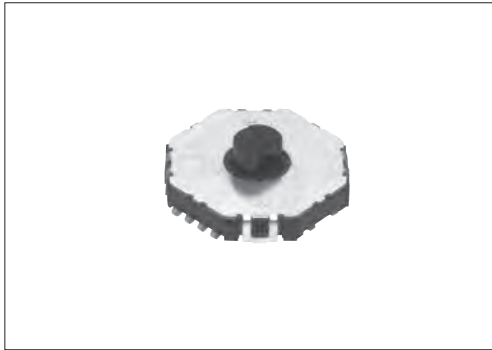


SRBD

Heavy-torque Feel, Low-profile Type

Mode switching with maximum 10-position



Typical Specifications

Items	Specifications
Rating (max.)/(min.) (Resistive load)	1mA 5V DC / 50μA 3V DC
Contact resistance (Initial / After operating life)	200mΩ max. / 250mΩ max.
Rotational torque	13±5mN·m
Operating life with load	10,000 cycles (1mA 5V DC)
Voltage proof	100V AC 1minute

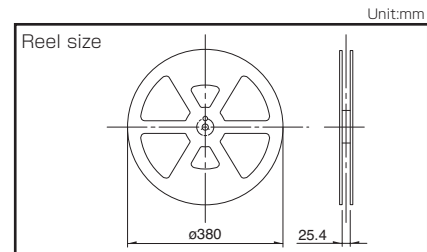
Product Line

Poles	Positions	Changeover angle	Detent	Location lug	Changeover timing	Soldering	Actuator length (mm)	Minimum order unit (pcs.)		Product No.	Drawing No.
								Japan	Export		
1	10	36°	5	with	Non shorting	For PC board (Reflow)	1.7	1,200	4,800	SRBD150201	1
			7	without						SRBD170401	2
			8	with						SRBD180201	1
			10							SRBD110401	

Packing Specifications

Taping

Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case /Japan	1 case /export packing		
1,200	2,400	4,800	24	428×413×172



