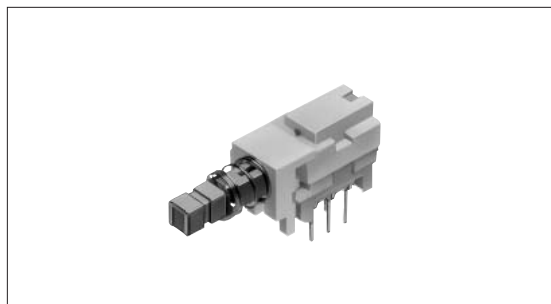


# Push Switch 1.5/2mm-travel Medium-sized Horizontal Type

## SPUP Series



Medium horizontal type suitable for multiple circuits.



### Features

- Two types of travel: 1.5mm and 2mm.
- 6.5mm in height lever from the mounting surface of a PC board.
- Standard knobs are available.

### Applications

- Electronic devices, including plasma display panels and digital still camera printers
- Secondary power source of TVs and plasma display panels

### Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 30V DC/50 $\mu$ A 3V DC
Contact resistance (Initial performance/After lifetime)		20m $\Omega$ max./40m $\Omega$ max.
Operating force	2-poles	1.7 $\pm$ 1N
	4-poles	2.3 $\pm$ 1N
Operating life	Without load	10,000 cycles
	With load	10,000 cycles (0.1A 30V DC)

### Products Line

Changeover timing	Travel (mm)	Total Travel (mm)	Rating	Mounting method	Poles	Operating	Terminal style	Minimum packing unit (pcs.)	Products No.
Non shorting	1.5	2.5	—	PC board	2	Latching	Straight	100	SPUP190700
							Snap-in		SPUP192900
						Momentary	Straight		SPUP192300
							Snap-in		SPUP193200
	2	3			2	Momentary	Straight		SPUP192700
							Straight		SPUP192000
					4	Latching	Straight		SPUP191000
							Snap-in		SPUP193100

### Note

Additional switches not included in the above list are also available. Contact us for details.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

Horizontal  
Type

Vertical  
Type

For other specifications, see P.105  
For knobs, see P.106

# Push Switch

## 1.5/2mm-travel Medium-sized Horizontal Type | SPUP Series

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

### Dimensions

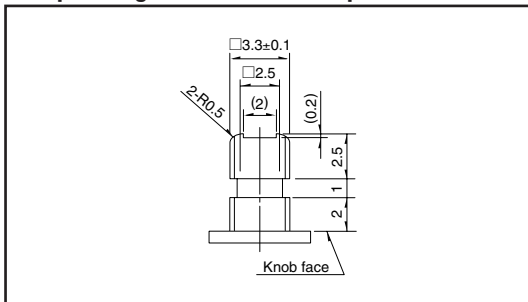
Unit:mm

Style	PC board mounting hole dimensions (Viewed from the Direction A)	
<p><b>2-poles, 4-poles</b></p>	<p><b>Straight terminal</b></p>	<p><b>Snap-in terminal</b></p> <p>Thickness of PC board t=1.6mm</p>

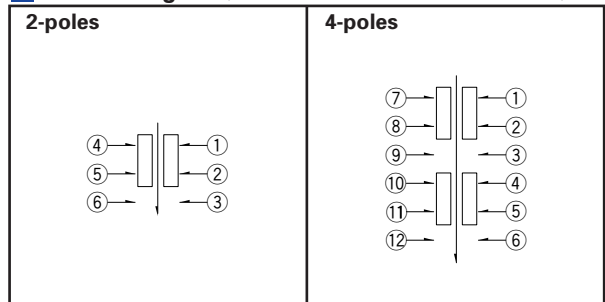
- Horizontal Type**
- Vertical Type

### Operating Section Nose Shape

Unit:mm



### Circuit Diagram (Viewed from the Direction A)



# Products Specifications

Series		SPEE	SPPJ6	SPPJ2	SPPJ3	SPUJ SPUP	SPUN	SPUN (medium current)	SPPH2	SPPH4	SPPH1	SPEA	SPEC	SPED2	SPED3	SPED4	SPED5	
Item																		
Operating temperature range		-10°C to +60°C												-40°C to +85°C				
Rating (max.) (Resistive load)		5V 20mA	0.2A 12V DC	0.2A 30V DC		0.1A 30V DC		1A 25V DC	0.1A 12V DC	0.1A 30V DC				1A 14.5V DC				
Electrical performance	Initial contact resistance	※	20mΩ max.						30mΩ max.	100mΩ max.	20mΩ max.	30mΩ max.		100mΩ max.				
	Insulation resistance	10mΩ min 100V DC	100MΩ min. 500V DC														3MΩ min. 500V DC	
	Voltage proof	100V AC for 1min	500V AC for 1 min.														100V AC for 1 min.	
Mechanical performance	Robustness of terminal	—	5N for 1 min.								3N for 1 min.		—					
	Robustness of actuator	Operating direction	50N		30N		50N		30N		50N							
		Pulling direction	—				50N		—	10N	—	50N		—				
	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	—	350±10°C 3 <sup>+1</sup> <sub>0</sub> s		300±10°C 3 <sup>+1</sup> <sub>0</sub> s	350±10°C 3 <sup>+1</sup> <sub>0</sub> s		350°C max. 3s max.	350±10°C 3 <sup>+1</sup> <sub>0</sub> s				350±10°C 3±0.5s	—	350±10°C 3±0.5s	—	
		Dip soldering	—	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260°C max. 5s max.	260±5°C 10±1s	—	260±5°C 10±1s	—	
Reflow		260°C max 10s max	—															
Durability	Operating life without load	100,000 cycles	10,000 cycles 40mΩ max.				30,000 cycles 40mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	30,000 cycles 100Ω max.					
	Operating life with load Load : As rating	100,000 cycles	10,000 cycles 40mΩ max.				5,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.		30,000 cycles 100mΩ max.					
Environmental performance	Cold	-40±2°C for 96h	-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																

**Note**  
1V or less, at the present rating of 1mA, 5V DC for output voltage.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

Horizontal  
Type

Vertical  
Type

## Attached Parts

Specify the Desired Knob.

Unit:mm

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

### Note

When mounting the switch, it is recommended to secure the knob with an adhesive agent.

