



Items	Specifications
Rating (Resistive load)	1A 14.5V DC
Contact resistance (Initial / After operating life)	100mΩ max. / 100mΩ max.
Operating force	4.17±0.74N
Operating life (With load)	30,000 cycles (1A 14.5V DC)
Circuit configuration	2-pole, 1-position 1-pole, 2-position

Changeover timing	Total travel (mm)	Mounting method	Poles	Positions	Operation	Terminal type	Minimum order unit (pcs.)		Product No.	Drawing No.
							Japan	Export		
Non shorting	4.5	PC board	2	1	Alternate	For PC board	280	1,120	SPED220200	1
		Connector	1	2		—	400	2,000	SPED210203	2

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
SPED220200	280	1,120	555×375×223

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
SPED210203	400	2,000	400×270×290

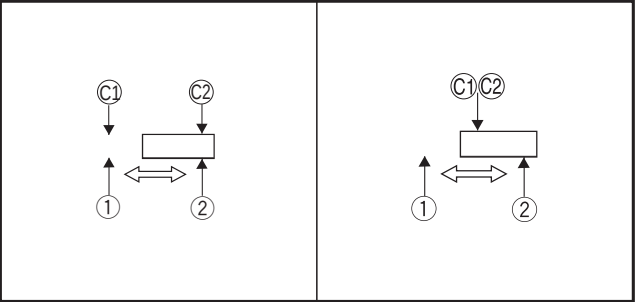
Refer to P.130 for soldering conditions.

■ Dimensions

Unit:mm

No.	Style
2	

■ Circuit Diagram



Note

Factory setting for contact points can be either 1 or 2.

Detector Slide Push Rotary Power Dual-In-line Package Type Horizontal Type Vertical Type

Push Switches

List of Varieties

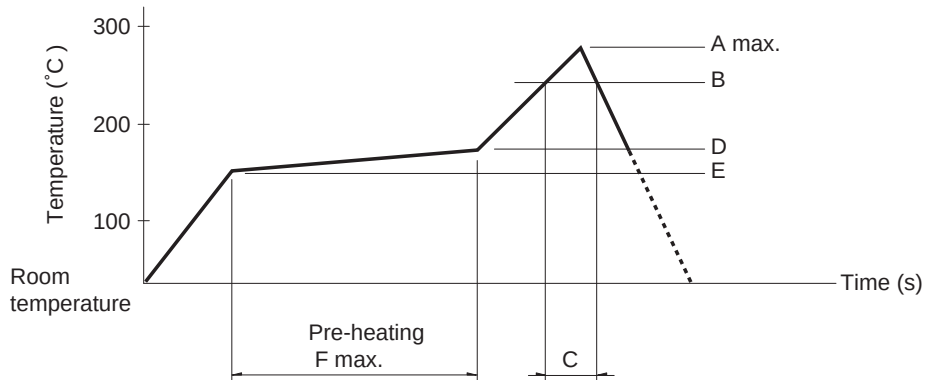
Series			Vertical					
			SPEF		SPED2	SPED3	SPED4	SPED5
Photo								
Dimensions (mm)	W	9.4		14			13.5	
	D	9		16.8	18		18.2	
	H	6.9		18.3	13.2	13.17	14.3	
Travel (mm)		1.5		—	—	—	—	
Total travel (mm)		2.7		4.5	3.8			
Number of poles		1		1 2	1			
Operating temperature range		−40℃ to +85℃			−40℃ to +95℃			
Automotive use								
Life cycle								
Rating (max.) (Resistive load)		1A 14.5V DC			2A 14.5V DC			
Rating (min.) (Resistive load)		50μA 3V DC		—	—	—	—	
Durability	Operating life without load	—	—	—	—	—	—	
	Operating life with load (at max. rated load)	30,000 cycles 100mΩ max.						
Electrical performance	Initial contact resistance	100mΩ max.						
	Insulation resistance	3MΩ min. 100V DC		3MΩ min. 500V DC				
	Voltage proof	100V AC for 1minute						
Mechanical performance	Terminal strength	—	—	—	—	—	Wire strength 30N	
	Actuator strength	Operating direction	90N			98N	90N	98N
		Pulling direction	30N		—	—	—	—
Environmental performance	Cold	−40℃ 96h						
	Dry heat	85℃ 96h		85℃ 96h (Connector type) 105℃ 192h (Dip type)	105℃ 192h			
	Damp heat	40℃, 90 to 95%RH 96h						
Page		124		126	128			

Push Switches Soldering Conditions	130
Push Switches Cautions	131

Note
 Indicates applicability to all products in the series.

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple ϕ 0.1 to 0.2 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)
SPEJ	260	230	40	180	150	120
SPEF						
SPEH						

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.

Reference for Hand Soldering

Series	Soldering temperature	Soldering time
SPPJ3, SPPJ2, SPUN, SPUJ, SPPH4, SPPH1	350±10°C	3+1/0s
SPED2, SPED4	350±10°C	3±0.5s
SPEJ	350±10°C	4s max.
SPEF	350±5°C	3s max.
SPEH	350°C max.	3s max.

Reference for Dip Soldering

(For PC board terminal types)

Series	Items		Dip soldering	
	Preheating temperature	Preheating time	Soldering temperature	Duration of immersion
SPPJ3	100°C max.	60s max.	260±5°C	5±1s
SPUN	100°C max.	60s max.	260±5°C	10±1s
SPUJ, SPPH4	—		260±5°C	5±1s
SPPJ2, SPPH1, SPED2, SPED4, SPEF	—		260±5°C	10±1s

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Alps Alpine:](#)

[SPED210200](#)