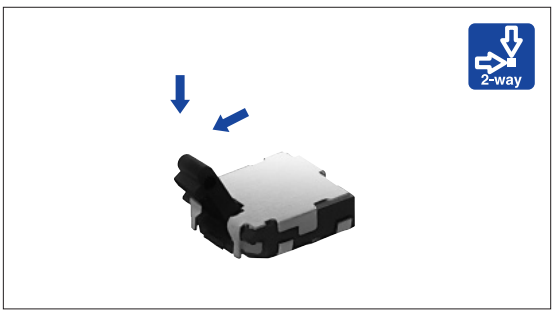
Low-profile Lever Type

SPVR Series

RoHS compliant

Low profile, height of 1.2mm, long travel type.



Typical Specification

Items		Specifications
Rating (max.) / (min.) (Resistive load)		1mA 5V DC/100μA 3V DC
Contact resistance (Initial / After operating life)		3Ω max./5Ω max.
Operating force		0.35N max.
Operating life	Without load	50,000cycles
	With load	50,000cycles (1mA 5V DC)

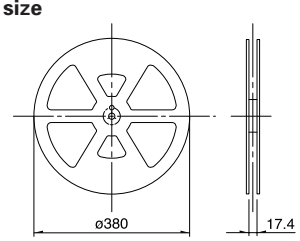
Product Line

Poles	Positions	Total travel (mm)	Terminal type	Location lug	Minimum order unit (pcs)	Product No.
1	1	1.93	For PC board (Reflow)	With	10,000	SPVR110100
				Without		SPVR120100

Packing Specifications

Taping Unit:mm

Reel size

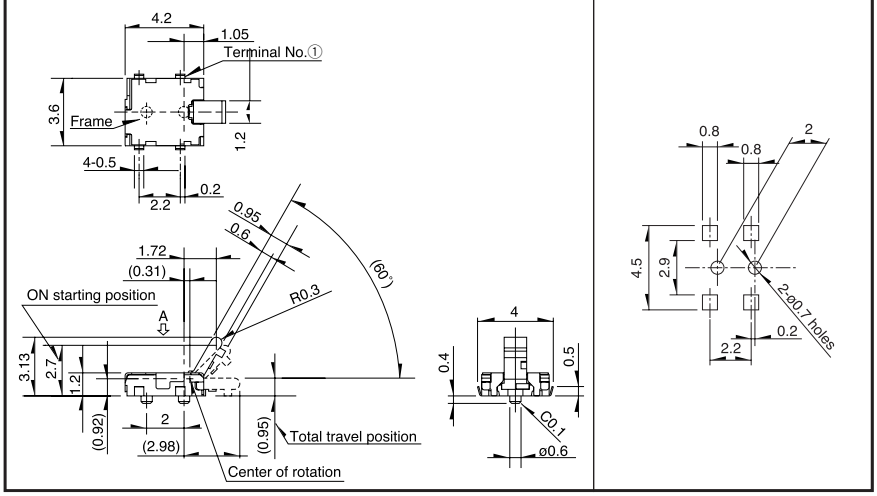


Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case /Japan	1 case /export packing		
2,500	5,000	10,000	16	417×409×139

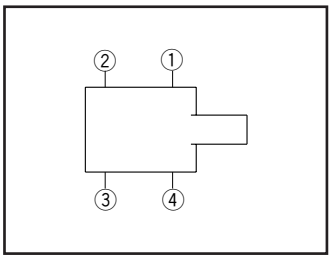
Dimensions

Unit:mm

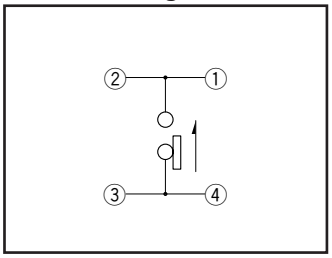
Style	PC board mounting hole and land dimensions (Viewed from direction A)



Terminal Layout (Viewed from Direction A)



Circuit Diagram



Notes

1. Above dimensions indicate "with location lug" version.
2. Please place purchase orders per minimum order unit N (integer).

