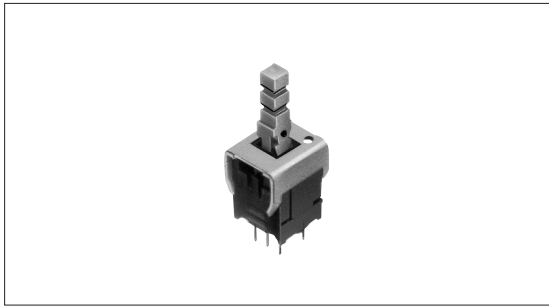


# Push Switch 2.5mm-travel Vertical Type

SPEC Series



Vertical type, widely applicable to home and industrial electronic equipment.



### Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		0.1A 30V DC/50 $\mu$ A 3V DC
Contact resistance (Initial / After operating life)		30m $\Omega$ max./50m $\Omega$ max.
Operating force		2 $\pm$ 1N
Operating life	Without load	10,000cycles
	With load	10,000cycles (0.1A 30V DC)

### Product Line

Changeover timing	Travel (mm)	Total travel (mm)	Mounting method	Poles	Operation	Terminal type	Minimum order unit (pcs.)	Product No.
Non shorting	2.5	3.4	PC board	2	Latching	Straight	2,000	SPEC121100
						Snap-in		SPEC121300

### Packing Specifications

#### Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
400	2,000	400 $\times$ 270 $\times$ 290

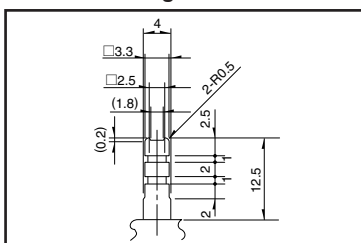
### Dimensions

Unit:mm

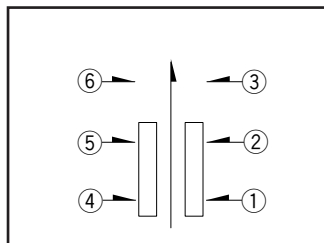
Style	PC board mounting hole dimensions (Viewed from the direction A)	
	<b>Straight terminal</b> 	<b>Snap-in terminal</b> 

### Actuator Configuration at Front Edge

Unit:mm



### Circuit Diagram (Viewed from Direction A)



### Terminal Configuration

Unit:mm

Straight terminal	Snap-in terminal

### Notes

- Products other than those listed in the above chart are also available. Please contact us for details.
- Please place purchase orders per minimum order unit N (integer).

Refer to P.126 for knobs.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products

Horizontal  
Type

Vertical  
Type



Automotive  
Use

## List of Varieties

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

Horizontal Type  
 Vertical Type

Series		SPPH2	SPPH4	SPPH1	SPEC	SPED2	SPED3	SPED4	SPED5	SPEF		
Photo												
Travel (mm)		1	2.2	1.5	2.5	—				1.5		
Total travel (mm)		1.5	3	2.5	3.4	4.5	3.8			2.7		
Number of poles		2				1						
Dimensions (mm)	W	6.5	8.5	10	12	14			13.5	9.4		
	D	6	6.5	10		16.8	18		18.2	9		
	H	6.5	8.5		12.5	26.7	20.7	16.97	20.7	6.9		
Operating temperature range		-10°C to +60°C			-40°C to +85°C							
Automotive use		—		●	●	●	●	●	●	●	●	
Rating (max.) (Resistive load)		0.1A 12V DC	0.1A 30V DC			1A 14.5V DC						
Rating (min.) (Resistive load)		50μA 3V DC					1A 14.5V DC					
Electrical performance	Initial contact resistance	30mΩ max.	100mΩ max.	20mΩ max.	30mΩ max.	100mΩ max.						
	Insulation resistance	100MΩ min. 500V DC				3MΩ min. 500V DC			3MΩ min. 100VDC			
	Voltage proof	500V AC for 1minute				100V AC for 1minute						
Mechanical performance	Terminal strength	5N for 1minute			3N for 1minute		—					
	Actuator strength	Operating direction	30N		50N				90N			
		Pulling direction	—	10N	—	50N	—				30N	
Durability	Operating life without load	10,000cycles	10,000cycles	10,000cycles	10,000cycles	30,000cycles 100mΩ max.						
	Operating life without load Load:as rating	50mΩ max.	100mΩ max.	40mΩ max.	50mΩ max.							
Environmental performance	Cold	-20±2°C for 96h				-40±2°C for 96h						
	Dry heat	85±2°C for 96h										
	Damp heat	40±2°C, 90 to 95%RH for 96h										
Soldering	Manual soldering	350°C max. 3s max.	350±10°C 3 <sup>+</sup> 1s			350±10°C 3±0.5s ※3	—	350±10°C 3±0.5s	—	350±5°C 3s max.		
	Dip soldering	260±5°C 5±1s		260±5°C 10±1s	260°C max. 5s max.	260±5°C 10±1s ※3	—	260±5°C 10±1s	—	260±5°C 10±1s ※4		
	Reflow soldering	—									Please see P.127	
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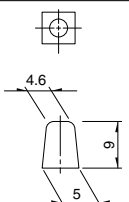
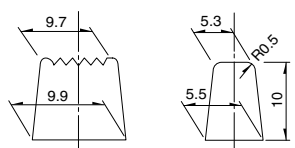
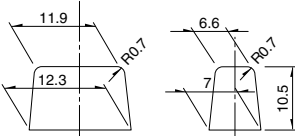
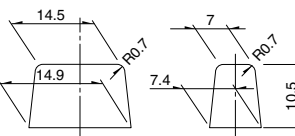
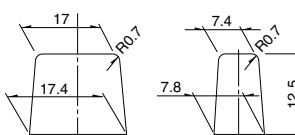
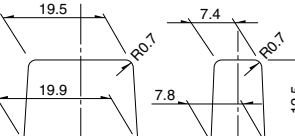
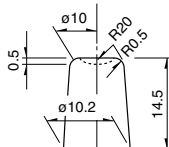
### Notes

- ※3. Applicable to SPED220200(PC board type) only.
- ※4. Applicable to dip soldering.
- marks in "Available for automotive use" indicate that all of the series products can work at the operating temperature range from -40°C to +85°C.

## Attached Parts

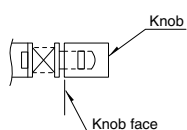
Please specify required knob.

Unit:mm

Knob outline drawing	Variety		Series
	Color	Model	
	Black Red White	UJ206022 UJ206020 UJ206026	SPPJ3 SPUJ
<p>Key pitch 10mm</p> <p>Square knob</p> 		4093-1 4093-2 4093-3	
<p>Key pitch 12.5mm</p> <p>Square knob</p> 		UE201011 UE201012 UE201013	
<p>Key pitch 15mm</p> <p>Square knob</p> 		UE202011 UE202012 UE202013	SPPJ2 SPUP
<p>Key pitch 17.5mm</p> <p>Square knob</p> 		UE203011 UE203012 UE203013	SPUN SPEC
<p>Key pitch 20mm</p> <p>Square knob</p> 		UE204011 UE204012 UE204013	
<p>Round knob</p> 		UE200011 UE200012 UE200013	

### Note

We recommend the use of adhesive to secure the knob when mounting onto switches.



Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products

Horizontal  
Type

Vertical  
Type