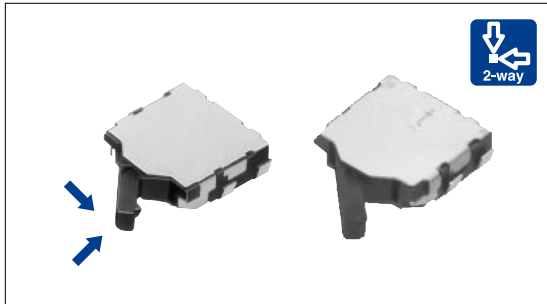


# Detector Switch Low-profile Two-way Operation Type

SPVN Series



Low-profile type with thickness of 1mm.



## Typical Specifications

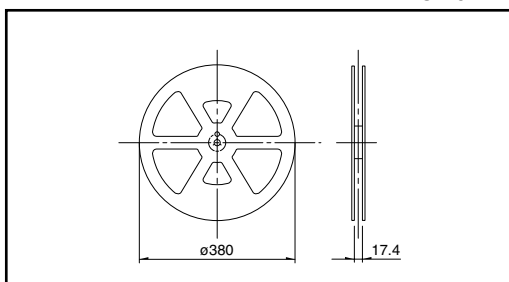
Items		Specifications
Rating( max. )( min. ) ( Resistive load )		1mA 5V DC/50 $\mu$ A 3V DC
Contact resistance ( Initial /After operating life )		2 max./5 max.
Operating force		0.35N max.
Operating life	Without load	50,000cycles
	With load	50,000cycles( 1mA 5V DC )

## Product Line

Poles	Positions	Terminal type	Lever length	Operating direction	Location lug	Minimum order unit( pcs )	Product No.	Drawing No.
1	1	For PC board ( Reflow )	Standard	Right	With	20,000	SPVN110101	1
					Without		SPVN120101	
				Left	With		SPVN210101	2
					Without		SPVN220101	
			Long	Right	With		SPVN310100	3
					Without		SPVN320100	
				Left	With		SPVN410100	4
					Without		SPVN420100	

## Taping Specifications (Taping Packaging)

Reel Size Unit:mm



Number of packages( pcs. )			Tape width ( mm )
1 reel	1 case /Japan	1 case /export packing	
5,000	10,000	20,000	16

### Note

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

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products

Dimensions

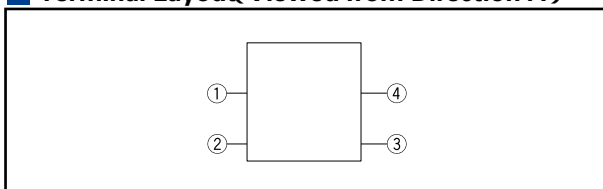
Unit:mm

No.	Photo	Style	PC board mounting hole and land dimensions ( Viewed from direction A )
1			
2			
3			
4			

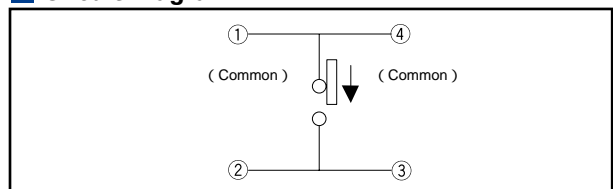
Note

Above dimensions indicate "with location lug" versions.

Terminal Layout ( Viewed from Direction A )


