

# Detector Switch 50mA 48V DC Qualified Surface Mounting Type Telephone-hook

SPPY5 Series

www.DataSheet4U.com



A surface mount type detector switch with 7.15mm height contribute to thinner set design.



## Typical Specifications

Items		Specifications
Rating( max. )( min. ) ( Resistive load )		50mA 48V DC/0.1mA 3V DC
Contact resistance ( Initial / After operating life )		100m max./1 max.
Operating force		0.8N max.
Operating life	Without load	300,000cycles
	Rating( min. )	300,000cycles
	Rating ( max. )	100,000cycles

## Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products

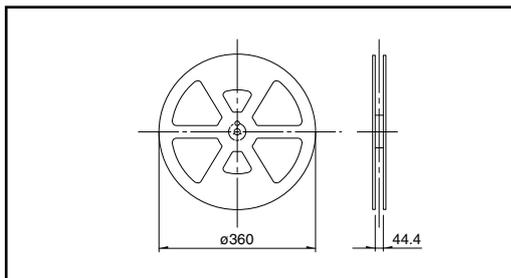
## Product Line

Poles	Positions	Operation	Minimum order unit( pcs )	Product No.	Drawing No.
2	2	Normal-operation	3,300	SPPY520100	1
		Reverse-operation		SPPY520200	2

## Taping Specifications (Taping Packaging)

Reel Size

Unit:mm



Number of packages( pcs. )			Tape width ( mm )
1 reel	1 case /Japan	1 case /export packing	
550	1,650	3,300	44

## Note

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

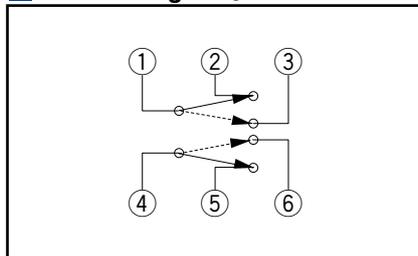
Dimensions

Unit:mm

- Detector
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No.	Style	PC board mounting hole and land dimensions ( Viewed from direction A )												
1	<p><b>Normal-operation</b></p>	<p><b>Timing lag diagram</b></p> <table border="1"> <tr> <td>① ②</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>① ③</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>④ ⑤</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>④ ⑥</td> <td>OFF</td> <td>ON</td> </tr> </table> <p>5.95 max.    2.35 min.</p> <p>Travel position( X )</p>	① ②	ON	OFF	① ③	OFF	ON	④ ⑤	ON	OFF	④ ⑥	OFF	ON
① ②	ON	OFF												
① ③	OFF	ON												
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2	<p><b>Reverse-operation</b></p>	<p><b>Timing lag diagram</b></p> <table border="1"> <tr> <td>① ②</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>① ③</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>④ ⑤</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>④ ⑥</td> <td>OFF</td> <td>ON</td> </tr> </table> <p>0.9 min.    7.7 max.</p> <p>Travel position( X )</p>	① ②	ON	OFF	① ③	OFF	ON	④ ⑤	ON	OFF	④ ⑥	OFF	ON
① ②	ON	OFF												
① ③	OFF	ON												
④ ⑤	ON	OFF												
④ ⑥	OFF	ON												

Circuit Diagram( Viewed from Direction A )



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

Series	General-purpose Type		Water-proof Type					Telephone-hook Type	
	SSCW	SPVQ5	SPVQ1	SPVQ3	SPVQ4	SPVQ6	SSCN	SPPY5	
Photo									
Operation type			 1-way 	 1-way 					
Operating temperature range	-40 to +85							-10 to +60	
Rating ( max. ) ( Resistive load )	0.1A 20V DC	0.1A 12V DC					0.1mA 3V DC min. 50mA 48V DC max.		
Rating ( min. ) ( Resistive load )	100μA 3V DC	50μA 3V DC	50μA 3V DC or 1mA 5V DC	50μA 3V DC	50μA 5V DC	100μA 3V DC	0.1mA 3V DC		
Electrical performance	Initial contact resistance	500m max.						100m max.	
	Insulation resistance	100M min. 250V DC	100M min. 500V DC						
	Voltage proof	250V AC for 1 minute	500V AC for 1 minute						
Mechanical performance	Terminal strength	3N for 1 minute					5N for 1 minute		
	Actuator strength	20N					10N	5N	
Durability	Operating life without Load	100,000cycles 1 max.	300,000cycles 1 max.	300,000cycles or 1,200,000cycles 1 max.	300,000cycles 1 max.	100,000cycles 1 max.	300,000cycles 1 max.		
	Operating life with Load	( 0.1mA 12V DC ) 100,000cycles 1 max.	( 0.1A 12V DC ) 300,000cycles 1 max.	( 0.1A 12V DC ) 300,000cycles or 1,200,000 1 max.	( 0.1A 12V DC ) 300,000cycles 1 max.	( 0.1A 12V DC ) 100,000cycles 1 max.	( 1mA 3V DC ) 300,000cycles 1 max. or ( 50mA 60V DC ) 100,000cycles 1 max.		
Environmental performance	Cold	-40 ± 2 for 500h						-20 ± 2 for 96h	
	Dry heat	85 ± 2 for 500h						85 ± 2 for 96h	
	Damp heat	60 ± 2 , 90 to 95%RH for 500h						40 ± 2 , 90 to 95%RH for 96h	
Dimensions ( mm )	W	13.1	13.8	13.3	13	14.7	13.3	13	14.4
	D	11.35		5.8		5.4	5.3	25	28.6
	H	5.3	5.8	8	8.35	7.6	7	5	7.15
Soldering	Manual soldering	300 ± 10 , 3 <sup>+1</sup> s						350 ± 5 , 3s max.	
	Dip soldering	260 ± 5 , 5 ± 1s							
	Reflow soldering							Please see P.79	
Number of poles	1							2	
Operation force	1N max.	2N max.	2N max. 5.9N max.	1 ± 0.5N	1 ± 0.3N	1 ± 0.5N	2N max.	0.8N max.	
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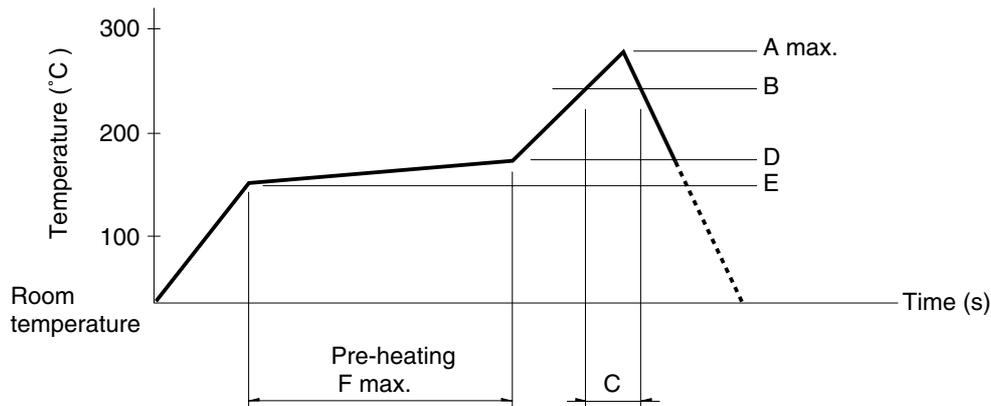
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# Soldering Conditions

## Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 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**

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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.