

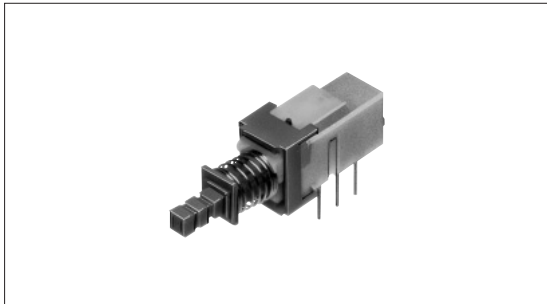
# Push Switch 2.5mm-travel Large-sized Horizontal Type

## SPUN Series



Large horizontal type suitable for multiple circuits.

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



### Typical Specifications

Items	Specifications		
	Standard	Medium-current	
Rating (max.) / (min.) (Resistive load)	0.1A 30V DC/50 $\mu$ A 3V DC	1A 25V DC	
Contact resistance (Initial /After operating life)	20m $\Omega$ max./40m $\Omega$ max.		
Operating forces	2-poles	2 $\pm$ 1N	3 $\pm$ 1.5N
	4-poles	2.5 $\pm$ 1N	4 $\pm$ 2N
Operating life	Without load	30,000cycles	10,000cycles
	With load	10,000cycles (0.1A 30V DC)	5,000cycles (1A 25V DC)

### Product Line

Changeover timing	Travel (mm)	Total travel (mm)	Rating	Mounting method	Poles	Operation	Terminal type	Minimum order unit (pcs.)	Product No.
Non shorting	2.5	3.5	Standard	PC board	2	Latching	Straight	1,250	SPUN191400
							Snap-in		SPUN191600
						Momentary	Straight		SPUN190900
							Snap-in		SPUN191000
			Medium-current		4	Latching	Straight	700	SPUN194700
							Snap-in		SPUN194900
					2	Latching	Straight	1,250	SPUN192600
							Snap-in		SPUN192800
4	Latching	Snap-in	700	SPUN19C400					

### Packing Specifications

#### Bulk

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case/export packing	
SPUN190900 SPUN191000 SPUN191400 SPUN191600 SPUN192600 SPUN192800	250	1,250	400 $\times$ 270 $\times$ 290
SPUN194700 SPUN194900 SPUN19C400	140	700	

### Notes

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

Refer to P.132 for knobs.