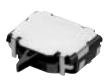





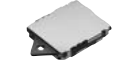










Circuit Diagram



## List of Varieties ( General-purpose Type )

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

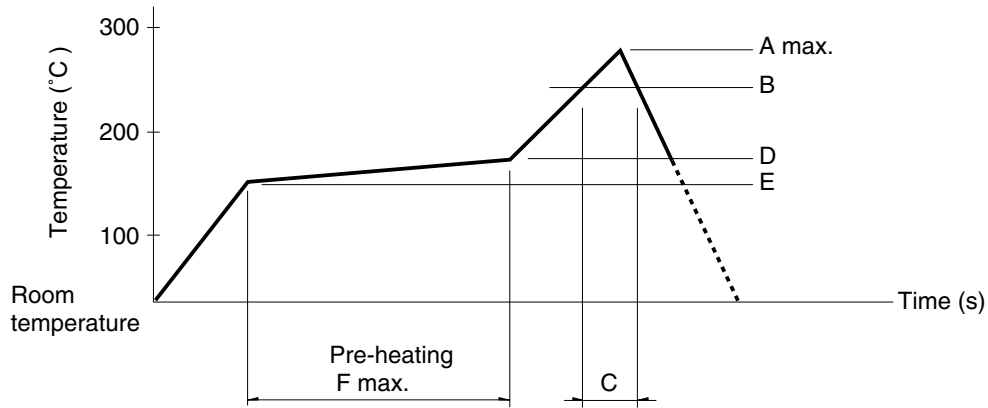
Series	General-purpose Type								
	SSCF	SSCM	SPVP	SPVC1	SPVN	SPVS	SPVG	SPVL	
Photo									
Operation type									
Operating temperature range	-40 to +85	-10 to +60	-40 to +85						
Rating (max.) (Resistive load)	0.1A 12V DC	1mA 5V DC		10mA 16V DC	1mA 5V DC		50mA 20V DC	1mA 5V DC	
Rating (min.) (Resistive load)	50μA 3V DC		100μA 3V DC	50μA 3V DC			100μA 3V DC	50μA 3V DC	
Electrical performance	Initial contact resistance	100m max.	2 max.	5 max.	1 max.	2 max.		500m max.	2 max.
	Insulation resistance	100M min. 100V DC							
	Voltage proof	100V AC for 1 minute							
Mechanical performance	Terminal strength	5N for 1 minute	0.5N for 1 minute		3N for 1 minute	0.5N for 1 minute		1N for 1 minute	
	Actuator strength	10N	0.5N	5N	10N	5N		10N	5N
Durability	Operating life without Load	50,000cycles 200m max.	50,000cycles 5 max.	50,000cycles 10 max.	25,000cycles 2 max.	50,000cycles 5 max.		100,000cycles 1 max.	50,000cycles 5 max.
	Operating life with Load	(0.1A 12V DC) 50,000cycles 300m max.	(1mA 5V DC) 50,000cycles 5 max.	(1mA 5V DC) 50,000cycles 10 max.	(10mA 16V DC) 25,000cycles 2 max.	(1mA 5V DC) 50,000cycles 5 max.		(50mA 20V DC) 100,000cycles 1 max.	(1mA 5V DC) 50,000cycles 5 max.
Environmental performance	Cold	-20 ± 2 for 96h						-40 ± 2 for 96h	-20 ± 2 for 96h
	Dry heat	85 ± 2 for 96h							
	Damp heat	40 ± 2 , 90 to 95%RH for 96h							
Dimensions (mm)	W	11	5	3.5	6.3	3.8	3.5	5.5	5.55
	D	5.8	4	5.65	7.4	3.6	3.3	6.5	6.6
	H	12.4	1.5	1.2	2.8	1		2	1
Soldering	Manual soldering	350 ± 10 , 3 <sup>+1</sup> / <sub>0</sub> s	350 ± 5 , 3s max.		350 ± 10 , 3 <sup>+1</sup> / <sub>0</sub> s	350 ± 5 , 3s max.			
	Dip soldering	260 ± 5 , 5 ± 1s			260 ± 5 , 3s max.				
	Reflow soldering	Please see P.79		Please see P.79					
Number of poles	1								
Operation force	0.7N max.	0.35N max.	0.55N max.	0.85N max.	0.35N max.		0.4N max.	0.35N max.	
Page	46	48	49	50	51	53	55	60	

Detector Switches Soldering Conditions .....79  
 Detector Switches Cautions .....80

# 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 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( ) 3s max.	B( )	C(s)	D( )	E( )	F(s)
SPPB	250	230	40			
SPPW8		200	20			
SPVE	260	230	40	180	150	120
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SSCM						
SPPY5						

**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.