

Low-profile One-way Detector Switch

SPVP Series

The 2mm long stroke made the thin 1.2mm profile possible.

Power
Push
Slide
Rotary
Encoders

Detector

Dual-in-line
Package Type

Multi Control
Devices

TACT

Custom-
Products



Car Use

Features

- Low-profile: only 1.2mm from the print substrate's installation surface.
- Available for reflow soldering.
- The double-sided sliding contact provides high reliability.

Applications

- For detection mechanisms in electronic devices, including DSCs, audio players, and camcorders

Typical Specifications

Items		Specifications
Rating (max.) (Resistive load)		1mA 5V DC
Contact resistance (Initial performance/After lifetime)		5Ω max./10Ω max.
Operating force		0.55N max.
Operating life	Without load	50,000 cycles
	With load	50,000 cycles (1mA 5V DC)

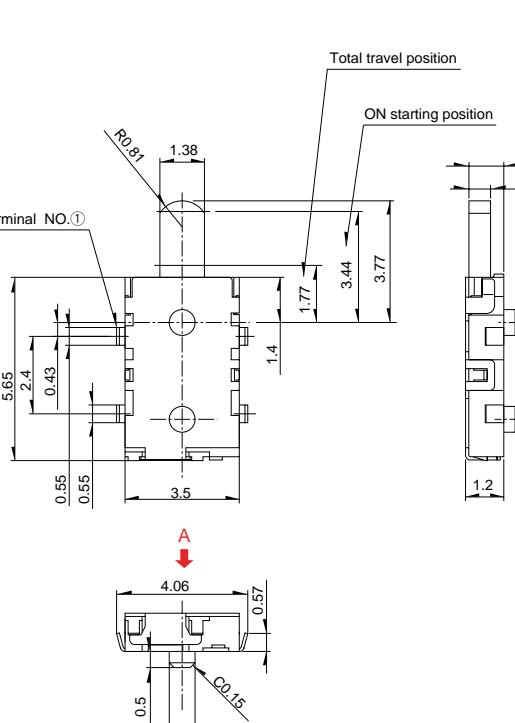
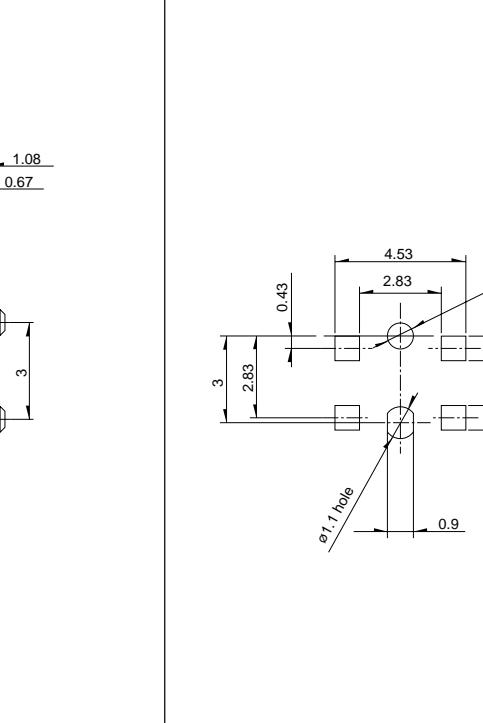
Products Line

Poles	Positions	Terminal style	Location lug	Minimum packing unit (pcs.)	Products No.
1	1	For PC board (Reflow)	With	4,500	SPVP110100
			Without		SPVP120100

For other detailed specifications, see P.303
For specifications for the taping package, see P.307

Dimensions

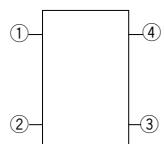
Unit:mm

Style	PC board mounting hole dimensions (Viewed from direction A)
	

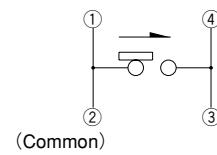
Note

Dimensions show only the shape of the print terminal.

■ Terminal Layout (Viewed from direction A)



■ Circuit Diagram



Products Specifications

Items	Series	SPPB	SPVE	SPPW8	SPVM	SPVR	SPVP	SPVN	SPVG	SPVL	SSCM										
Operating temperature range	-10°C to +60°C																				
Rating (max.) (Resistive load)	0.1A 30V DC	0.1A 12V DC	0.1A 30V DC	1mA 5V DC				50mA 20V DC	1mA 5V DC												
Electrical performance	Initial contact resistance	1Ω max.	500mΩ max.	1Ω max.	2Ω max.	3Ω max.	5Ω max.	2Ω max.	500mΩ max.	2Ω max.											
	Insulation resistance	100MΩ min. 100V DC																			
	Voltage proof	100V AC for 1 min.																			
Mechanical performance	Robustness of terminal	3N for 1 min.	0.5N for 1 min.	3N for 1 min.	1N for 1 min.	0.5N for 1 min.			1N for 1 min.	0.5N for 1 min.											
	Robustness of actuator	10N	5N	10N	5N	2N	5N		10N	5N	0.5N										
	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																			
	Resistance to soldering heat	Manual soldering	300±5°C, 5s max.	350±5°C, 3s max.																	
Durability		Dip soldering	260±5°C, 5±1s	—	255±5°C, 5±1s	—															
		Reflow soldering	Please see P.306																		
Environmental performance	Operating life without load	50,000 cycles 2Ω max.	50,000 cycles 1Ω max.	100,000 cycles 2Ω max.	50,000 cycles 5Ω max.	50,000 cycles 10Ω max.	50,000 cycles 5Ω max.	100,000 cycles 1Ω max.	50,000 cycles 5Ω 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) 50,000 cycles 10Ω max.	(1mA 5V DC) 50,000 cycles 5Ω max.	(50mA 20V DC) 100,000 cycles 1Ω max.	(1mA 5V DC) 50,000 cycles 5Ω max.	—											
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																			

