Switches

Rotary Switches

List of Varieties

Series			SRBD	SRBQ	SRBM	SRBV
Photo						
Dimensions (mm)			10.0×10.0×1.7	11.4×12.4×3.1 11.4×12.4×3.5	10.0×12.5×11.5 10.0×12.9×11.5	16.2×18.5×7.5
Changeover angle			36°	40±3°	18±3° 30±3°	30±3°
Poles			1		1 2	1
Rotational torque			13±5mN·m	6±3mN·m 13±5mN·m	15±7mN·m 40±20mN·m	30±15mN·m
Operating temperature range			-25℃ to +85℃	-10℃ to +60℃	-30℃ to +85℃	-10℃ to +85℃
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
Electrical performance	Contact resistance (Initial performance/ After lifetime)		200mΩ max./250mΩ max.	50mΩ max./100mΩ max.	50mΩ max./150mΩ max.	
	Insulation resistance		100MΩ min. 100V DC			
	Voltage proof		100V AC for 1 minute			
Mechanical performance	Terminal strength		3N for 1 minute	5N for 1 minute		
	Actuator strength	Rotational direction	—		- 0.5N·m	0.6N·m
		Push direction	50N	20N	100N	
Durability	Operating life without load		10,000 cycles 250mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 100mΩ max. 30,000 cycles 100mΩ max.	10,000 cycles 100mΩ max.
	Operating life with load (at max. rated load)		10,000 cycles 250mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 150mΩ max.	
Environmental performance	Cold		-40℃ 500h	-20℃ 96h	-40℃ 96h	-20℃ 96h
	Dry heat		85℃ 500h	85℃ 96h		
	Damp heat		60℃, 90 to 95%RH 500h	40℃, 90 to 95%RH 96h		
Automotive			—	—	—	—

⚠Note

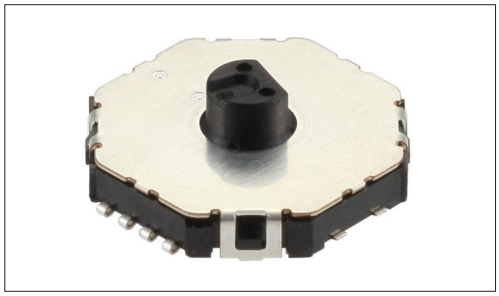
● Indicates applicability to all products in the series, while ○ indicates applicability to some products in the series.

Switches Rotary Switches

Heavy-torque Feel, Low-profile Type

SRBD Series

Mode selector switch capable of up to 10 positions.



- Rating (max.)/(min.) (Resistive load): 1mA 5V DC/50μA 3V DC
- Contact resistance (Initial performance/After lifetime):
  200mΩ max./250mΩ max.
- Operating life without load: 10,000 cycles 250mΩ max.
- Operating life with load (at max. rated load): 10,000 cycles 250mΩ max.

Applications: Healthcare: Healthcare equipment
Audio_TV: Cameras

■ Product List

Products No.	Poles	Positions	Changeover angle	Detent	Location lug	Changeover timing	Rotational torque	Soldering	Actuator length	Dimensions (W×D×H) (mm)	Automotive	Drawing No.
SRBD150201	1	10	36°	5	with	Non shorting	13±5mN·m	For PC borrd (Reflow)	1.7mm	10.0×10.0×1.7	—	1
SRBD170401	1	10	36°	7	without	Non shorting	13±5mN·m	For PC borrd (Reflow)	1.7mm	10.0×10.0×1.7	—	2
SRBD180201	1	10	36°	8	with	Non shorting	13±5mN·m	For PC borrd (Reflow)	1.7mm	10.0×10.0×1.7	—	3
SRBD110401	1	10	36°	10	with	Non shorting	13±5mN·m	For PC borrd (Reflow)	1.7mm	10.0×10.0×1.7	—	4

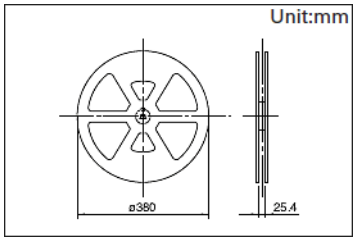
⚠Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders for taping products per minimum order unit (1 reel or a case).

■ Packing Specifications

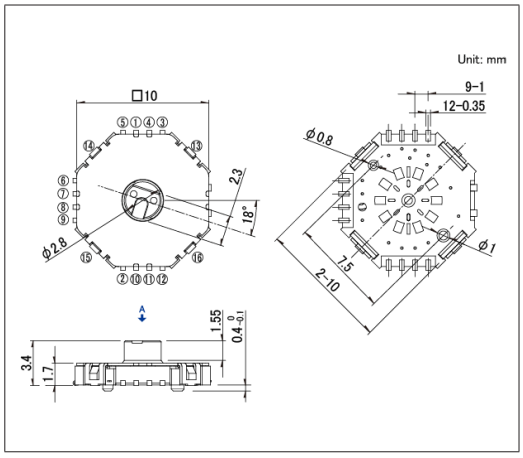
Taping

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 x 413 x 172

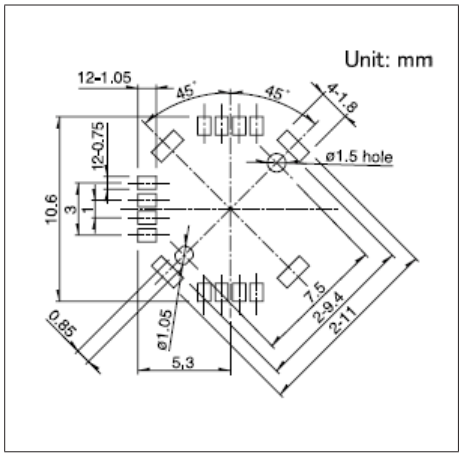


Drawing No.1

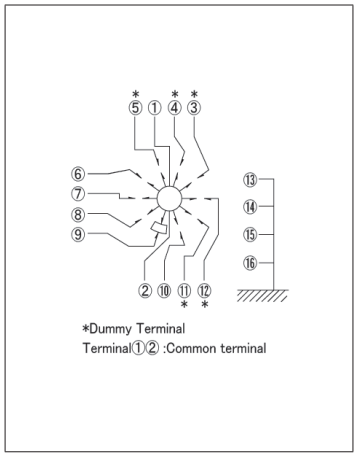
■ Dimensions



■ Land Dimensions



■ Circuit Diagram



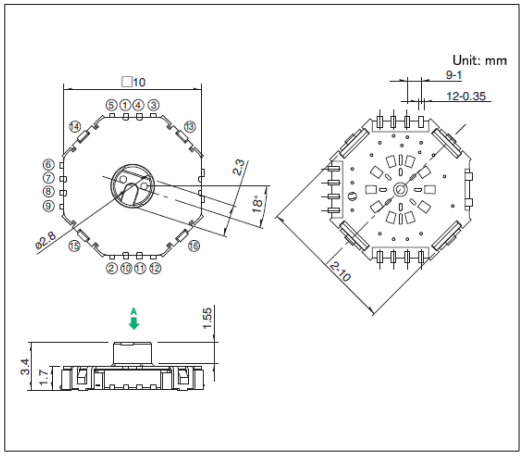
Viewed from direction A in the dimensions.

