

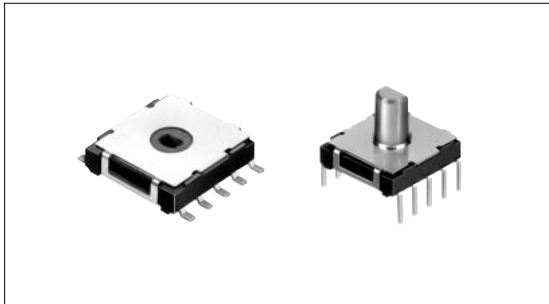
Rotary Switch 9-position Low-profile Vertical Type

SRBQ Series



Low-profile rotary switch with unique detent mechanism contributes to a lighter operating feel.

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



Typical Specifications

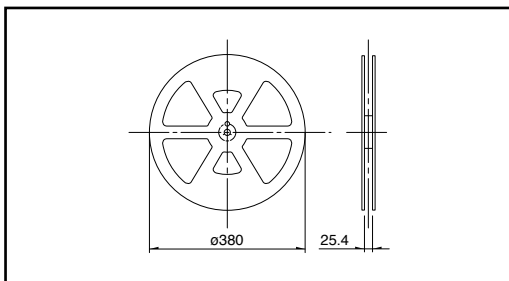
Items		Specifications
Rating(max.)(min.) (Resistive load)		0.1A 16V DC/50 μ A 3V DC
Contact resistance (Initial/After operating life)		50m max./100m max.
Rotational torque		6 \pm 3mN \cdot m/13 \pm 5mN \cdot m
Operating life	Without load	10,000cycles
	With load	10,000cycles(0.1A 16V DC)

Product Line

Poles	Positions	Changeover angle	Changeover timing	Rotational torque	Actuator configuration	Soldering	Actuator length(mm)	Minimum order unit(pcs.)	Product No.	Drawing No.
1	9	40 \pm 3 $^{\circ}$	Non shorting	6 \pm 3mN \cdot m	Flat	Insertion	5.1	2,000	SRBQ090200	1
				13 \pm 5mN \cdot m					SRBQ490100	2
				6 \pm 3mN \cdot m	Non shaft	Reflow	4,800	SRBQ290301	3	

Taping Specification (Taping Packeging)

Reel Size Unit:mm



Series	Number of packages(pcs.)			Tape width (mm)
	1 reel	1 case /Japan	1 case /export packing	
SRBQ290301	1,200	2,400	4,800	24

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(integer).

Dimensions

Insertion Type

Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from the direction A)
1	<p>Standard torque</p>	<p style="text-align: right;">10-φ1 holes</p>
2	<p>Heavy torque</p>	

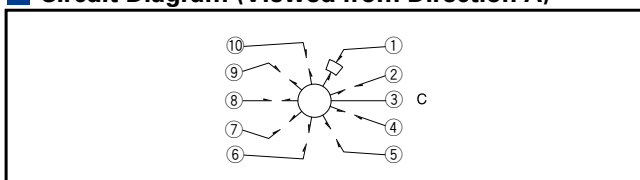
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Reflow Type









Unit:mm

No.	Style	PC board mounting hole and land dimensions (Viewed from the direction A)
3		<p style="text-align: right;">4-φ0.9 holes</p> <p style="text-align: right;">Pattern section</p>

Circuit Diagram (Viewed from Direction A)



