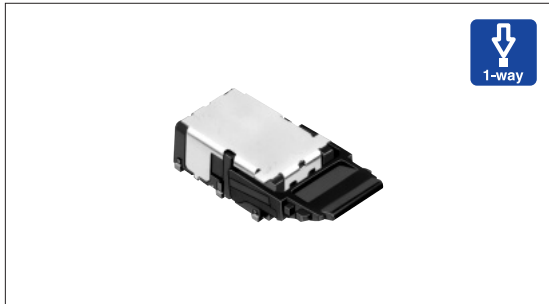


Detector Switch 50mA 48V DC Qualified Surface Mounting Type Telephone-hook SPPY5 Series



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/100 μ A 3V DC
Contact resistance (Initial /After operating life)		100m Ω max./1 Ω 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

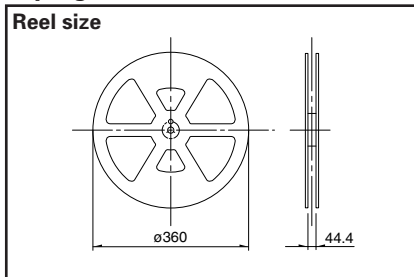
Poles	Positions	Operation	Minimum order unit (pcs)	Product No.	Drawing No.
2	2	Normal-operation	3,300	SPPY520100	1
		Reverse-operation		SPPY520200	2

Packing Specifications

Taping

Unit:mm

Reel size



Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case /Japan	1 case /export packing		
550	1,650	3,300	44	395 × 395 × 352

Note

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

Dimensions

Unit:mm

Detector

Push

Slide

Rotary

Encoders

Power

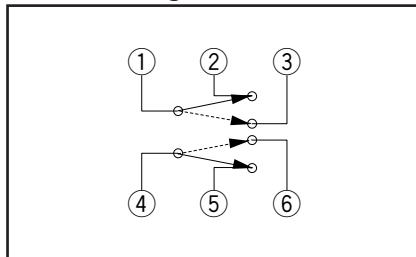
Dual-in-line
Package Type

TACT Switch™













Custom-
Products

No.	Style	PC board mounting hole and land dimensions (Viewed from direction A)												
1	<p>Normal-operation</p>	<p>Timing lag diagram</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. 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												
2	<p>Reverse-operation</p>	<p>Timing lag diagram</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. 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 (Water-proof Type / Telephone-hook Type)

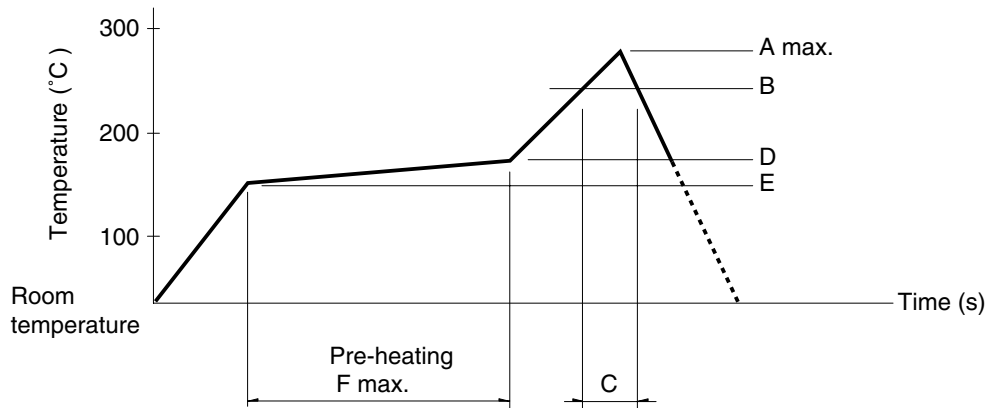
Series	Water-proof Type					Telephone-hook Type	
	SPVQ4	SPVQ6	SPVQ7	SPVQA	SSCN	SPPY5	
Detector Photo							
Operation type							
Operating temperature range	-40°C to +85°C					-10°C to +60°C	
Automotive use	●	●	●	●	●	—	
Rating (max.) (Resistive load)	0.1A 12V DC					50mA 48V DC max.	
Rating (min.) (Resistive load)	50μA 3V DC	50μA 5V DC			100μA 3V DC		
Electrical performance	Initial contact resistance	500mΩ max.				100mΩ max.	
	Insulation resistance	100MΩ min. 500V DC					
	Voltage proof	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	300,000cycles 1Ω max.			100,000cycles 1Ω max.	300,000cycles 1Ω max.	
	Operating life with Load	(0.1A 12V DC) 300,000cycles 1Ω max.			(0.1A 12V DC) 100,000cycles 1Ω max.	(50mA 48V DC) 100,000cycles (100μA 3V DC) 300,000cycles	
Environmental performance	Cold	-40±2°C for 500h				-20±2°C for 96h	
	Dry heat	85±2°C for 500h				85±2°C for 96h	
	Damp heat	60±2°C, 90 to 95%RH for 500h				40±2°C, 90 to 95%RH for 96h	
Dimensions (mm)	W	14.7	13.3	14.7	15.2	13	14.4
	D	5.4	5.3	5.4	6.4	5	28.6
	H	7.6	7	6.7	7.95	25	7.15
Soldering	Manual soldering	300±10°C, 3 ⁺¹ s			—	300±10°C, 3 ⁺¹ s	350±5°C, 3s max.
	Dip soldering	260±5°C, 5±1s			—		
	Reflow soldering	—					Please see P.102
Number of poles	1					2	
Operation force	1±0.3N	3N max.	1±0.5N		2N max.	0.8N max.	
Page	92	93	95	97	99	100	

- Detector Switches Soldering Conditions102
- Detector Switches Cautions103

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



Detector

Push

Slide

Rotary

Encoders

Power

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Products

Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SPPB	250	230	40	180	150	120
SPPW8		200	20			
SPVE	260	230	40			
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SPVT						
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. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.