Heavy-torque Feel, Low-profile Type

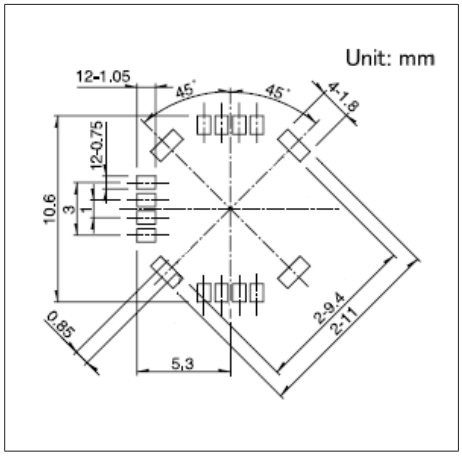
SRBD Series

Drawing No.2

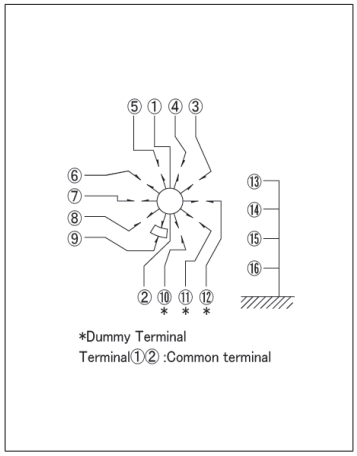
■ Dimensions



■ Land Dimensions



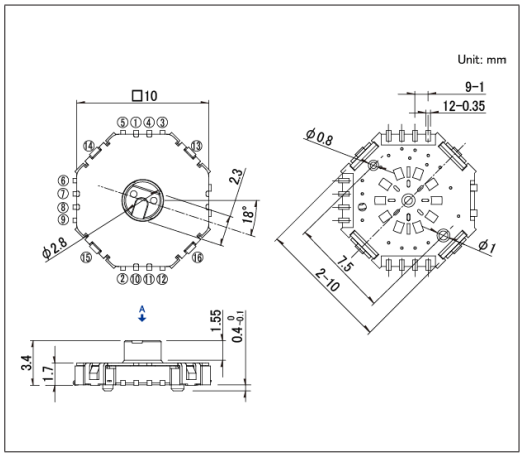
■ Circuit Diagram



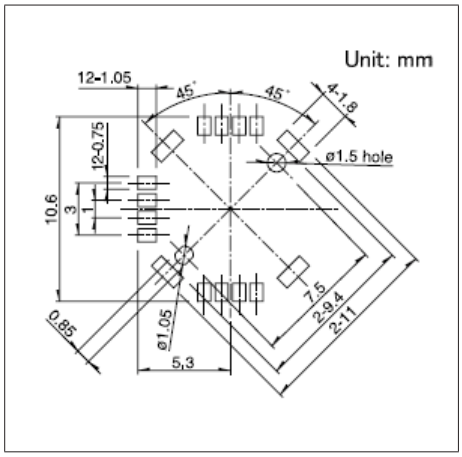
Viewed from direction A in the dimensions.

Drawing No.3

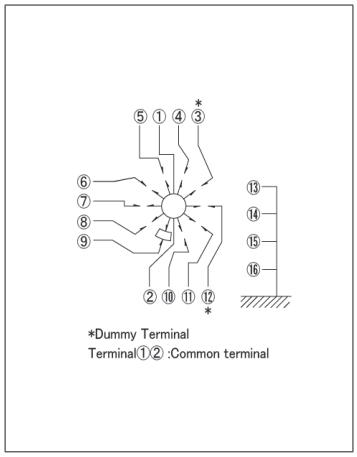
■ Dimensions



■ Land Dimensions



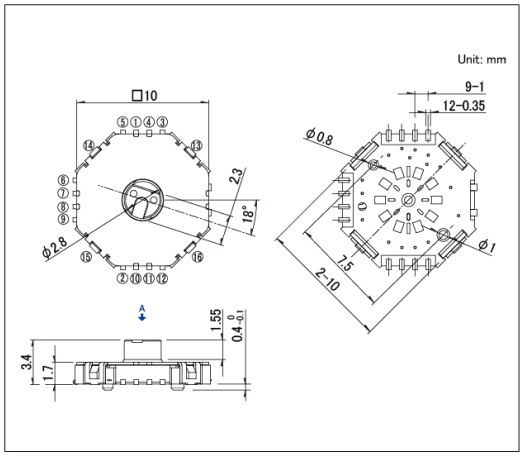
■ Circuit Diagram



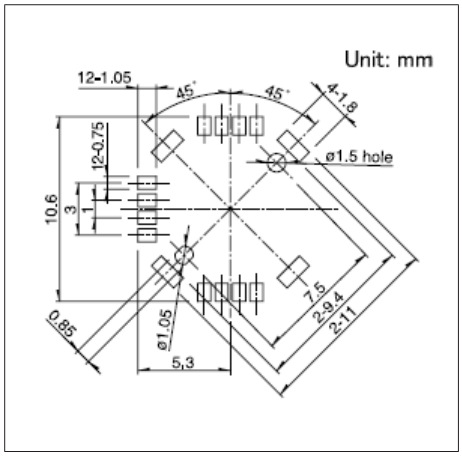
Viewed from direction A in the dimensions.

Drawing No.4

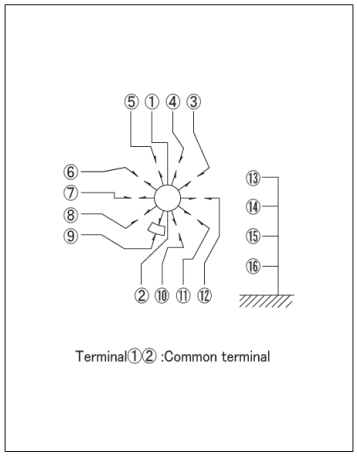
■ Dimensions



■ Land Dimensions



■ Circuit Diagram

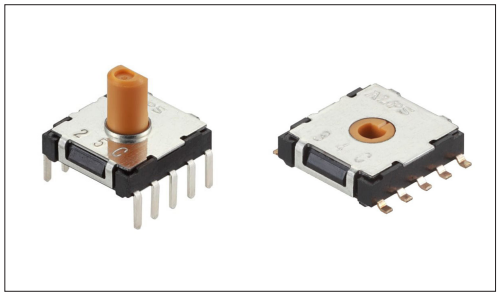


Viewed from direction A in the dimensions.

9-positions Low-profile Vertical Type

SRBQ Series

Unique detent mechanism delivering a light operation feel with a thin profile.



- Rating (max.)/(min.) (Resistive load):0.1A 16V DC/50μA 3V DC
- Contact resistance (Initial performance/After lifetime):
  50mΩ max./100mΩ max.
- Operating life without load:10,000 cycles 100mΩ max.
- Operating life with load (at max. rated load):10,000 cycles 100mΩ max.

Applications:Home:Major home appliances

■ Product List

Products No.	Poles	Positions	Changeover angle	Changeover timing	Rotational torque	Soldering	Actuator configuration	Actuator length	Dimensions (W×D×H) (mm)	Automotive	Drawing No.
SRBQ090200	1	9	40±3°	Non shorting	6±3mN·m	Insertion	Flat	5.8mm	11.4×12.4×3.5	—	1
SRBQ490100	1	9	40±3°	Non shorting	13±5mN·m	Insertion	Flat	5.8mm	11.4×12.4×3.5	—	2
SRBQ290301	1	9	40±3°	Non shorting	6±3mN·m	Reflow	Non shaft	—	11.4×12.4×3.1	—	3

⚠Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).
3. Please place purchase orders for taping products per minimum order unit (1 reel or a case).

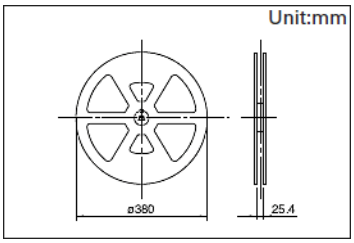
■ Packing Specifications

Bulk

Products No.	Number of packages(pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
SRBQ090200 SRBQ490100	1,215	4,860	540 x 360 x 290

Taping

Products No.	Number of packages(pcs.)			Tape width (mm)	Export package measurements (mm)
	1 reel	1 case / Japan	1 case / export packing		
SRBQ290301	1,200	2,400	4,800	24	406 x 406 x 190