List of Varieties（General-purpose Type）

Series			General-purpose Type						
			SPPB	SPVE	SPPW8	SPVM	SPVR	SPVF	SSCU
Photo									
Operation type			1-way 2-way	1-way	1-way	2-way	2-way	2-way	2-way
Operating temperature range			-40℃ to +85℃	−10℃ to +60℃		−40℃ to +85℃		-10℃ to +60℃	-40℃ to +85℃
Automotive use			●	—	—	●	●	—	●
Rating (max.) (Resistive load)			0.1A 30V DC			1mA 5V DC			0.1A 12V DC
Rating (min.) (Resistive load)			50μA 3V DC		100μA 3V DC	50μA 3V DC	100μA 3V DC	50μA 3V DC	
Electrical performance	Initial contact resistance		1Ω max.	500mΩ max.	1Ω max.	2Ω max.	3Ω max.	500mΩ max.	70mΩ max.
	Insulation resistance		100MΩ min. 100V DC						100MΩ min. 250V DC
	Voltage proof		100V AC for 1 minute						250V AC for 1 minute
Mechanical performance	Terminal strength		3N for 1 minute	0.5N for 1 minute	3N for 1 minute	1N for 1 minute	0.5N for 1 minute	3N for 30s	3N for 1 minute
	Actuator strength		10N	5N	10N	5N	2N	1N	5N
Durability	Operating life without Load		50,000cycles 2Ω max.	50,000cycles 1Ω max.	100,000cycles 2Ω max.	50,000cycles 5Ω max.		100,000cycles 1Ω max.	10,000cycles 100mΩ max.
	Operating life with Load		(0.1A 30V DC) 50,000cycles 2Ω max.	(0.1A 30V DC) 50,000cycles 1Ω max.	(0.1A 30V DC) 100,000cycles 2Ω max.	(1mA 5V DC) 50,000cycles 5Ω max.		(1mA 5V DC) 100,000cycles 1Ω max.	(0.1A 12V DC) 10,000cycles 100mΩ max.
Environmental performance	Cold		-40±2℃ for 500h	−20±2℃ for 96h		−40±2℃ for 500h		−40±2℃ for 96h	−40±2℃ for 500h
	Dry heat		85±2℃ for 500h	85±2℃ for 96h		85±2℃ for 500h		85±2℃ for 96h	85±2℃ for 500h
	Damp heat		60±2℃, 90 to 95%RH for 500h	40±2℃, 90 to 95%RH for 96h		60±2℃, 90 to 95%RH for 500h		40±2℃, 90 to 95%RH for 96h	60±2℃, 90 to 95%RH for 500h
Dimensions (mm)		W	6.3	3.4	5	2.8	3.6	9	11
		D	3		4	3.5	4.2	3.5	5.8
		H	4.9	2.3		1.5	1.2	4.5	7
Soldering	Manual soldering		300±5℃, 5s max.	350±5℃, 3s max.				300±10℃, 3^{+1}_{0}s	350±5℃, 3s max.
	Dip soldering		255±5℃, 5±1s	—	255±5℃, 5±1s	—		245±5℃, 5±1s	—
	Reflow soldering		Please see P.102					—	
Number of poles			1					1.2	1
Operation force			0.35N max.	0.3N max.		0.4N max.	0.35N max.	0.3N max.	0.5N max.
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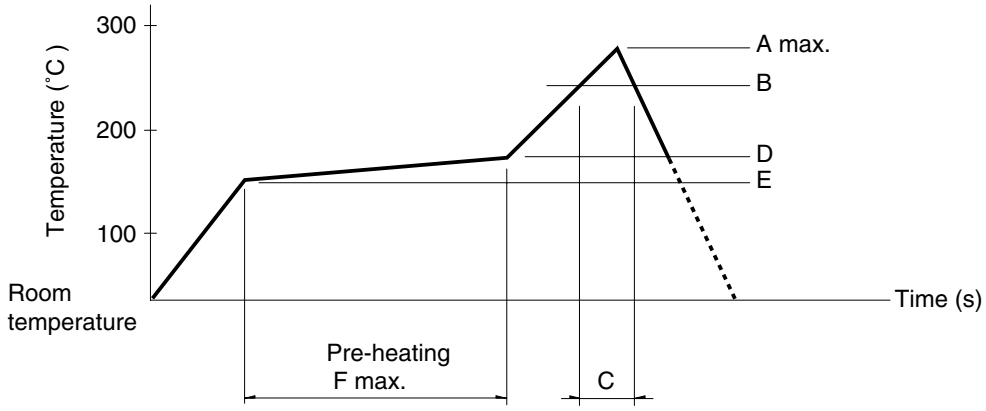
Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 ϕ 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 (℃) 3s max.	B (℃)	C (s)	D (℃)	E (℃)	F (s)
SPPB	250	230	40	180	150	120
SPPW8		200	20			
SPVE	260	230	40			
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SPVT						
SSCM						
SPPY5	240		20	150	Room temperature	180

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.