Detector

Slide

Push

Rotary

Power

Dual-in-line
Packager type

SRBD Heavy-torque Feel, Low-profile Type

Detector

Slide

Push

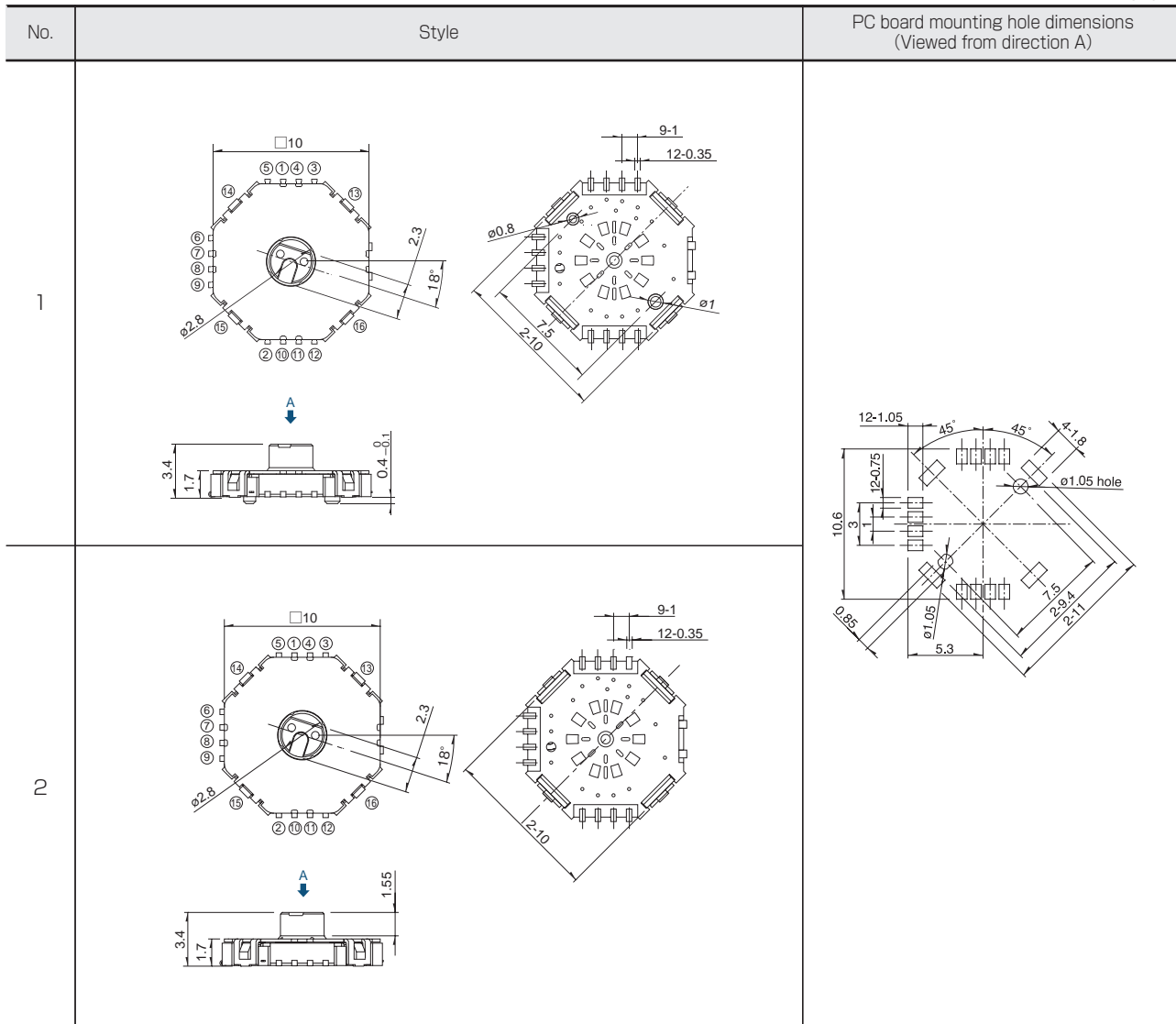
Rotary

Power

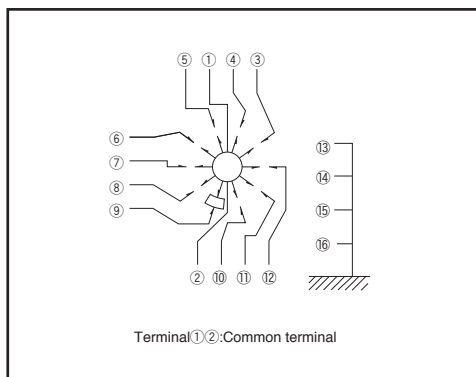
Dual-in-line
Package Type

■ Dimensions

Unit:mm



■ Circuit Diagram (Viewed from Direction A)