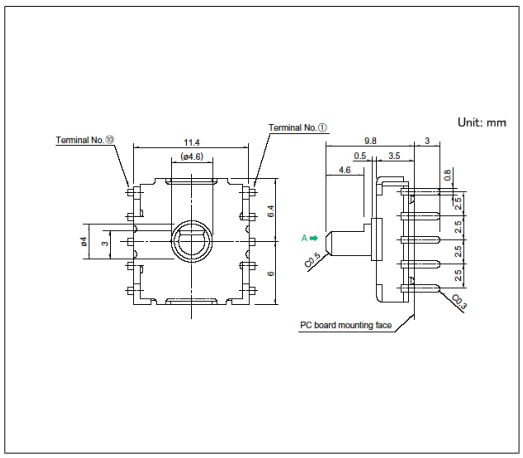


9-positions Low-profile Vertical Type

SRBQ Series

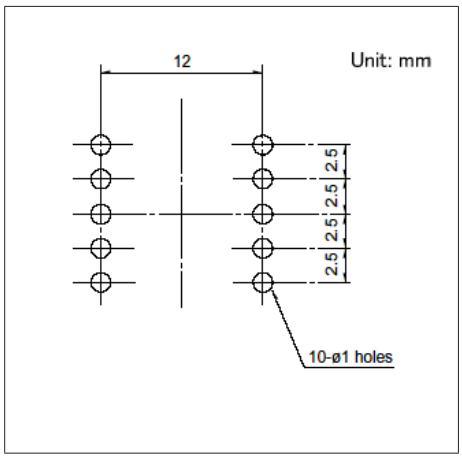
Drawing No.1

■ Dimensions



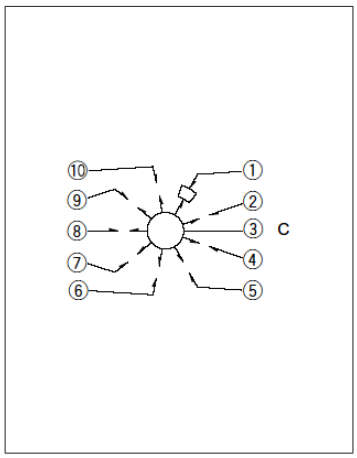
Standard torque

■ Mounting Hole Dimensions



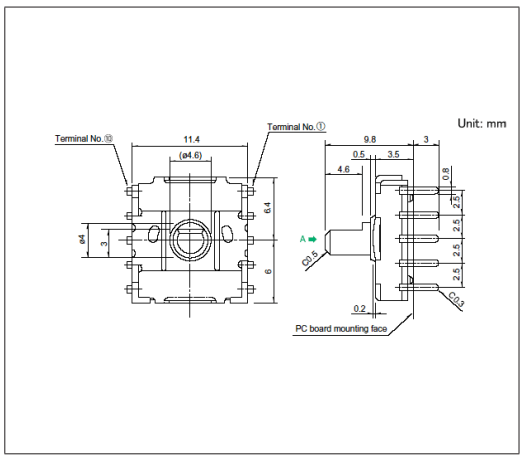
Viewed from direction A in the dimensions.

■ Circuit Diagram



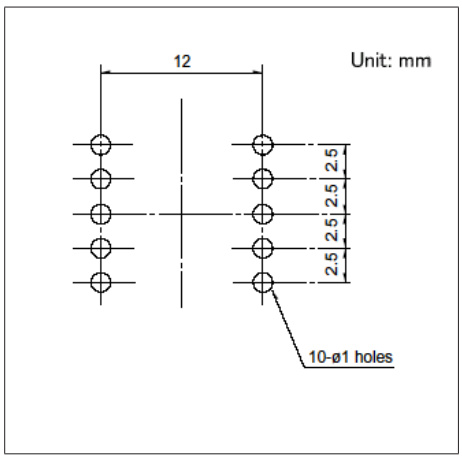
Drawing No.2

■ Dimensions



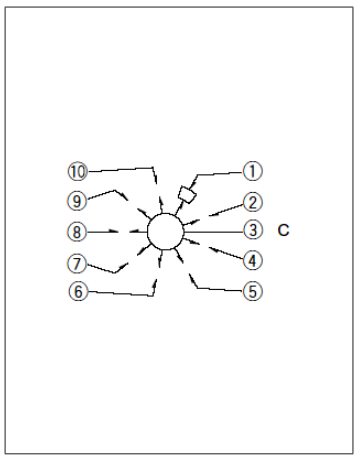
Heavy torque

■ Mounting Hole Dimensions



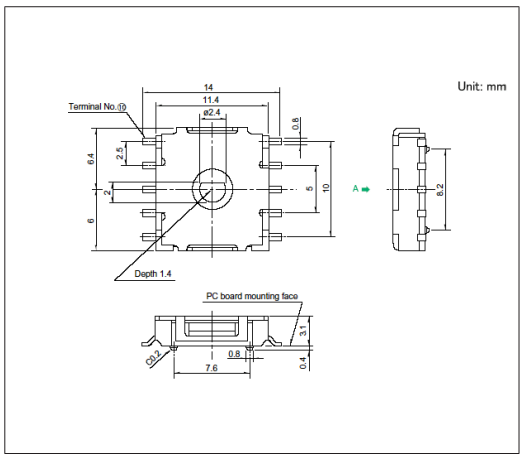
Viewed from direction A in the dimensions.

■ Circuit Diagram

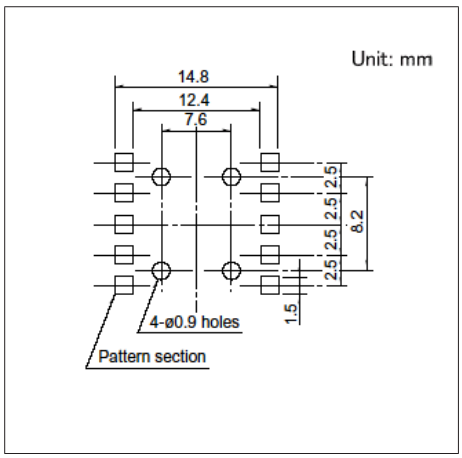


Drawing No.3

■ Dimensions

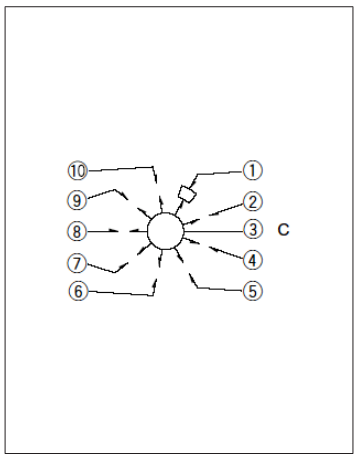


■ Land Dimensions



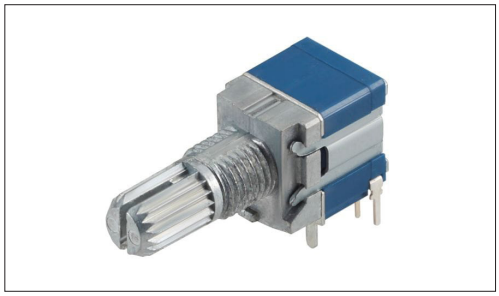
Viewed from direction A in the dimensions.

■ Circuit Diagram



6-positions Horizontal Type
SRBM Series

Same shape available as a pulse switch (20 pulses).



- Rating (max.)/(min.) (Resistive load):0.1A 16V DC/50μA 3V DC
- Contact resistance (Initial performance/After lifetime):
  50mΩ max./150mΩ max.
- Operating life without load:10,000 cycles 100mΩ max.
- Operating life with load (at max. rated load):10,000 cycles 150mΩ max.

Applications:Energy_Industrial:Industrial equipment

■ Product List

Products No.	Poles	Positions	Changeover angle	Changeover timing	Rotational torque	Actuator configuration	Actuator length	Dimensions (W×D×H) (mm)	Automotive	Drawing No.
SRBM120700	2	2	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 15mm	10.0×12.5×11.5	—	1
SRBM121300	2	2	30±3°	Non shorting	40±20mN·m	Flat	L: 15mm	10.0×12.5×11.5	—	2
SRBM131300	2	3	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 15mm	10.0×12.5×11.5	—	3
SRBM131400	2	3	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 20mm	10.0×12.5×11.5	—	
SRBM140700	2	4	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 15mm	10.0×12.5×11.5	—	4
SRBM140800	2	4	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 20mm	10.0×12.5×11.5	—	
SRBM149501	2	4	30±3°	Non shorting	40±20mN·m	Flat	L: 20mm	10.0×12.5×11.5	—	5
SRBM150500	1	5	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 15mm	10.0×12.5×11.5	—	6
SRBM154002	1	5	30±3°	Non shorting	40±20mN·m	Flat	L: 15mm	10.0×12.5×11.5	—	7
SRBM160700	1	6	30±3°	Non shorting	40±20mN·m	18-tooth serration	L: 15mm	10.0×12.5×11.5	—	8
SRBM1L0800	1	20-pulses	18±3°	—	15±7mN·m	18-tooth serration	L: 15mm	10.0×12.9×11.5	—	9
SRBM1L1400	1	20-pulses	18±3°	—	15±7mN·m	Flat	L: 15mm	10.0×12.9×11.5	—	10

Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. All the axis are die casting shafts.
3. Please place purchase orders per minimum order unit (integer).

