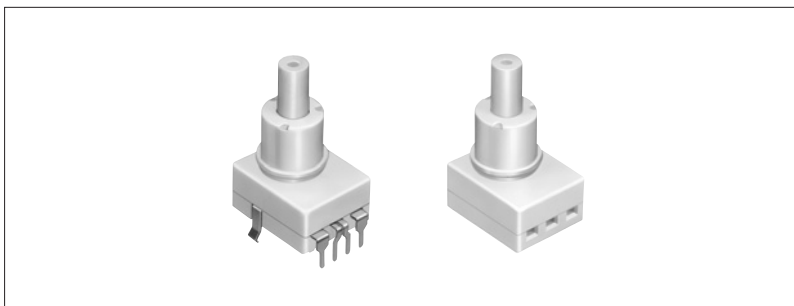


4.5mm-travel Push Switch (Push-Push Type)

SPED2 Series

Highly functional in-vehicle switch with smooth linear motion.

- Power
- Push**
- Slide
- Rotary
- Encoders
- Jog Shuttle
- Telephone-hook
- Detector
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT



Car Use

Features

- Smooth linear operations achieved by adopting a ratchet cam structure.
- Near-silent operation.
- Easier and faster operation in inspection of the set : 4 pushes in one cycle. (Other existing products need 6-8 pushes.)
- The PC board mounted type is compatible with lead-free auto-dipping soldering technology.

Applications

- In-vehicle map lamp

Typical Specifications

Items	Specifications
Ratings	1A 14.5V DC
Contact resistance (Initial performance)	100mΩ max.
Operating force	4.17±0.74N
Operating life	30,000 cycle
Circuit arrangement	2-poles, 1-position
Travel	4.5mm

Products Line

Changeover timing	Travel (mm)	Total travel (mm)	Rating	Mounting method	Poles	Operating	Terminal style	Minimum packing unit (pcs.)	Products No.	Drawing No.
Non shorting	—	4.5	—	PC board	2	Alternate	For PC board	100	SPED220200	1
				Connector			—		SPED210200	2



Dimensions

Unit : mm

No.	Style	PC board mounting dimensions (Viewed from the mounting face side)
1		
2		

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

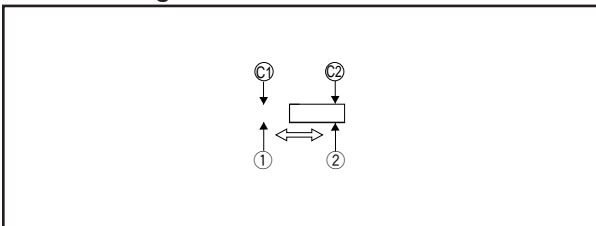
Multi Control Devices

TACT

Horizontal Type

Vertical Type

Circuit Diagram



Products Specifications

Item	Series																						
	SPPJ6	SPPJ2	SPPJ3	SPUJ SPUP	SPUN	SPUN (medium current)	SPPH2	SPPH4	SPPH1	SPEA	SPEC	SPED1	SPED2	SPED3									
Power	Operating temperature range											-10°C to +60°C		-40°C to +85°C									
Push	Rating (max.) (Resistive load)											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			
Slide	Electrical performance	Initial contact resistance											20mΩ max.			30mΩ max.	100mΩ max.	20mΩ max.	30mΩ max.	100mΩ max.			
Rotary		Insulation resistance											100MΩ min. 500V DC						3MΩ min. 100V DC				
Encoders		Voltage proof											500V AC for 1 min.						100V AC for 1 min.				
Jog Shuttle	Mechanical performance	Robustness of terminal											5N for 1 min.			3N for 1 min.			—				
Telephone -hook		Robustness of actuator	Operating direction		50N	30N	50N			30N			50N										
Detector			Pulling direction		—			50N			—	10N	—	50N	—								
Vibration Sensors		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										
Dual-in-line Package Type		Solderability											230±5°C、3±0.5s						—	—	230±5°C 3±0.5s	—	
Multi Control Devices		Resistance to soldering heat	Manual soldering		350±10°C 3 ⁺ ₀ ⁺ s		300±10°C 3 ⁺ ₀ ⁺ s	350±10°C 3 ⁺ ₀ ⁺ s		350°C max. 3s max.	350±10°C 3 ⁺ ₀ ⁺ s			—	—	350±10°C 3±0.5s	—						
TACT	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°C max. 5s max.	—	—	260±5°C 10±1s	—							
Horizontal Type	Durability	Operating life without load											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 1Ω max.		
		Operating life with load Load : As rating											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.	10,000 cycles 1Ω max.			
Vertical Type		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					