

Detector Switch

One-way Operation Type

SPPW8 Series



One-way operation detector switch ideal for media detection.

Detector

Push

Slide

Rotary

Encoders

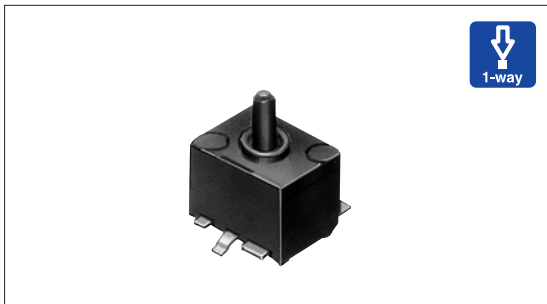
Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products



Features

- Reflow and dip solderable.
- Reflow solderable type can be packaged and delivered in carrier taping. (Except for slider high-10, 3mm products)

Applications

- For detecting mechanisms in DVD players/recorders and facsimile machines
- For detecting the insertion of various media in portable CD/MD players
- For detecting battery lids in digital still cameras
- For massage machine remote controllers

Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		0.1A 30V DC/100 μ A 3V DC
Contact resistance (Initial /After operating life)		1 Ω max./2 Ω max.
Operating force		0.3N max.
Operating life	Without load	100,000cycles
	With load	100,000cycles (0.1A 30V DC)

Product Line

Poles	Positions	Terminal type	Slider height (mm)	ON start position (mm)	Total travel (mm)	Product No.	Drawing No.
1	1	For PC board (Reflow)	h=6.1	h ₁ =5.6	h ₂ =4.45	SPPW812302	1
		For PC board (Dip)				SPPW812300	2
		For PC board (Reflow)	h=6.55	h ₁ =6.05	h ₂ =4.85	SPPW810201	1
		For PC board (Dip)				SPPW810203	2
		For PC board (Reflow)	h=7.6	h ₁ =7.1	h ₂ =5.9	SPPW811203	1
		For PC board (Dip)				SPPW811200	2
		For PC board (Reflow)	h=10.3	h=9.8	h=8.6	SPPW810401	3
		For PC board (Dip)				SPPW810400	4

Note

Products other than those listed in the above chart are also available. Please contact us for details.

Refer to P.67 for product specifications.
Refer to P.71 for taping package specifications.

Dimensions

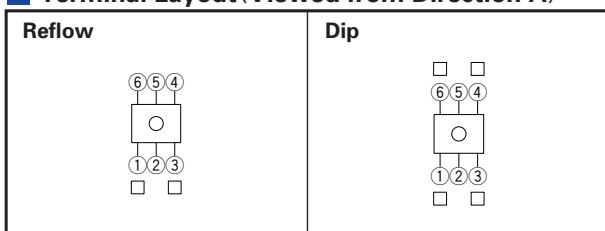
Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from direction A)
1	Reflow 	
2	Dip 	
3	Reflow 	
4	Dip 	

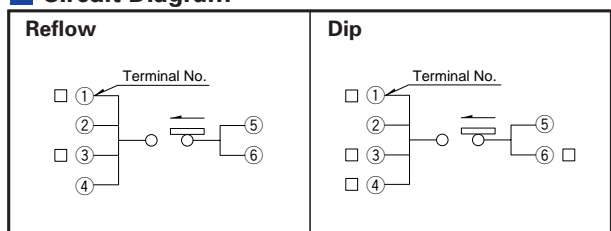
Note

Above dimensions indicate "with locating lug" versions.

Terminal Layout (Viewed from Direction A)



Circuit Diagram



Notes

1. Products without location lug are also available.
2. Contact us for other slider height variations.
3. □ mark shows a cutting terminal.
4. Contact us for other terminal types.