■ Packing Specifications

Tray

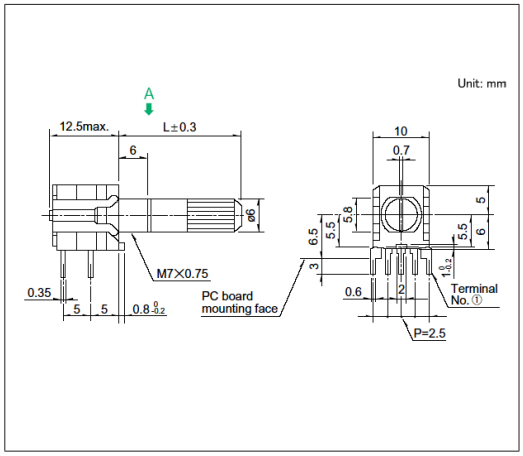
Products No.	Number of packages(pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
SRBM120700 SRBM121300 SRBM131300 SRBM140700 SRBM150500 SRBM154002 SRBM160700 SRBM1L0800 SRBM1L1400	360	1,800	400 x 270 x 290
SRBM131400 SRBM140800 SRBM149501	210	1,050	400 x 270 x 290

6-positions Horizontal Type

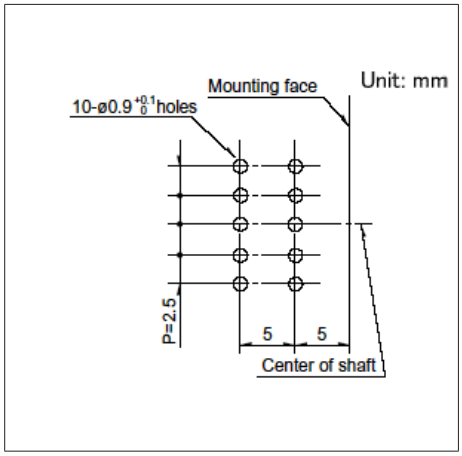
SRBM Series

Drawing No.1

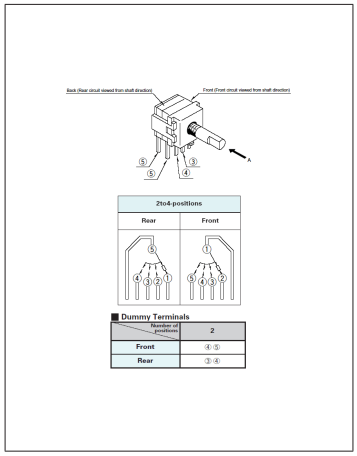
■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

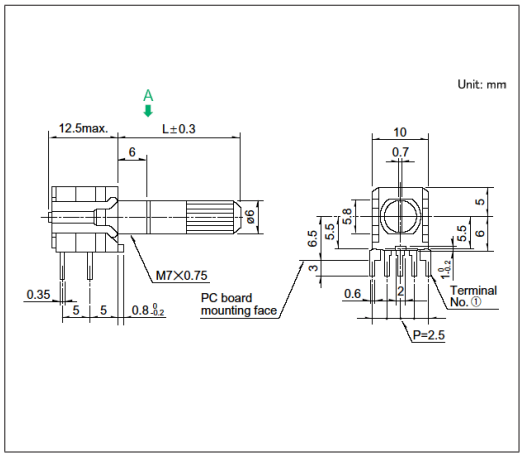


Viewed from direction A in the dimensions.

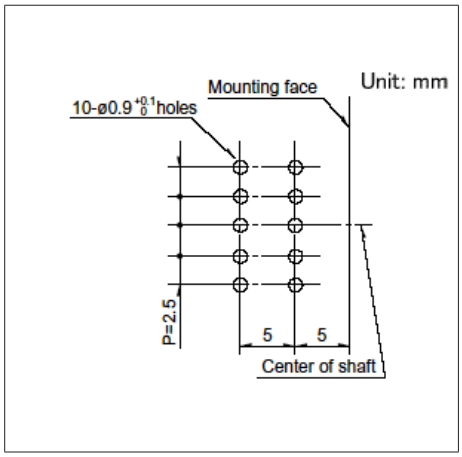
1. Viewed from direction A.
2. For positions 2, 1 section consists of 2-poles.

Drawing No.2

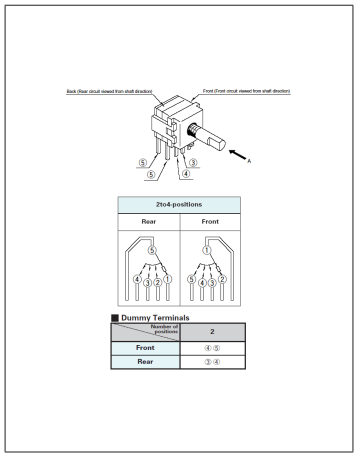
■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

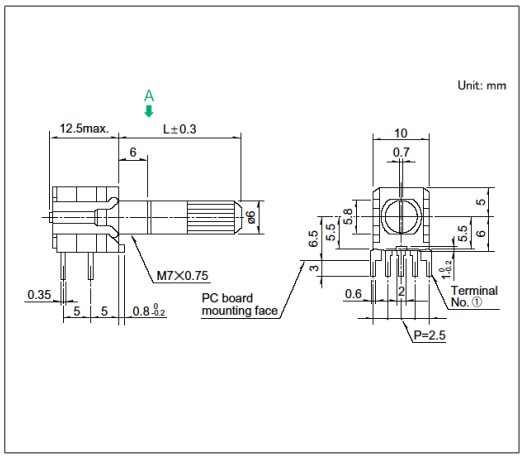


Viewed from direction A in the dimensions.

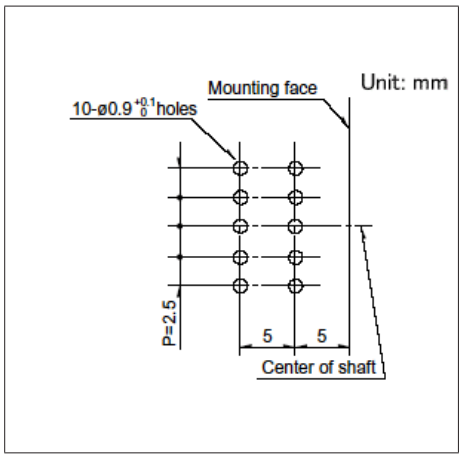
1. Viewed from direction A.
2. For positions 2, 1 section consists of 2-poles.

Drawing No.3

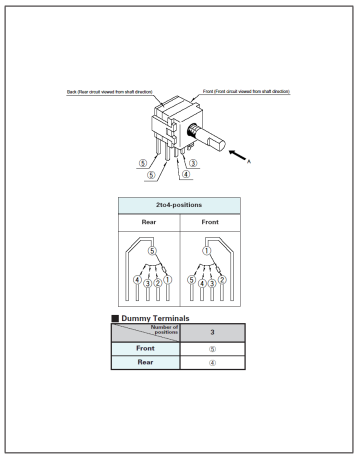
■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals



Viewed from direction A in the dimensions.

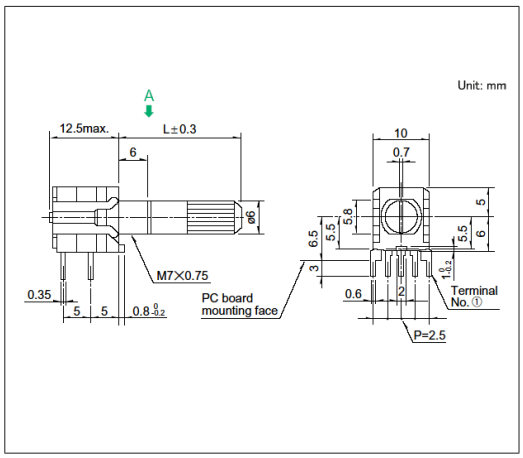
1. Viewed from direction A.
2. For positions 3, 1 section consists of 2-poles.

6-positions Horizontal Type

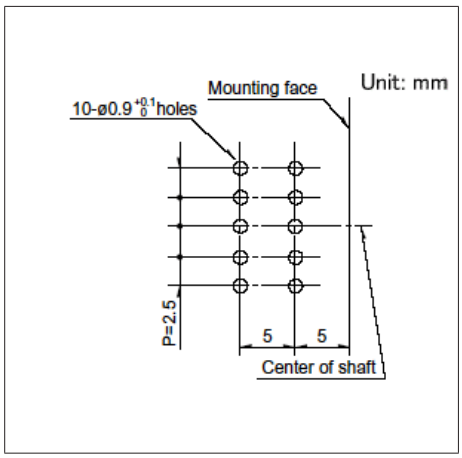
SRBM Series

Drawing No.4

■ Dimensions

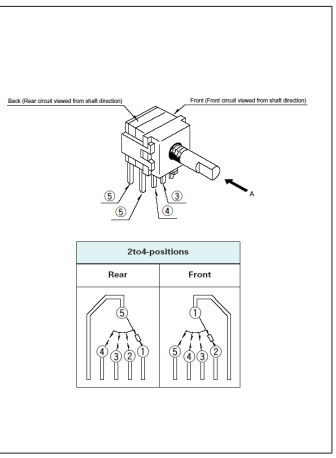


■ Mounting Hole Dimensions



Viewed from direction A in the dimensions.

