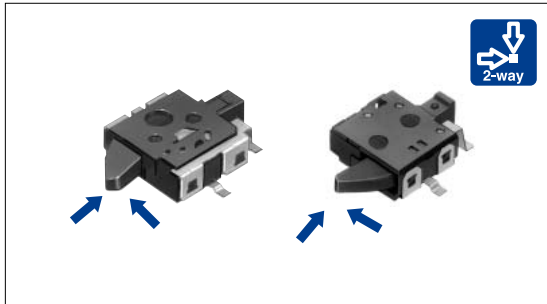


# Detector Switch 2mm-thick Two-way Operation Type

SPVG Series



A surface mountable two-way operation detector switch with 2mm height.



## Typical Specifications

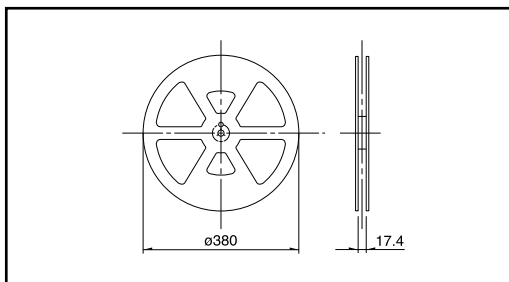
Items		Specifications
Rating( max. )( min. ) ( Resistive load )		50mA 20V DC/100 $\mu$ A 3V DC
Contact resistance ( Initial /After operating life )		500m max./1 max.
Operating force		0.4N max.
Operating life	Without load	100,000cycles
	With load	100,000cycles( 50mA 20V DC )

## Product Line

Poles	Positions	Terminal type	Lever length	Operating direction	Location lug	Side terminal	Minimum order unit( pcs )	Product No.	Drawing No.	
1	1	For PC board ( Reflow )	Standard	Right	With	With both sides.	10,000	SPVG110301	1	
						With a right side.		SPVG111500	2	
					With a left side.	SPVG111400		3		
					Without	SPVG120302		4		
				Left	With	With both sides.		SPVG130200	1	
						With a right side.		SPVG210302	5	
					With a left side.	SPVG211200		6		
					Without	SPVG211300		7		
			Short	Right	With	With both sides.		SPVG220300	8	
						Without		SPVG230200	5	
					Left	With		With both sides.	SPVG310300	9
								Without	SPVG320200	10
				Left	With	With both sides.		SPVG330200	9	
						Without		SPVG410300	11	
					Without	With both sides.		SPVG420200	12	
						With both sides.		SPVG430200	11	

## Taping Specifications (Taping Packaging)

Reel Size Unit:mm



Number of packages( pcs. )			Tape width ( mm )
1 reel	1 case /Japan	1 case /export packing	
2,500	5,000	10,000	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

# Detector Switch 2mm-thick Two-way Operation Type | SPVG Series

## Dimensions

Unit:mm

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

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


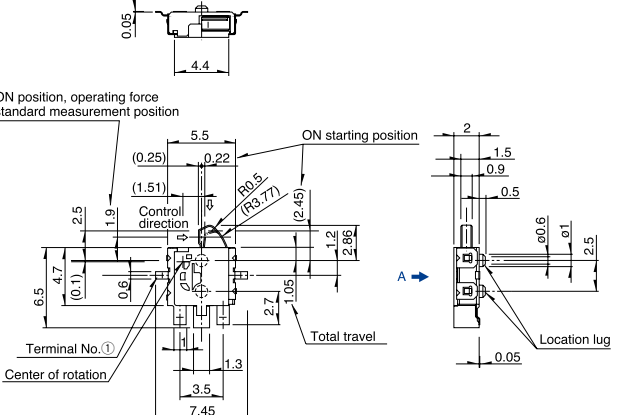
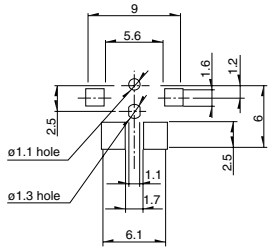

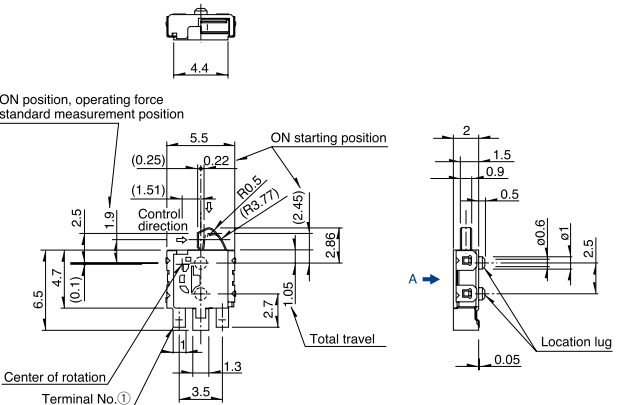
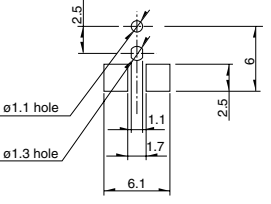

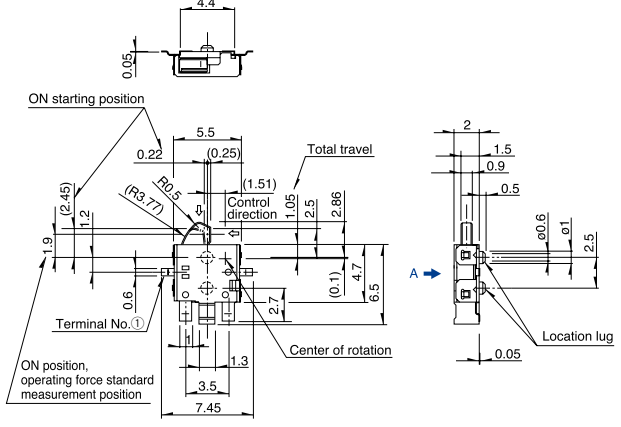
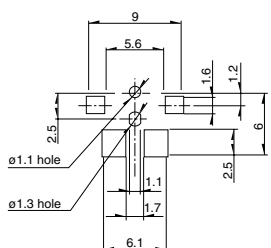

