

Rotary Switch

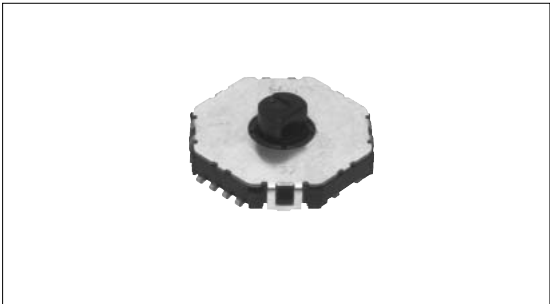
Heavy-torque Feel, Low-profile Type

SRBD Series



Mode switching with maximum 10-positions.

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



Typical Specifications

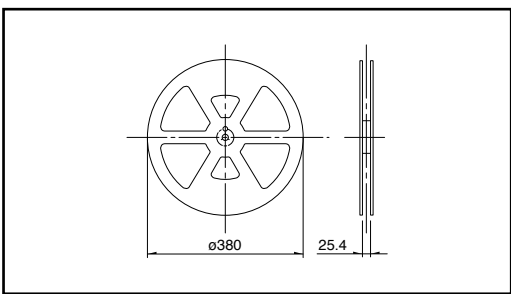
Items	Specifications
Rating (max.) / (min.) (Resistive load)	1mA 5V DC/50μA 3V DC
Contact resistance	200mΩ max.
Rotational torque	13±5mN·m
Operating life with load	10,000cycles (DC5V 1mA)
Insulation resistance	50mΩ max./100mΩ max.
Voltage proof	100VAC 1minute
Angle of throw	36 °

Product Line

Poles	Positions	Changeover angle	Detent	Changeover timing	Soldering	Actuator length (mm)	Minimum order unit (pcs.)	Product No.	Drawing No.
1	10	36 °	7	Non shorting	For PC board (Reflow)	1.0	5,600	SRBD170101	1
			8			1.7	4,800	SRBD170201	2
			10			1.0	5,600	SRBD180100	1
			10			1.7	4,800	SRBD110200	2

Taping Specification (Taping Packaging)

Reel Size Unit:mm



Series		Number of packages (pcs.)			Tape width (mm)
		1 reel	1 case /Japan	1 case /export packing	
Length of operation section	1.0mm	1,400	2,800	5,600	24
	1.7mm	1,200	2,400	4,800	

Note

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

Dimensions

Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from the direction A)
1		
2		

Detector

Push

Slide

Rotary

Encoders

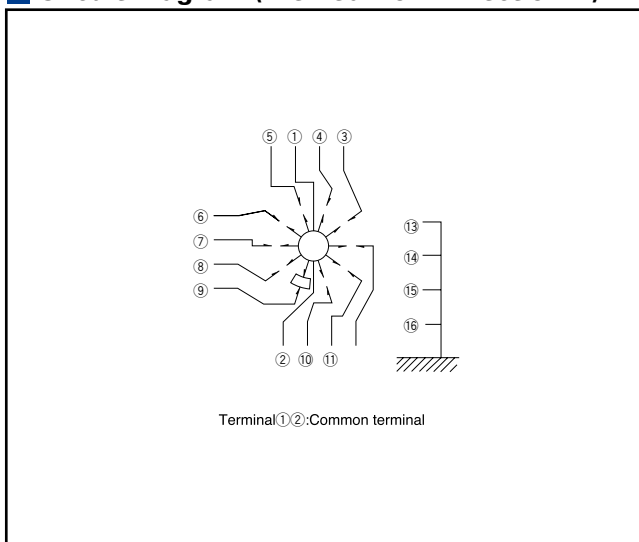
Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

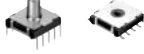
Circuit Diagram (Viewed from Direction A)



Correspondence Table of Terminal No. and Detent

Position No.	Terminal No.	Detent		
		7	8	10
1	③	○	○	○
2	④	○	○	○
3	⑤	○	○	○
4	⑥	○	○	○
5	⑦	○	○	○
6	⑧	○	○	○
7	⑨	○	○	○
8	⑩	—	○	○
9	⑪	—	—	○
10	⑫	—	—	○