List of Varieties

Series		SRBD	SRBQ		SRRM	SRBV	SRBM		SRRN				
			Insertion	Reflow type			Rotary	Pulse					
Photo													
Outline specifications	Step angle	36 °	40 ± 3 °		30 ± 3 °			18 ± 3 °	30 ± 3 °				
	Number of poles	1		1 2 3 4	1	1 2	2 3 4						
Dimensions (mm)		W	11.4		16.2		12.5		—				
		D	12.4		18.5		10						
		H	3.5		7.5		11.5						
Operating temperature range		-25 to +85		-10 to +60		-40 to +85		-10 to +60					
Rating(max)/(min) (Resistive load)		1mA 5V DC 50μA 3V DC		0.1A 16V DC 50μA 3V DC		0.25A 30V DC 50μA 3V DC		0.3A 16V DC 50μA 3V DC		0.1A 16V DC 50μA 3V DC		0.15A 12V DC 50μA 3V DC	
Electrical performance	Initial contact resistance	100M min. 100V DC			100M min. 500V DC		100M min. 100V DC			100M min. 500V DC			
	Insulation resistance	100V AC for 1minute			500V AC for 1minute		100V AC for 1minute			500V AC for 1minute			
	Voltage proof	3N for 1minute		5N for 1minute		10N for 1minute		5N for 1minute					
Mechanical performance	Actuator strength	Rotational direction	—		1N·m		0.6N·m		0.5N·m		1N·m		
		Push direction	50N		20N		100N						
	Wobble of actuator	Load at the tip of shaft SRRM : 5N SRBV, SRBQ : 1N		The below table shows for SRBQ (Unit : mm)			The below table shows for SRBV (Unit : mm)			Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	
		(Unit : mm)		Distance from mounting surface to the tip of shaft		Shaft wobble (max. value)		(Unit : mm)		Measuring position from mounting surface		Shaft wobble (max. value)	Applicable mounting dimension
		Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	below 5	0.5 max.	Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	10mm	0.17 mm	15 mm	
		10	0.17	15	above 5 and below 10	0.9 max.	10	0.2	15	15mm	0.25 mm	20 mm	
		15	0.25	20	above 10 and below 15	1.2 max.	15	0.3	20	Load at the tip of shaft : 5N			
Durability	Operating life without load	10,000cycles 250m max.		10,000cycles 100m max.		10,000cycles 40m max.		10,000cycles 100m max.		30,000cycles 100m max.		10,000cycles 70m max.	
	Operating life with load Load : (at rated load)	10,000cycles 250m max.		10,000cycles 100m max.		10,000cycles 60m max.		10,000cycles 150m max.		10,000cycles 100m max.			
Environmental performance	Cold	-40 ± 2 for 500h		-20 ± 2 for 96h									
	Dry heat	85 ± 2 for 500h		85 ± 2 for 96h									
	Damp heat	60 ± 2 , 90 to 95%RH for 500h		40 ± 2 , 90 to 95%RH for 96h									
Soldering	Manual soldering	—		350 ± 10 3 ⁺ 1s		350 ± 5 3s max.		350 ± 10 , 3 ⁺ 1s					
	Dip soldering	—		260 ± 5 5 ± 1s		—		260 ± 5 10 ± 1s		260 ± 3 5s max.		260 ± 5 10 ± 1s	
	Reflow soldering	Please see P.172											
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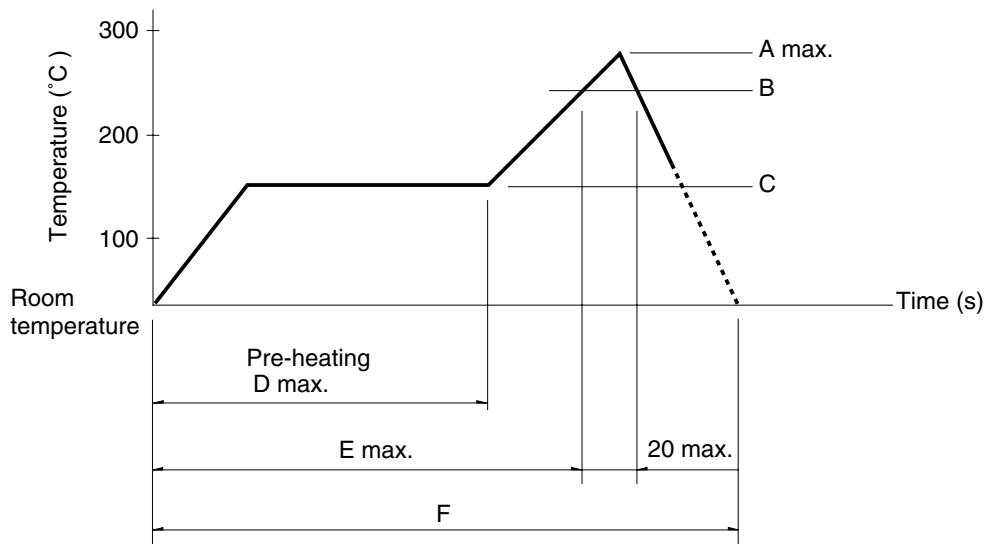
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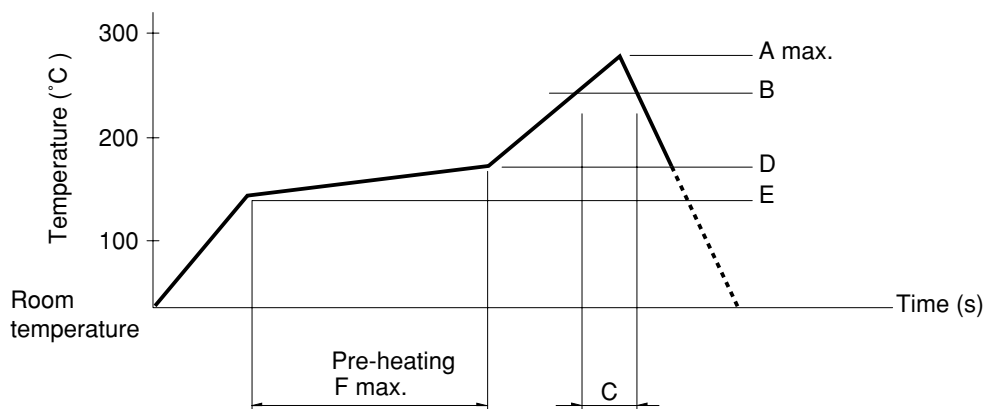
Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 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()	D(s)	E(s)	F(s)
SRBQ	240	230	150	120		



Series(Reflow type)	A() 3s max.	B()	C(s)	D()	E()	F(s)
SRBD	260	230	40	180	150	120

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.