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

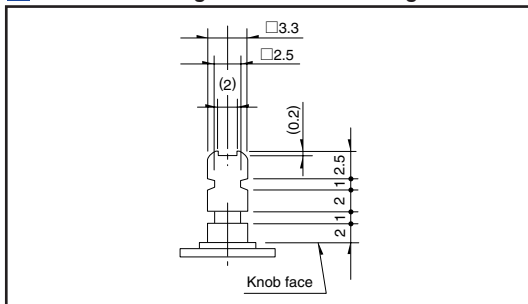
- Horizontal  
Type**
- Vertical  
Type

**Dimensions**

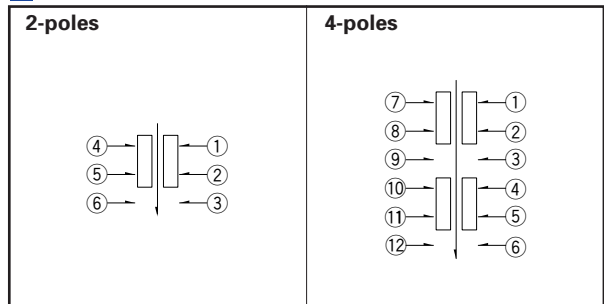
Unit:mm

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

**Actuator Configuration at Front Edge** Unit:mm



**Circuit Diagram (Viewed from Direction A)**



## List of Varieties

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

Series	SPEE	SPPJ6	SPPJ3	SPPJ2	SPUJ ※1	SPUP ※1	SPUN	SPUN medium current※1	SPEG	SPEJ	
<b>Photo</b>											
<b>Travel (mm)</b>	0.3 0.71	1.5	2.5		2	1.5 2	2.5		—	1.7	
<b>Total travel (mm)</b>	0.9	2.5	3.5		3	2.5 3	3.5		1.2	1.7	
<b>Number of poles</b>	1	2	1 2	2	2 4				1	2	
<b>Dimensions (mm)</b>	W	4	9		6.6 7.2		7.5		10	7.15	7
	D	5	12		15.2 22.7		24 36		8.35	7	
	H	1.22	4.5	8.3	9.6	8.8	10.3	13	3.5	8	
<b>Operating temperature range</b>	-10°C to +60°C		-40°C to +85°C		-10°C to +60°C				-40°C to +85°C		
<b>Rating (max.) (Resistive load)</b>	20mA 5V DC	0.2A 12V DC	0.2A 30V DC		0.1A 30V DC			1A 25V DC	50mA 16V DC	0.2A 14V DC	
<b>Rating (min.) (Resistive load)</b>	100μA 3V DC	50μA 3V DC							50μA 3V DC	—	
<b>Electrical performance</b>	<b>Initial contact resistance</b>	※2	20mΩ max.						200mΩ max.	150mΩ max.	
	<b>Insulation resistance</b>	10MΩ min. 100V DC	100MΩ min. 500V DC						3MΩ min. 100V DC	100MΩ min. 500V DC	
	<b>Voltage proof</b>	100V AC for 1minute	500V AC for 1minute						100V AC for 1minute	500V AC for 1minute	
<b>Mechanical performance</b>	<b>Terminal strength</b>	5N for 1minute								0.5N for 1minute	—
	<b>Actuator strength</b>	Operating direction	50N		30N		50N			50N	49N
		Pulling direction	—						—		—
<b>Durability</b>	<b>Operating life without load</b>	100,000 cycles	10,000cycles 40mΩ max.				30,000cycles 40mΩ max.	10,000cycles 40mΩ max.	30,000cycles 500mΩ max.	10,000 cycles	
	<b>Operating life without load Load:as rating</b>	100,000 cycles	10,000cycles 40mΩ max.				5,000cycles 40mΩ max.		500mΩ max.	10,000cycles 14V DC, 0.2A	
<b>Environmental performance</b>	<b>Cold</b>	-40±2°C for 96h	-20±2°C for 96h						-40±2°C for 500h		
	<b>Dry heat</b>	85±2°C for 96h								85±2°C for 500h	
	<b>Damp heat</b>	40±2°C, 90 to 95%RH for 96h								60±2°C, 90 to 95% RH for 500h	
<b>Soldering</b>	<b>Manual soldering</b>	350±10°C 4 <sup>+1</sup> <sub>0</sub> s	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±5°C 3s max.	350±10°C 4s max.	
	<b>Dip soldering</b>	—	260±5°C 5±1s		260±5°C 10±1s		260±5°C 10±1s		—	—	
	<b>Reflow soldering</b>	Please see P.133									
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- Soldering Conditions .....133
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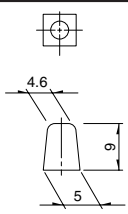
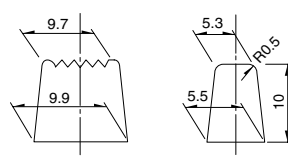
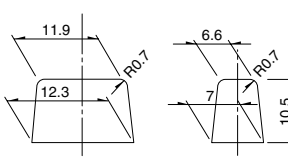
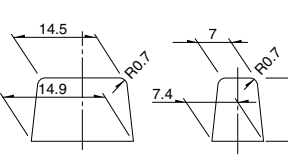
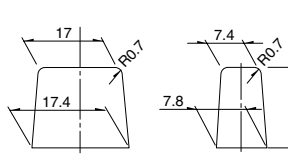
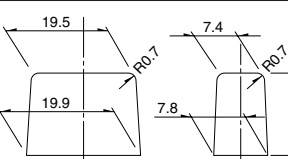
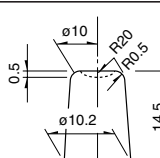
### Notes

1. ※1. The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
2. ※2. 1V or less, at the present rating of 1mA 5V DC for output voltage.

## Attached Parts

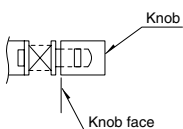
Please specify required knob.

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 SPUN SPEC
<p>Key pitch 17.5mm</p> <p>Square knob</p> 		UE203011 UE203012 UE203013	
<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

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Package Type

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Horizontal  
Type

Vertical  
Type