List of Varieties

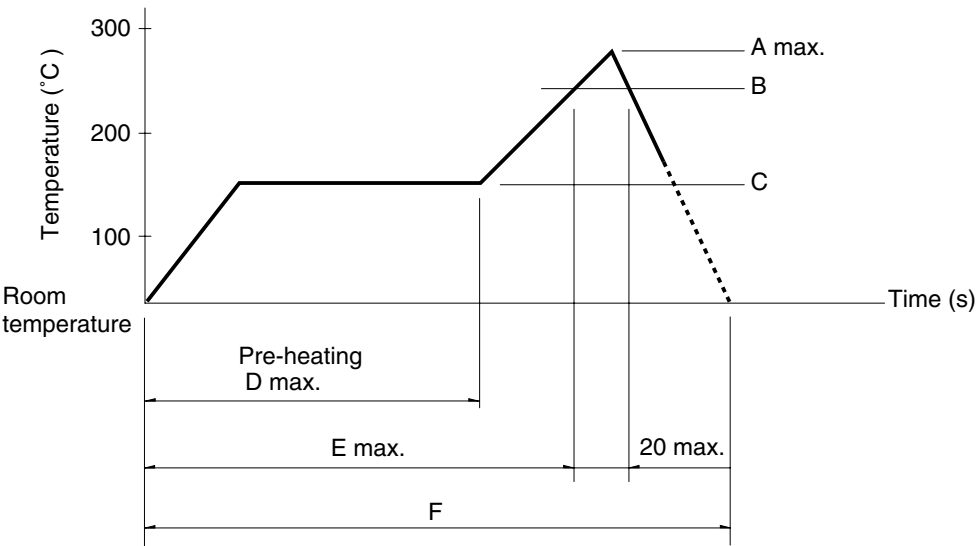
Series			SRBD	SRBQ		SRRM	SRBV	SRBM		SRRN				
				Insertion	Reflow type			Rotary	Pulse					
Photo														
Outline specifications	Step angle		36 °	40±3 °		30±3 °			18±3 °	30±3 °				
	Number of poles		1			1 2 3 4	1	1 2	2 3 4					
Dimensions (mm)		W	10	11.4		————	16.2	12.5		————				
		D		12.4			10							
		H	1.7		3.5		7.5		11.5					
Operating temperature range			-25°C to +85°C		-10°C to +60°C		-40°C to +85°C			-10°C to +60°C				
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		100MΩ min. 100V DC			100MΩ min. 500V DC	100MΩ min. 100V DC			100MΩ 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 (Unit : mm)				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)			10mm	0.17 mm	15 mm	
			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	15mm	0.25 mm	20 mm	
			10	0.17	15	above 5 and below 10	0.9 max.	10	0.2	15				
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 250mΩ max.	10,000cycles 100mΩ max.	10,000cycles 40mΩ max.	10,000cycles 100mΩ max.			30,000cycles 100mΩ max.	10,000cycles 70mΩ max.				
	Operating life with load Load : (at rated load)		10,000cycles 250mΩ max.	10,000cycles 100mΩ max.	10,000cycles 60mΩ max.	10,000cycles 150mΩ max.			10,000cycles 100mΩ max.					
Environmental performance	Cold		-40±2°C for 500h		-20±2°C for 96h									
	Dry heat		85±2°C for 500h		85±2°C for 96h									
	Damp heat		60±2°C, 90 to 95%RH for 500h		40±2°C, 90 to 95%RH for 96h									
Soldering	Manual soldering		————	350±10°C 3 ⁺ 1s	350±5°C 3s max.	350±10°C, 3 ⁺ 1s								
	Dip soldering		————	260±5°C 5±1s	——	260±5°C 10±1s			260±3°C 5s max.	260±5°C 10±1s				
	Reflow soldering		Please see P.172			—————								
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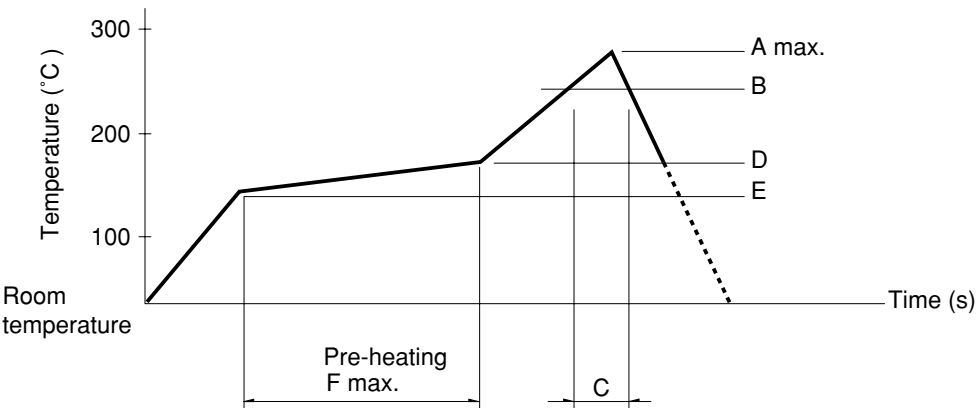
Soldering Conditions

Example of Reflow Soldering Condition

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



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	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.