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Package TypeMulti Control
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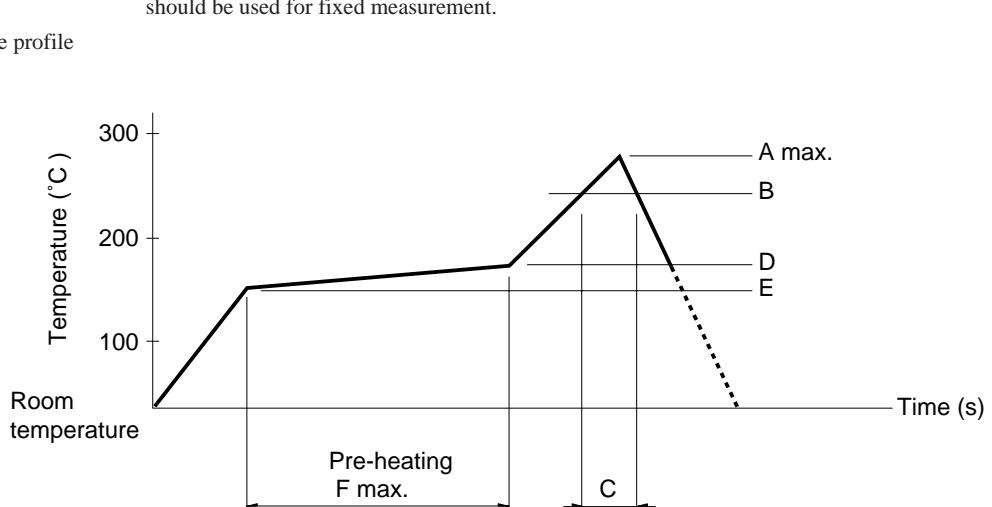
TACT

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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



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SPPB	250					
SPVE	260	230	40			
SPPW8	250	200	20			
SPVM						
SPVR						
SPVP						
SPVN	260	230	40	180	150	120
SPVG						
SPVL						
SSCM						
SPPY5	240		20	150	Room Temperature	180

Notes

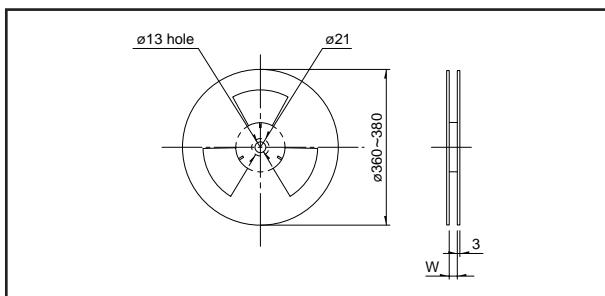
1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. As the conditions vary some how depending on the kind of reflow soldering equipment, please make sure you have the right one before use.

Taping Specifications

Taping Packaging

Reel Size

Unit:mm



Series		Number of packages (pcs.)			Reel width W (mm)	Tape width (mm)	Detector		
		1 reel	1 case / domestic	1 case / export packing					
SPPB	53 (Horizontal)	1,500	3,000	6,000	24.4	24	Dual-in-line Package Type		
	53 (Vertical)	600	1,200	2,400			Multi Control Devices		
	63, 64	1,300	2,600	5,200			TACT		
SPVE	Standard	h=3.8	2,800	5,600	22,400	12.4	12		
		h=4.1	2,200	4,400	17,600				
	Low-profile	h=4.8	2,000	4,000	16,000				
SPPW81		h=5.2	2,800	5,600	22,400				
		h=5.5	2,000	4,000	16,000				
		h=3.3	2,000	4,000	16,000				
		h=4.75	2,800	5,600	22,400				
		h = 6.1 (Reflow)	1,000	2,000	4,000	24.4	24		
		h = 6.55 (Reflow)	850	1,700	3,400				
		SPVM	3,000	6,000	12,000				
			2,500	5,000	10,000				
			4,500	9,000	18,000				
			5,000	10,000	20,000				
			2,500	5,000	10,000				
			5,000	10,000	20,000				
		SPV р	3,000	6,000	12,000	16.4	16		
			550	1,650	3,300				

Note

Order products in N minimum packing units (1 reel or 1 case).