 mm. The base has a diameter of 5.2 mm and a width of 5.8 mm. The side view shows a total travel position of 9 mm and an ON starting position of 4.7 mm. Other dimensions include 2.8 mm, 4.5 mm, 6.3 mm, and 6.8 mm. The mounting hole diameter is 4-1 mm.</p>	<p>PC board mounting hole dimensions for style 1. The mounting holes are arranged in a 5x5 mm grid with a hole diameter of 4-1 mm.</p>
2	<p>Technical drawing of detector switch style 2. Front view shows a cylindrical body with a diameter of 3.5 mm and a height of 1.2 mm. The base has a diameter of 5.2 mm and a width of 5.8 mm. The side view shows a total travel position of 9 mm and an ON starting position of 4.7 mm. Other dimensions include 2.8 mm, 4.5 mm, 5.75 mm, and 6.2 mm. The mounting hole diameter is 4-1 mm.</p>	<p>PC board mounting hole dimensions for style 2. The mounting holes are arranged in a 5x5 mm grid with a hole diameter of 4-1 mm.</p>
3	<p>Technical drawing of detector switch style 3. Front view shows a cylindrical body with a diameter of 3.5 mm and a height of 1.2 mm. The base has a diameter of 5.2 mm and a width of 5.8 mm. The side view shows a total travel position of 9 mm and an ON starting position of 5.7 mm. Other dimensions include 2.8 mm, 4.5 mm, 5.7 mm, 2.6 mm, 1.7 mm, 13.6 mm, and 15.2 mm. The mounting hole diameter is 4-1 mm.</p>	<p>PC board mounting hole dimensions for style 3. The mounting holes are arranged in a 5x5 mm grid with a hole diameter of 4-1 mm.</p>
4	<p>Technical drawing of detector switch style 4. Front view shows a cylindrical body with a diameter of 3.5 mm and a height of 1.2 mm. The base has a diameter of 5.2 mm and a width of 5.8 mm. The side view shows a total travel position of 14.7 mm and an ON starting position of 7.2 mm. Other dimensions include 2.8 mm, 4.5 mm, 7.2 mm, 7.8 mm, 9.95 mm, and 10.7 mm. The mounting hole diameter is 4-1 mm.</p>	<p>PC board mounting hole dimensions for style 4. The mounting holes are arranged in a 5x5 mm grid with a hole diameter of 4-1 mm.</p>
5	<p>Technical drawing of detector switch style 5. Front view shows a cylindrical body with a diameter of 3.5 mm and a height of 1.2 mm. The base has a diameter of 6.8 mm and a width of 7.4 mm. The side view shows a total travel position of 9 mm and an ON starting position of 6.2 mm. Other dimensions include 2.8 mm, 6 mm, 6.2 mm, 7.8 mm, and 8.3 mm. The mounting hole diameter is 4-1 mm.</p>	<p>PC board mounting hole dimensions for style 5. The mounting holes are arranged in a 7x5 mm grid with a hole diameter of 4-1 mm.</p>

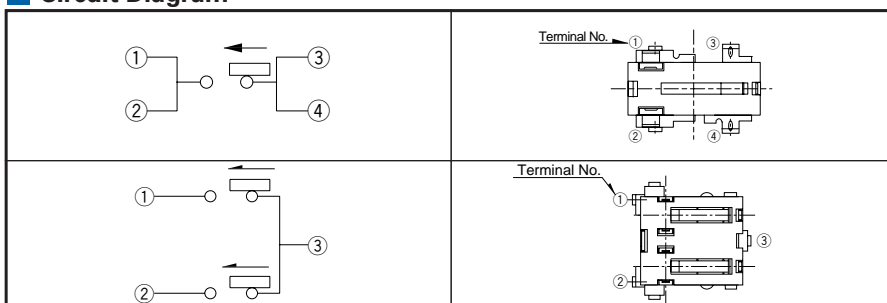
- Power
- Push
- Slide
- Rotary
- Encoders
- Jog Shuttle
- Telephone-hook
- Detector**
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT

Dimensions

Unit : mm

No.	Style	PC board mounting hole dimensions
6		
7		
8		
9		

Circuit Diagram



Products Specifications

Items		Series	SPPB	SPVE	SPPW8	SPVM	SPVF	SSCU	SSCT	SPVP	
		-10°C to +60°C									
Power	Operating temperature range										
Push	Rating (max.) (Resistive load)		0.1A 30V DC	0.1A 12V DC	0.1A 30V DC	1mA 5V DC		0.1A 12V DC		1mA 5V DC	
Slide	Electrical performance	Initial contact resistance	1Ω max.	500mΩ max.	1Ω max.	2Ω max.	500mΩ max.	70mΩ max.	20mΩ max.	5Ω max.	
Rotary		Insulation resistance	100MΩ min. 100V DC					100MΩ min. 250V DC		100MΩ min. 100V DC	
Encoders		Voltage proof	100V AC for 1 min.					250V AC for 1 min.		100V AC for 1 min.	
Jog Shuttle	Mechanical performance	Robustness of terminal	3N for 1 min.	0.5N for 1 min.	3N for 1 min.	1N for 1 min.	3N for 30 s	3N for 1 min.		0.5N for 1 min.	
Telephone-hook		Robustness of actuator	10N	5N	10N	5N	1N	5N	10N	5N	
Detector		Vibration	10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively								
Vibration Sensors		Solderability	230±5°C, 3±0.5s								
Dual-in-line Package Type	Resistance to soldering heat	Manual soldering	300±5°C, 5s max.	350±5°C, 3s max.	350±10°C, 3 ⁺¹ ₀ s	350±5°C, 3s max.	300±10°C, 3 ⁺¹ ₀ s	350±10°C, 3 ⁺¹ ₀ s		350±5°C, 3s max.	
Multi Control Devices		Dip soldering	260±5°C, 5±1s	—	255±5°C, 5±1s	—	260±5°C, 5±1s	—	260±5°C, 5±1s	—	
TACT		Reflow soldering	Please see P.300					—			Please see P.302
Durability	Operating life without load		50,000 cycles 2Ω max.	50,000 cycles 1Ω max.	100,000 cycles 2Ω max.	50,000 cycles 5Ω max.	100,000 cycles 1Ω max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	50,000 cycles 10Ω max.	
	Operating life with load		(0.1A 30V DC) 50,000 cycles 2Ω max.	(0.1A 12V DC) 50,000 cycles 1Ω max.	(0.1A 30V DC) 100,000 cycles 2Ω max.	(1mA 5V DC) 50,000 cycles 5Ω max.	(1mA 5V DC) 100,000 cycles 1Ω max.	(0.1A 12V DC) 10,000 cycles 150mΩ max.	(0.1A 12V DC) 10,000 cycles 60mΩ max.	(1mA 5V DC) 50,000 cycles 10Ω max.	
Environmental performance	Cold		-20±2°C for 96h	-25±2°C for 96h	-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								