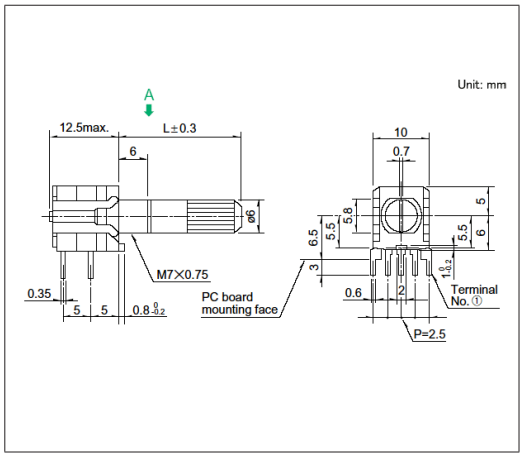
■ Circuit Diagram



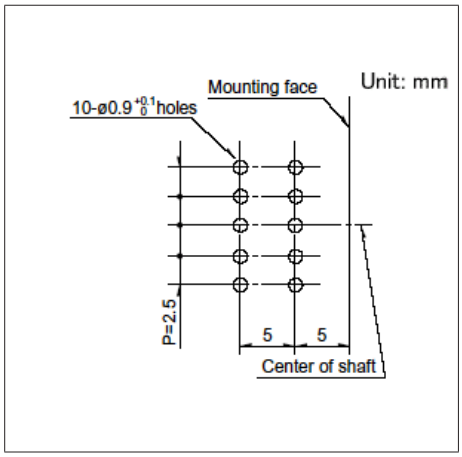
1. Viewed from direction A.
2. For positions 4, 1 section consists of 2-poles.

Drawing No.5

■ Dimensions

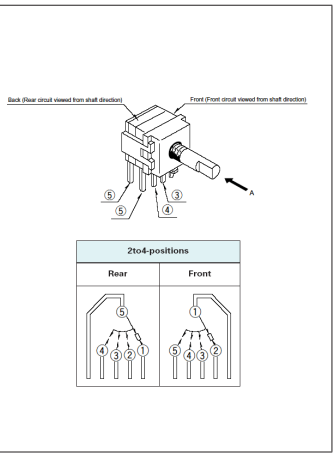


■ Mounting Hole Dimensions



Viewed from direction A in the dimensions.

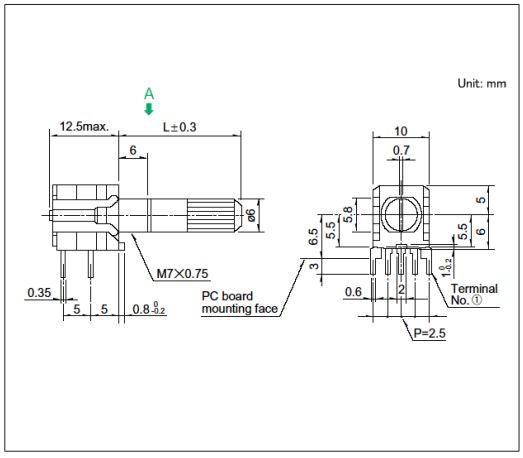
■ Circuit Diagram



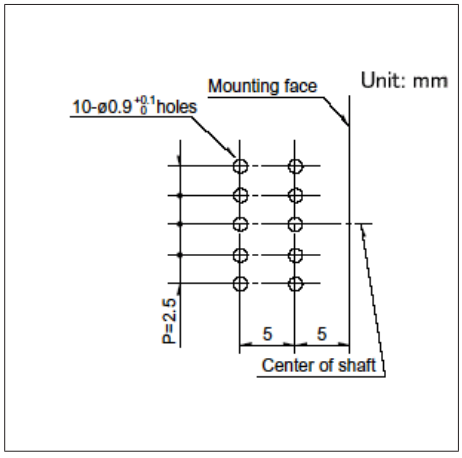
1. Viewed from direction A.
2. For positions 4, 1 section consists of 2-poles.

Drawing No.6

■ Dimensions

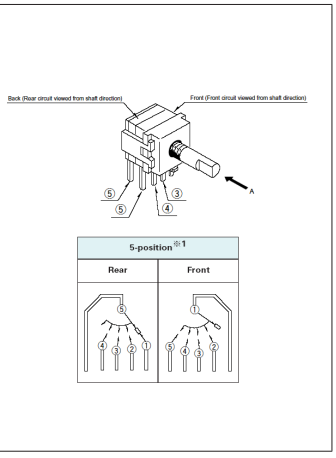


■ Mounting Hole Dimensions



Viewed from direction A in the dimensions.

■ Circuit Diagram



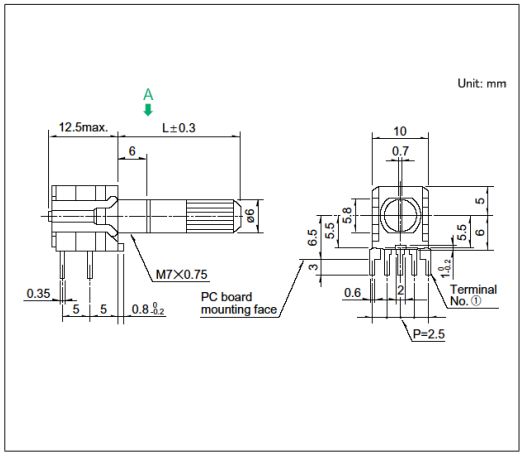
1. Viewed from direction A.
2. Circuit steps are 2 to 5 positions at front and 1 to 4 positions at rear.
3. It is necessary external wiring of common terminals.
4. For positions 5, 1 section consists of 1-pole.

6-positions Horizontal Type

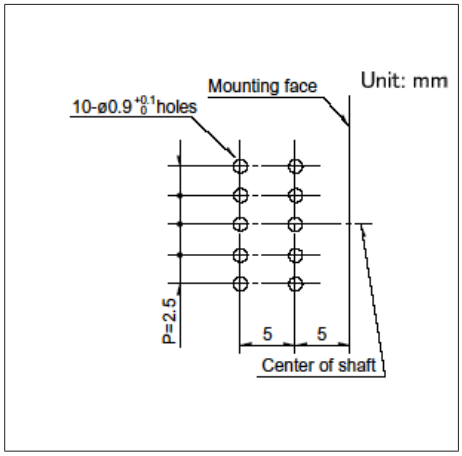
SRBM Series

Drawing No.7

■ Dimensions

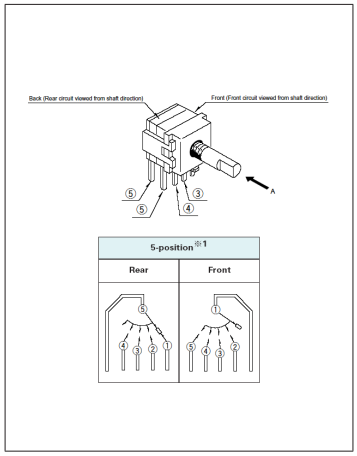


■ Mounting Hole Dimensions



Viewed from direction A in the dimensions.

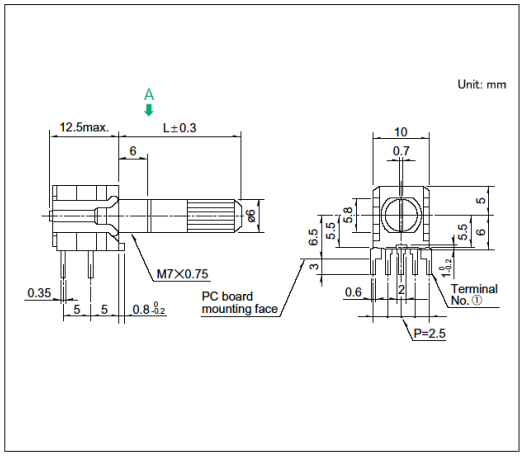
■ Circuit Diagram



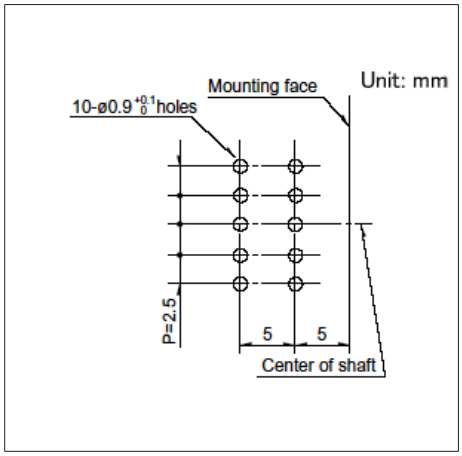
1. Viewed from direction A.
2. Circuit steps are 2 to 5 positions at front and 1 to 4 positions at rear.
3. It is necessary external wiring of common terminals.
4. For positions 5, 1 section consists of 1-pole.

