

# Push Switch Hollow Slider Momentary Type

## SPEG Series



Hollow type supporting designs such as LED illumination.

Detector

Push

Slide

Rotary

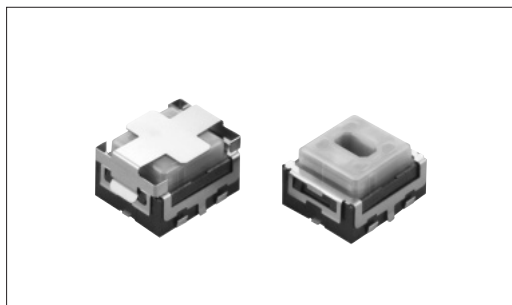
Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products



### Typical Specifications

Items	Specifications
Rating (max.) / (min.) (Resistive load)	50mA 16V DC/50μA 3V DC
Contact resistance (Initial /After operating life)	200mΩ max./500mΩ max.
Operating forces	2.16N
Operating life	30,000cycles

### Product Line

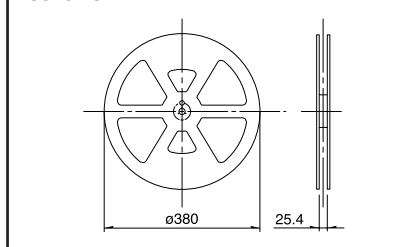
Total travel (mm)	Poles	Ground terminal	Minimum order unit (pcs.)	Product No.
1.2	1	Without	4,800	SPEG110100
		With		SPEG120100

### 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		
1,200	2,400	4,800	24	428 × 413 × 172

#### Note

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

Horizontal  
Type

Vertical  
Type

**Dimensions**

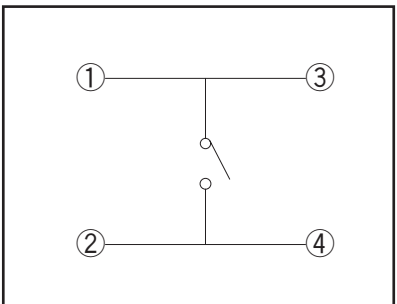
Unit:mm

Style	PC board mounting hole dimensions
	<p><b>In case of using ground terminal</b></p>
	<p><b>In case of not using ground terminal</b></p>

**Note**

Above dimensions indicate "with ground terminal" version.

**Circuit Diagram**



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

- Horizontal Type**
- Vertical Type

## List of Varieties

Series		SPEE	SPPJ6	SPPJ3	SPPJ2	SPUJ ※1	SPUP ※1	SPUN	SPUN medium current※1	SPEG	SPEJ	
Detector	Photo											
Push	Travel (mm)	0.3 0.71	1.5	2.5		2	1.5 2	2.5		—	1.7	
Slide	Total travel (mm)	0.9	2.5	3.5		3	2.5 3	3.5		1.2	1.7	
Rotary	Number of poles	1	2	1 2	2	2 4				1	2	
Encoders	Dimensions (mm)	W	4	9	6.6	7.2	7.5		10	7.15	7	
Power		D	5	12		15.2 22.7		24 36	8.35	7		
Dual-in-line Package Type		H	1.22	4.5	8.3	9.6	8.8	10.3	13	3.5	8	
TACT Switch™	Operating temperature range	-10°C to +60°C		-40°C to +85°C		-10°C to +60°C				-40°C to +85°C		
Custom-Products	Rating (max.) (Resistive load)	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	
	Rating (min.) (Resistive load)	100μA 3V DC	50μA 3V DC							50μA 3V DC	—	
Horizontal Type	Electrical performance	Initial contact resistance	※2	20mΩ max.					200mΩ max.	150mΩ max.		
		Insulation resistance	10MΩ min. 100V DC	100MΩ min. 500V DC					3MΩ min. 100V DC	100MΩ min. 500V DC		
		Voltage proof	100V AC for 1minute	500V AC for 1minute					100V AC for 1minute	500V AC for 1minute		
Vertical Type	Mechanical performance	Terminal strength	5N for 1minute								0.5N for 1minute	—
		Actuator strength	Operating direction	50N		30N		50N			50N	49N
	Pulling direction		—						—	—		
Durability	Durability	Operating life without load	100,000 cycles	10,000cycles 40mΩ max.			30,000cycles 40mΩ max.	10,000cycles 40mΩ max.	35,000cycles 500mΩ max.	10,000 cycles		
		Operating life without load Load:as rating	100,000 cycles	10,000cycles 40mΩ max.			5,000cycles 40mΩ max.			10,000cycles 14V DC, 0.2A		
Environmental performance	Environmental performance	Cold	-40±2°C for 96h	-20±2°C for 96h					-40±2°C for 500h			
		Dry heat	85±2°C for 96h								85±2°C for 500h	
		Damp heat	40±2°C, 90 to 95%RH for 96h								60±2°C, 90 to 95% RH for 500h	
Soldering	Soldering	Manual soldering	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.		
		Dip soldering	—	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s		—	—		
		Reflow soldering	Please see P.133	—							Please see P.133	
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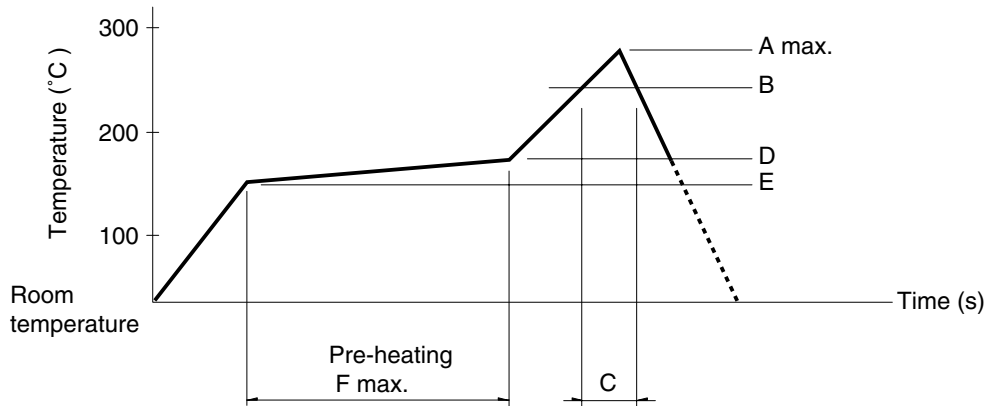
### Notes

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.

## 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  $\phi$  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)
SPEE	260	230	40	180	150	120
SPEF, SPEG, SPEJ						

### 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.

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