■ Correspondence Table of Terminal No. and Detent

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

Rotary Switches

List of Varieties

- Detector
- Slide
- Push
- Rotary
- Power
- Push-line Package Type

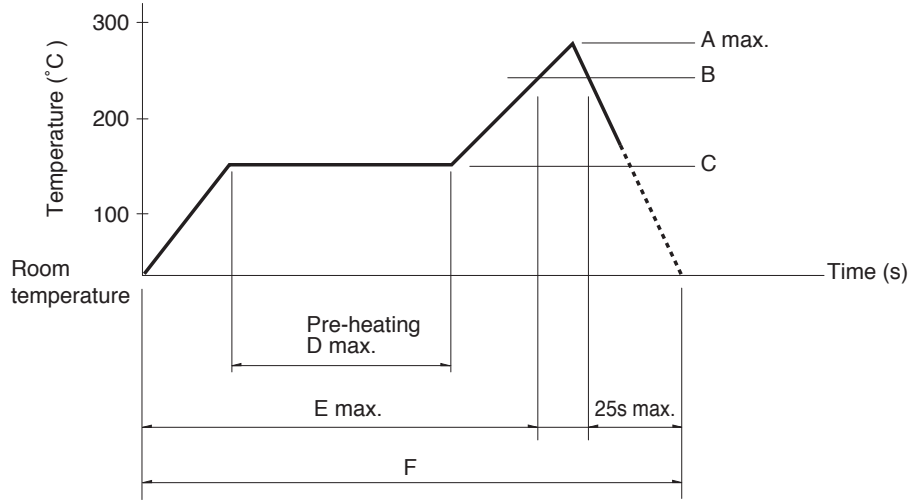
Series		SRBD	SRBQ		SRBM		SRBV	SRRM
			Insertion	Reflow type	Rotary	Pulse		
Photo								
Angle of throw		36°	40±3°		30±3°	18±3°	30±3°	
Number of poles		1		1, 2		1	1, 2, 3, 4	
Rotational torque		13±5mN·m	6±3mN·m 13±5mN·m		40±20mN·m 15±7mN·m		30±15mN·m	80±30mN·m (Shorting) 70±30mN·m (Non shorting)
Dimensions (mm)	W	10	11.4		10		16.2	
	D		12.4		12.5		18.5	
	H		3.5		11		7.5	
Operating temperature range		-25°C to +85°C	-10°C to +60°C		-30°C to +85°C		-10°C to +85°C	-10°C to +60°C
Automotive use		—	—		—		—	—
Life cycle								
Rating (max.)/(min.) (Resistive load)		1mA 5V DC 50µA 3V DC	0.1A 16V DC 50µA 3V DC				0.3A 16V DC 50µA 3V DC	0.25A 30V DC 50µA 3V DC
Durability	Operating life without load	10,000 cycles 250mΩ max.	10,000 cycles 100mΩ max.			30,000 cycles 100mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.
	Operating life with load Load: as rating	10,000 cycles 250mΩ max.	10,000 cycles 100mΩ max.		10,000 cycles 150mΩ max.		10,000 cycles 60mΩ max.	
Electrical performance	Initial contact resistance	200mΩ max.	50mΩ max.					20mΩ max.
	Insulation resistance	100MΩ min. 100V DC						100MΩ min. 500V DC
	Voltage proof	100V AC for 1minute						500V AC for 1minute
Mechanical performance	Terminal strength	3N for 1minute	5N for 1minute				10N for 1minute	
	Actuator strength	Operating direction	—	—	0.5N·m	—	0.6N·m	1N·m
		Pulling direction	50N	20N		100N		
	Wobble of actuator	Load at the tip of shaft SRRM, SRBM, SRBQ, SRBV: 1N The below table shows for SRRM, SRBM The below table shows for SRBQ The below table shows for SRBV						
Measuring position from mounting surface		Shaft wobble (max. value)	Applicable mounting dimension	Distance from mounting surface to the tip of shaft	Shaft wobble (max. value)	Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension
10		0.17	15	below 5	0.5	10	0.2	15
15		0.25	20	above 5 and below 10	0.9	15	0.3	20
20		0.35	25	above 10 and below 15	1.2	20	0.4	25
25	0.42	30						
30	0.5	above 35						
Unit:mm								
Environmental performance	Cold	-40°C 500h	-20°C 96h		-40°C 96h		-20°C 96h	
	Dry heat	85°C 500h	85°C 96h					
	Damp heat	60°C, 90 to 95%RH 500h	40°C, 90 to 95%RH 96h					
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 Rotary Switches Cautions 146

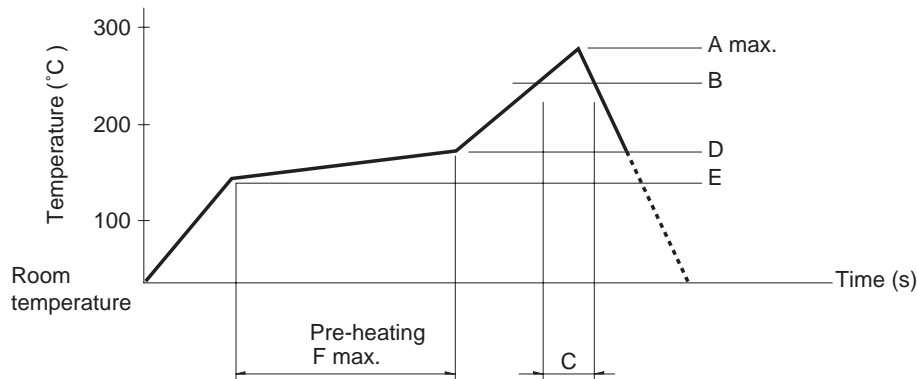
Rotary Switches / Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple $\phi 0.1$ 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 (°C)	D (s)	E (s)	F (s)
SRBQ	250	200	150±5	80 to 100	—	—



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.

Reference for Hand Soldering

Series	Soldering temperature	Soldering time
SRBQ, SRBM, SRBV, SRRM	350±10°C	3+1/0s
SRBQ (Reflow type)	350±5°C	3s max.

Reference for Dip Soldering

(For PC board terminal types)

Series	Items		Dip soldering	
	Preheating temperature	Preheating time	Soldering temperature	Duration of immersion
SRBM	100°C max.	60s max.	260±5°C	5s max.
SRBV, SRRM	—	—	260±5°C	10±1s
SRBQ	—	—	260±5°C	5±1s

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