Drawing No.8

■ Dimensions

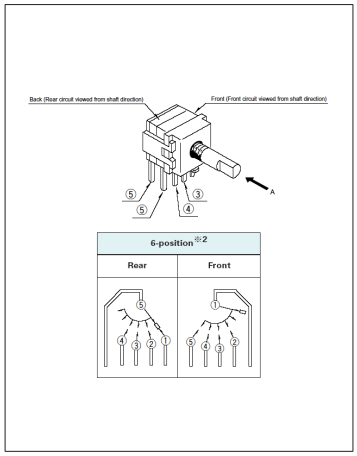


■ Mounting Hole Dimensions



Viewed from direction A in the dimensions.

■ Circuit Diagram



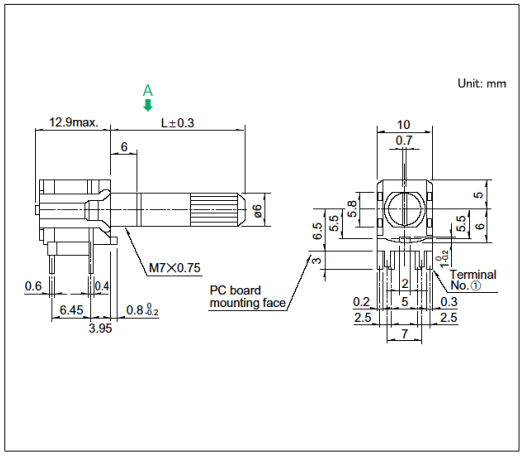
1. Viewed from direction A.
2. Circuit steps are 3 to 6 positions at front and 1 to 4 positions at rear.
3. It is necessary external wiring of common terminals.
4. For positions 6, 1 section consists of 1-pole.

6-positions Horizontal Type

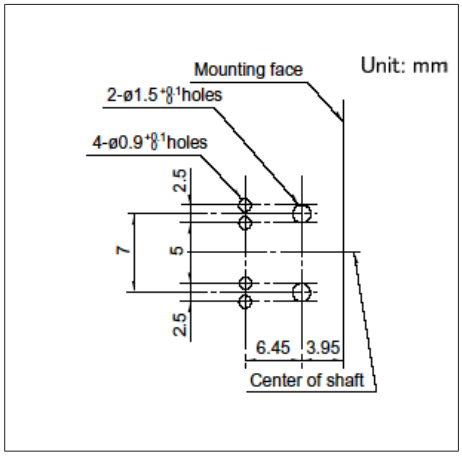
SRBM Series

Drawing No.9

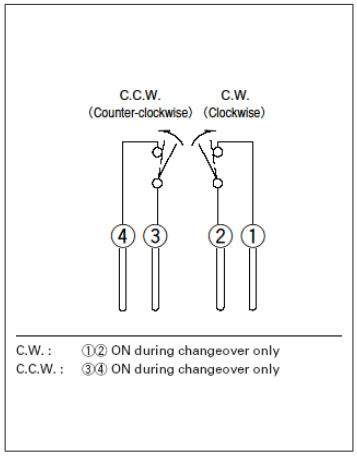
■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram

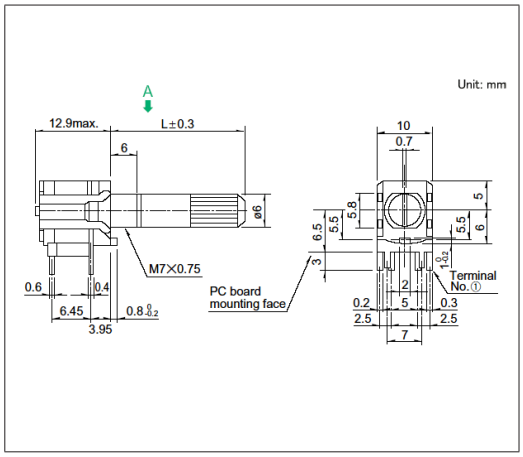


Viewed from direction A in the dimensions.

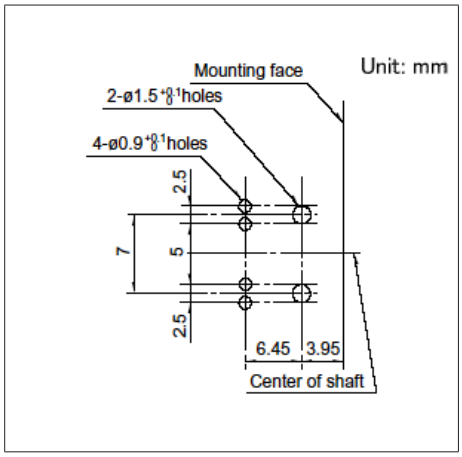
Pulse Switch

Drawing No.10

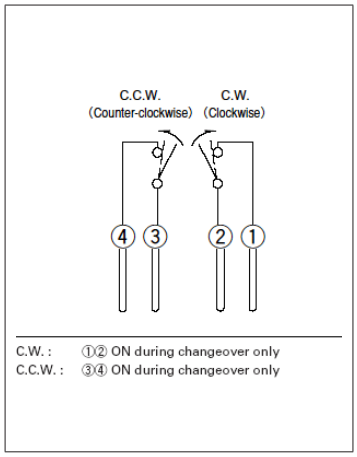
■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram



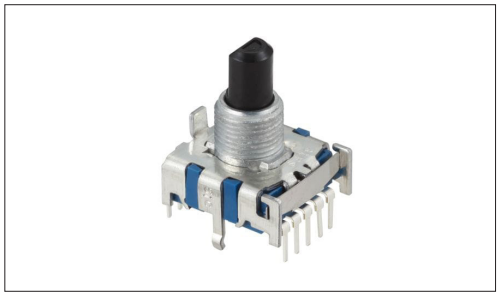
Viewed from direction A in the dimensions.

Pulse Switch

8-positions Low-profile Vertical Type

SRBV Series

Contributes to set design flexibility with a body height of 7.5mm and thin-profile design.



- Rating (max.)/(min.) (Resistive load):0.3A 16V DC/50μA 3V DC
- Contact resistance (Initial performance/After lifetime):
  50mΩ max./150mΩ max.
- Operating life without load:10,000 cycles 100mΩ max.
- Operating life with load (at max. rated load):10,000 cycles 150mΩ max.

Applications:Home:Major home appliances

■ Product List

Products No.	Poles	Positions	Changeover angle	Changeover timing	Rotational torque	Actuator configuration	Actuator length	Dimensions (W×D×H) (mm)	Automotive	Drawing No.
SRBV131803	1	3	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	1
SRBV131502	1	3	30±3°	Non shorting	30±15mN·m	Flat	L: 20mm	16.2×18.5×7.5	—	2
SRBV141404	1	4	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	3
SRBV141201	1	4	30±3°	Non shorting	30±15mN·m	Flat	L: 20mm	16.2×18.5×7.5	—	4
SRBV151102	1	5	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	5
SRBV150901	1	5	30±3°	Non shorting	30±15mN·m	Flat	L: 20mm	16.2×18.5×7.5	—	6
SRBV160803	1	6	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	7
SRBV170701	1	7	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	8
SRBV170501	1	7	30±3°	Non shorting	30±15mN·m	Flat	L: 20mm	16.2×18.5×7.5	—	9
SRBV181004	1	8	30±3°	Non shorting	30±15mN·m	Flat	L: 15mm	16.2×18.5×7.5	—	10

⚠Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).