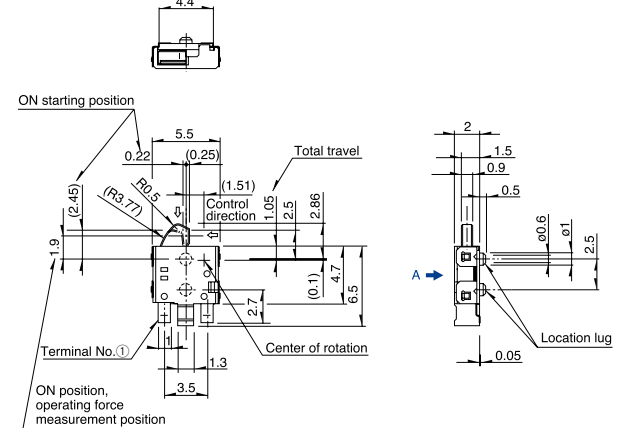
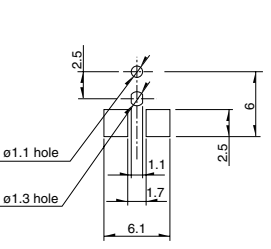
Dimensions

Unit:mm

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

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole and land dimensions ( Viewed from direction A )
9			
10			
11			
12			

Note

Above dimensions indicate "with location lug" versions.

Detector

Push

Slide

Rotary

Encoders

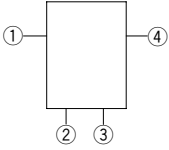
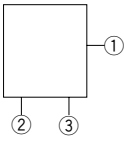
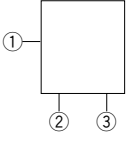
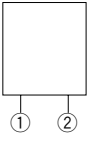
Power

Dual-in-line  
Package Type

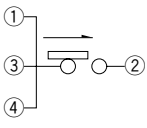
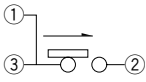
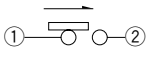
TACT Switch™

Custom-  
Products


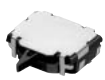














Terminal Layout (Viewed from Direction A)

<p>Drawing No. : 1, 5, 9, 11</p> 	<p>Drawing No. : 2, 6</p> 
<p>Drawing No. : 3, 7</p> 	<p>Drawing No. : 4, 8, 10, 12</p> 

Circuit Diagram

<p>Drawing No. : 1, 5, 9, 11</p> 	<p>Drawing No. : 2, 3, 6, 7</p> 
<p>Drawing No. : 4, 8, 10, 12</p> 	

## List of Varieties ( General-purpose Type )

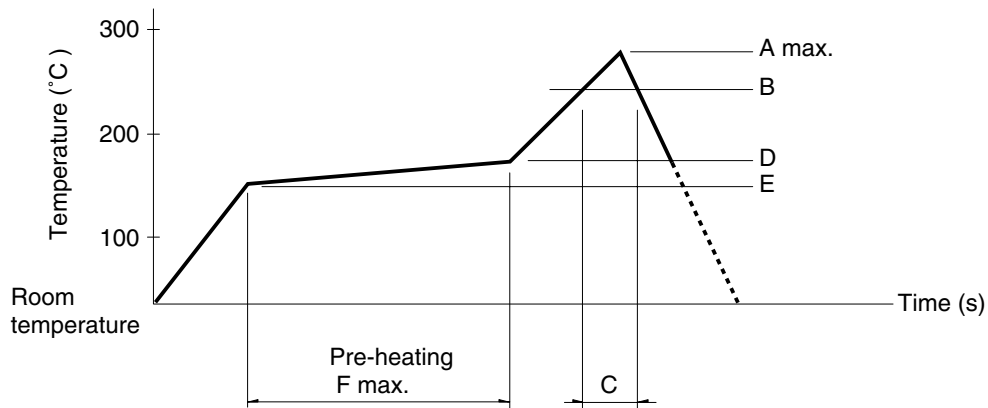
Series	General-purpose Type								
	SSCF	SSCM	SPVP	SPVC1	SPVN	SPVS	SPVG	SPVL	
<b>Detector</b> Photo									
<b>Operation type</b>	 2-way	 2-way	 1-way	 1-way	 2-way	 2-way	 2-way	 3-way	
<b>Operating temperature range</b>	-40 to +85	-10 to +60	-40 to +85						
<b>Rating (max.) (Resistive load)</b>	0.1A 12V DC	1mA 5V DC		10mA 16V DC	1mA 5V DC		50mA 20V DC	1mA 5V DC	
<b>Rating (min.) (Resistive load)</b>	50μA 3V DC		100μA 3V DC	50μA 3V DC			100μA 3V DC	50μA 3V DC	
<b>Electrical performance</b>	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							
<b>Mechanical performance</b>	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
<b>Durability</b>	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.
<b>Environmental performance</b>	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							
<b>Dimensions (mm)</b>	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
<b>Soldering</b>	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			
<b>Number of poles</b>	1								
<b>Operation force</b>	0.7N max.	0.35N max.	0.55N max.	0.85N max.	0.35N max.		0.4N max.	0.35N max.	
<b>Page</b>	46	48	49	50	51	53	55	60	

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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.