Product Specifications

Items		Series										
		SPPB	SPVE	SPPW8	SPVM	SPVR	SPVF	SSCU	SSCT	SSCF	SSCM	
Operating temperature range		-40°C to +85°C	-10°C to +60°C		-40°C to +85°C		-10°C to +60°C	-40°C to +85°C			-10°C to +60°C	
Rating (max.) (Resistive load)		0.1A 30V DC			1mA 5V DC			0.1A 12V DC			1mA 5V DC	
Electrical performance	Initial contact resistance	1 Ω max.	500mΩ max.	1 Ω max.	2 Ω max.	3 Ω max.	500mΩ max.	70mΩ max.	20mΩ max.	100mΩ max.	2 Ω max.	
	Insulation resistance	100MΩ min. 100V DC						100MΩ min. 250V DC		100MΩ min. 100V DC		
	Voltage proof	100V A for 1minute						250V AC for 1minute		100V AC for 1minute		
Mechanical performance	Terminal strength	3N for 1minute	0.5N for 1minute	3N for 1minute	1N for 1minute	0.5N for 1minute	3N for 30 s	3N for 1minute		5N for 1minute	0.5N for 1minute	
	Actuator strength	10N	5N	10N	5N	2N	1N	5N	10N		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.				300±10°C, 3 ⁺¹ 0s	350±5°C, 3s max.	350±10°C, 3 ⁺¹ 0s	350±5°C, 3s max.	
		Dip soldering	260±5°C, 5±1s	255±5°C, 5±1s				245±5°C, 5±1s	260±5°C, 5±1s			
Reflow soldering		Please see P.70						—————			Please see P.70	
Durability	Operating life without load	50,000 cycles 2 Ω max.	50,000 cycles 1 Ω max.	100,000 cycles 2 Ω max.	50,000 cycles 5 Ω max.		100,000 cycles 1 Ω max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	50,000 cycles 200mΩ max.	50,000 cycles 5 Ω max.	
	Operating life with load	(0.1A 30V DC) 50,000cycles 2 Ω max.	(0.1A 30V DC) 50,000cycles 1 Ω max.	(0.1A 30V DC) 100,000cycles 2 Ω max.	(1mA 5V DC) 50,000cycles 5 Ω max.		(1mA 5V DC) 100,000cycles 1 Ω max.	(0.1A 12V DC) 10,000cycles 150mΩ max.	(0.1A 12V DC) 10,000cycles 60mΩ max.	(0.1A 12V DC) 50,000cycles 300mΩ max.	(1mA 5V DC) 50,000cycles 5 Ω max.	
Environmental performance	Cold	-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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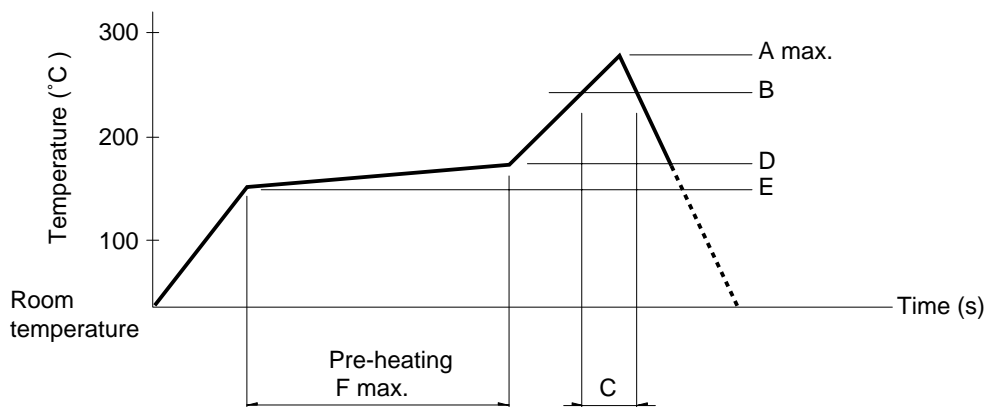
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Soldering Conditions

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	230	40			
SPPW8		200	20			
SPVE	260	230	40	180	150	120
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SSCM						
SPPY5						

Notes

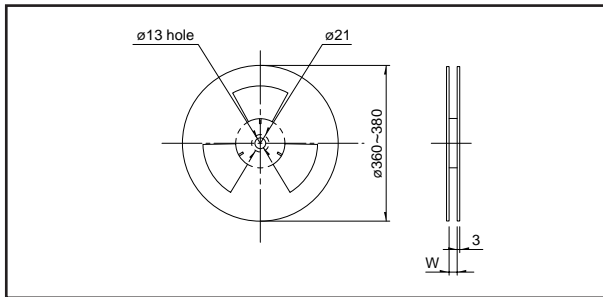
1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

Taping Specifications

Taping Packaging

Reel Size

Unit:mm



Series		Number of packages(pcs.)			Reel width W(mm)	Tape width (mm)
		1 reel	1 case (shipment within Japan)	1 case (shipment outside of Japan)		
SPPB	53(Horizontal)	1,500	3,000	6,000	24.4	24
	53(Vertical)	600	1,200	2,400		
	63, 64	1,300	2,600	5,200		
SPPW81	h = 6.1(Reflow)	1,000	2,000	4,000	12.4	12
	h = 6.55(Reflow)					
	h = 7.6(Reflow)	850	1,700	3,400		
SPVE	Standard	h=3.8	2,800	5,600	16.4	16
		h=4.1				
		h=4.8	2,200	4,400		
		h=5.2	2,000	4,000		
		h=5.5				
	Low-profile	h=3.3	2,800	5,600		
SPVG		2,500	5,000	10,000	44.4	44
SPVL		5,000	10,000	20,000		
SPVM		3,000	6,000	12,000		
SPVN		5,000	10,000	20,000		
SPVP		4,500	9,000	18,000		
SPVR		2,500	5,000	10,000		
SPVS		5,000	10,000	20,000		
SSCM		3,000	6,000	12,000		
SPPY5		550	1,650	3,300		

Note

Please place purchase orders for taping products per minimum package units (1 reel or 1 case).

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