■ Packing Specifications

Tray

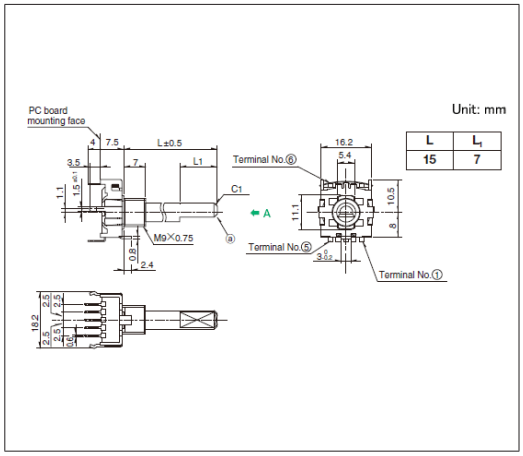
Number of packages(pcs.)		Export package measurements (mm)
1 case / Japan	1 case / export packing	
165	330	400 x 270 x 185

8-positions Low-profile Vertical Type

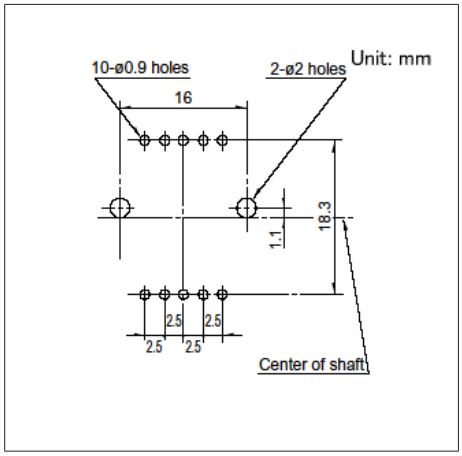
SRBV Series

Drawing No.1

■ Dimensions

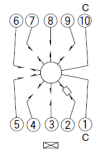


■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

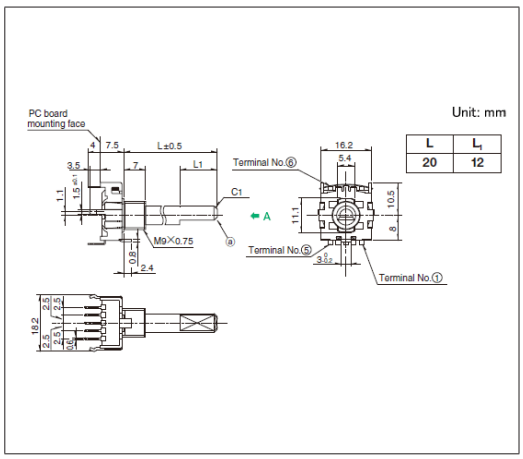
■ Dummy Terminals

3-positions	⑤⑥⑦⑧⑨

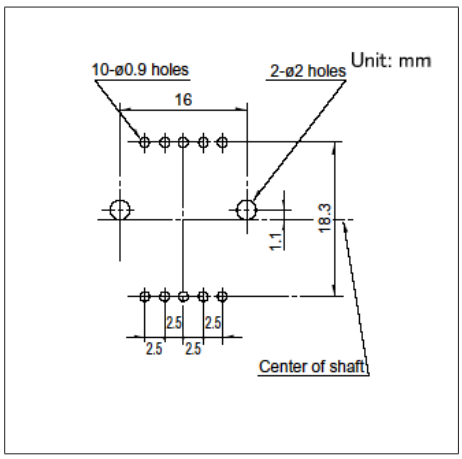
Viewed from direction A in the dimensions.

Drawing No.2

■ Dimensions

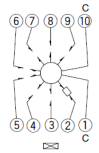


■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

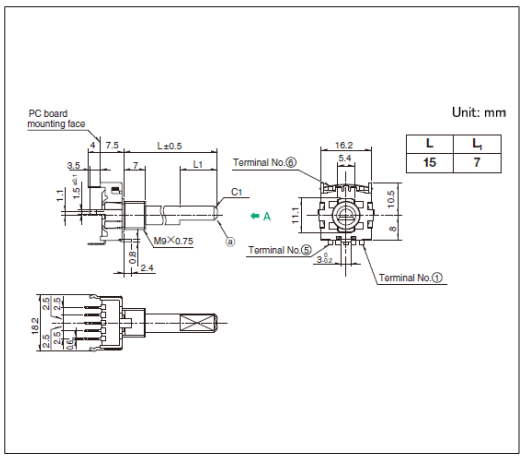
■ Dummy Terminals

3-positions	⑤⑥⑦⑧⑨

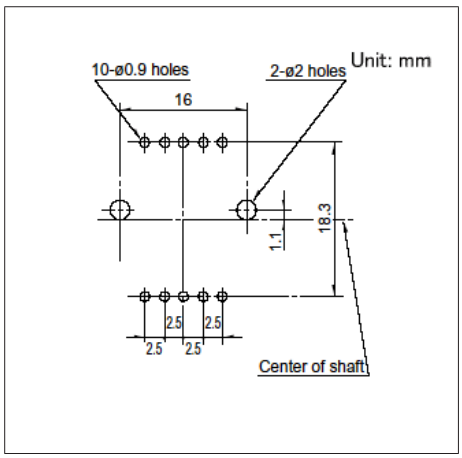
Viewed from direction A in the dimensions.

Drawing No.3

■ Dimensions

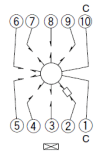


■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

■ Dummy Terminals

4-positions	⑥⑦⑧⑨

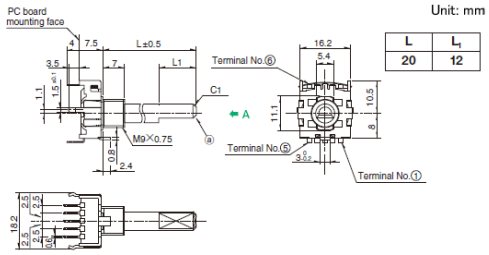
Viewed from direction A in the dimensions.

8-positions Low-profile Vertical Type

SRBV Series

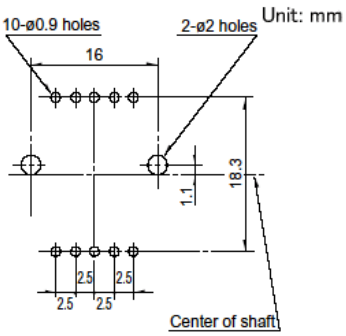
Drawing No.4

■ Dimensions



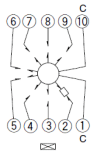
L	L_1
20	12

■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

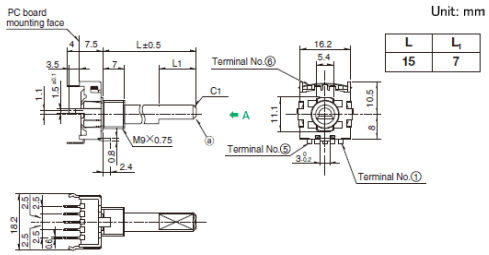
■ Dummy Terminals

4-positions	⑥⑦⑧⑨

Viewed from direction A in the dimensions.

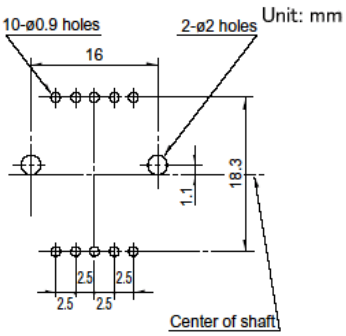
Drawing No.5

■ Dimensions



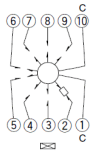
L	L_1
15	7

■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

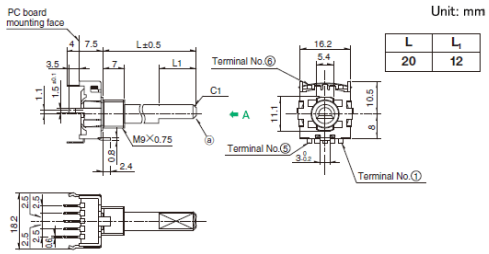
■ Dummy Terminals

5-positions	⑦⑧⑨

Viewed from direction A in the dimensions.

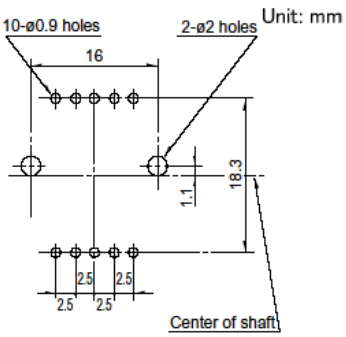
Drawing No.6

■ Dimensions



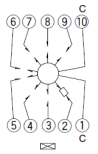
L	L_1
20	12

■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

■ Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

■ Dummy Terminals

5-positions	⑦⑧⑨

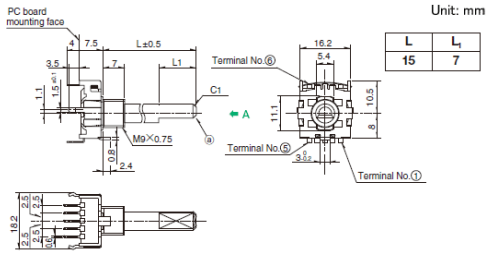
Viewed from direction A in the dimensions.

8-positions Low-profile Vertical Type

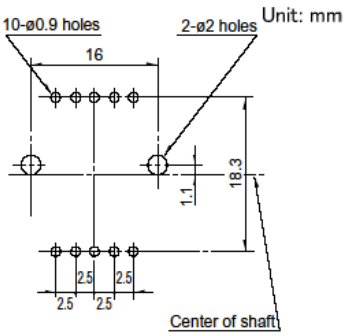
SRBV Series

Drawing No.7

■ Dimensions

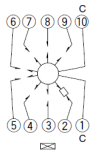


■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

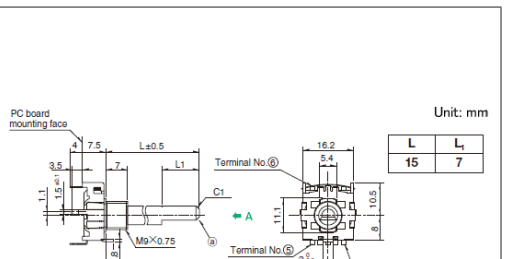
Dummy Terminals

6-positions	⑧⑨

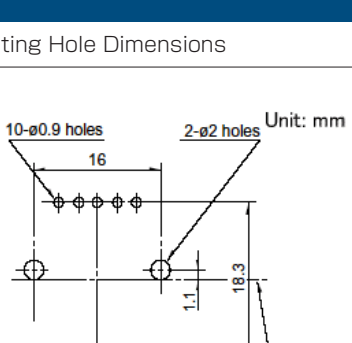
Viewed from direction A in the dimensions.

Drawing No.8

■ Dimensions

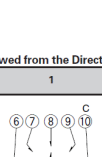


■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

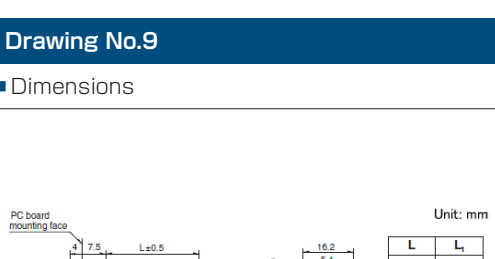
Dummy Terminals

7-positions	⑨

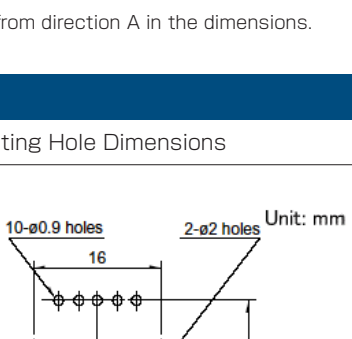
Viewed from direction A in the dimensions.

Drawing No.9

■ Dimensions



■ Mounting Hole Dimensions



■ Circuit Diagram and Dummy Terminals

Standard Circuit Diagram (Viewed from the Direction A)

Number of poles	1
Circuit diagram	

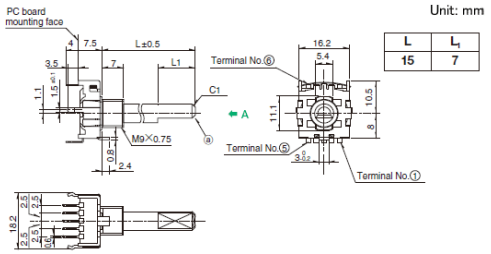
Dummy Terminals

7-positions	⑨

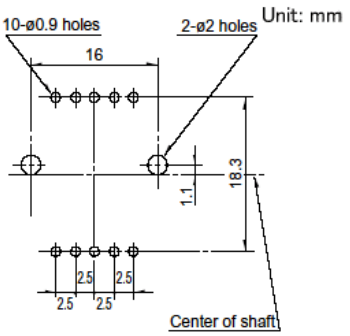
Viewed from direction A in the dimensions.

Drawing No.10

■ Dimensions

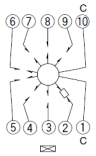


■ Mounting Hole Dimensions



■ Circuit Diagram

Standard Circuit Diagram (Viewed from the Direction A)

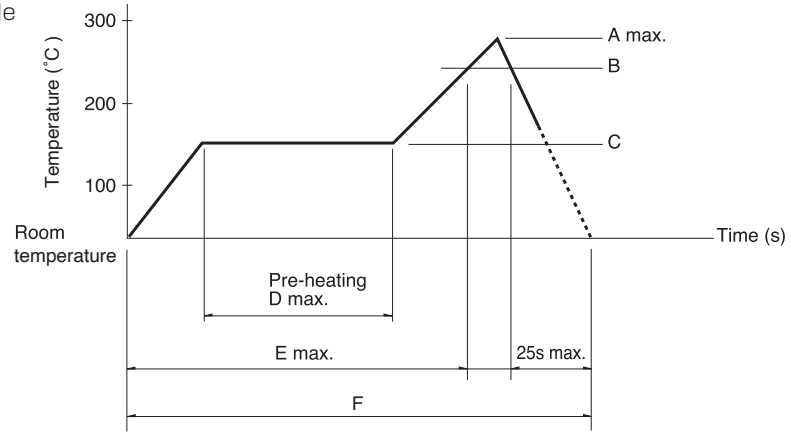
Number of poles	1
Circuit diagram	

Viewed from direction A in the dimensions.

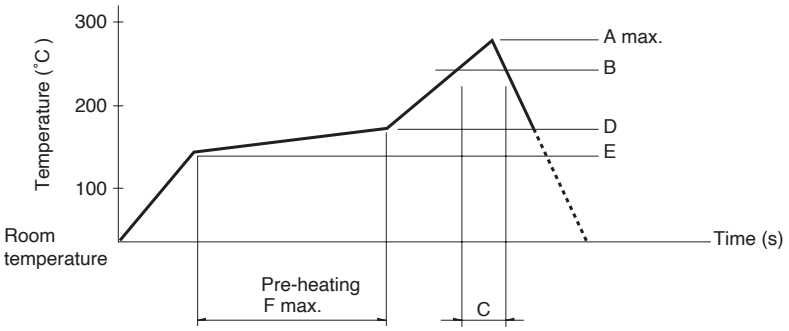
Rotary Switches / Soldering Conditions

■ Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple ϕ0.1 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	250	200	150±5	80 to 100	—	—



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

⚠Note
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	350±10℃	3+1/0s
SRBQ (Reflow type)	350±5℃	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℃ max.	60s max.	260±5℃	5s max.
SRBV	—		260±5℃	10±1s
SRBQ	—		260±5℃	5±1s

Rotary Switches / Cautions

1. Appling load to terminals during soldering under certain conditions may cause deformation and electrical property degradation.
2. Avoid use of water-soluble soldering flux, since it may corrode the switches.
3. Check and conform to soldering requirements under actual mass production conditions.
4. When soldering twice, wait until the first soldered portion cools to normal temperature. Continuous heating will deform the external portions, loosen or dislodge terminals, or may deteriorate their electrical characteristics.
5. Flux from around and above the PC board should not adhere to the switches.
6. After mounting the switches, if you intend to put the board into an oven in order to harden adhesive for other parts, please consult with us.
7. If you use a through-hole PC board or a PC board thinner or thicker than the recommendation, here may be greater heat stress. Verify the soldering conditions thoroughly before use.
8. Solder the switches with detent at the detent position. Soldering switches fixed at the center of the detent may deform the detent mechanisms.
9. No cleaning.
10. Protect small and thin switches from external forces in the set mounting process.
11. Tighten the mounting screws by applying the specified torque. Tightening with larger torque than the specified one will result in malfunction or breakage of screws.
12. Insert these switches to the specified mounting surface and mount them horizontally. If not mounted horizontally, these switches will malfunction.
13. The products are designed and manufactured for direct current resistance. Contact us for use of other resistances such as inductive (L) or capacitive (C).
14. The switch will be break if you apply a greater stress than that specified. Take great care not to let the switch be subject to greater stress than specified.
15. Use of the switches in a dusty environment may lead the dusts entering through the openings and cause imperfect contact or malfunction. Take this into account for set design.
16. Corrosive gas if generated by peripheral parts of a set, malfunction such as imperfect contact may occur. Thorough investigation shall be required beforehand.
17. Storage
    Store the products as delivered at normal temperature and humidity, out of direct sunlight and away from corrosive gases. Use them as soon as possible and no later than six months after delivery.
    Once the seal is broken, use them as soon as possible.