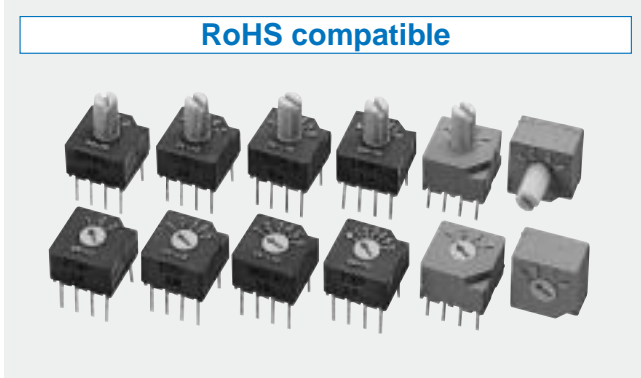


# ROTARY SELECTOR SWITCHES

# SS-10

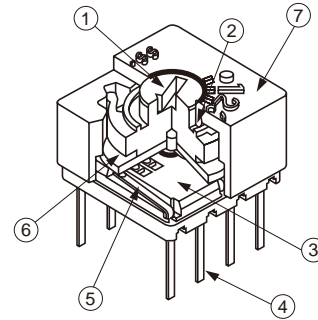
RoHS compatible



## FEATURES

- Lead-free soldering
- Compact-size DIP pin configuration
- Protected against dust and washable after soldering
- Self-cleaning mechanism

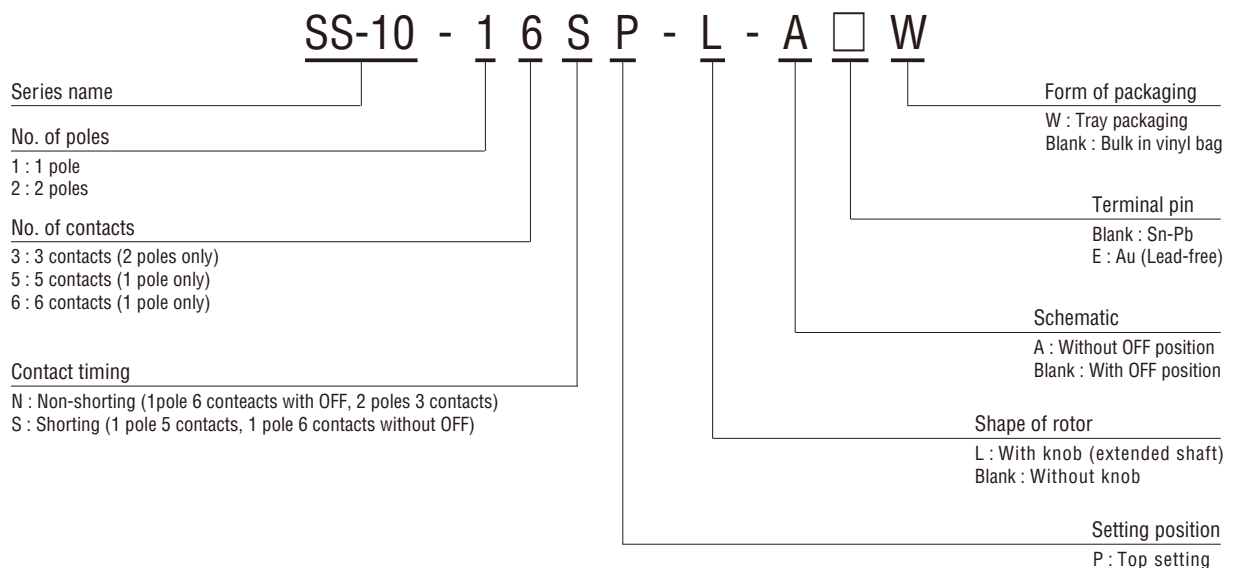
## INTERNAL STRUCTURE SS-10 series



Part name		Material	Flammability
①	Rotor	POM (polyoxymethylene)	UL-94HB
②	“O” ring	Silicone rubber	
③	Base	PBT (Polybutyleneterephthalate)	—
④	Terminal pin	Sn-Pb Copper alloy, Solder-plated (SS-10 series only)	
		Au Copper alloy, Gold-plated	
⑤	Contact	Copper alloy, Gold-plated	
⑥	P.C.B.	Gold-plated epoxy board	
⑦	Housing	PBT (Polybutyleneterephthalate)	UL-94HB

CFCs, Halon, Carbon tetrachloride and designated bromic flame retardant PBBOs and PBBs are not used in our products.

## PART NUMBER DESIGNATION



✳ Please refer to the LIST OF PART NUMBERS when placing orders.

# SS-10 ROTARY SELECTOR SWITCHES

## LIST OF PART NUMBERS

Circuit type	Shape		Form of packaging	Terminal pin	Contact timing		Pieces in package		
					Non-shorting	Shorting			
1 pole 4 contacts	Top setting	Without knob	Tray packaging	Au	S-2050W		50 pcs./tray		
			Vinyl pack	Au	S-2050		25 pcs./pack		
		With knob	Tray packaging	Au	S-2150W		50 pcs./tray		
			Vinyl pack	Au	S-2150		25 pcs./pack		
	Side setting	Without knob	Tray packaging	Au	S-2051W		50 pcs./tray		
			Vinyl pack	Au	S-2051		25 pcs./pack		
		With knob	Tray packaging	Au	S-2151W		50 pcs./tray		
			Vinyl pack	Au	S-2151		25 pcs./pack		
1 pole 5 contacts	Top setting	Without knob	Tray packaging	Sn-Pb		SS-10-15SPW	50 pcs./tray		
				Au (Lead-free)		SS-10-15SPEW	50 pcs./tray		
			Vinyl pack	Sn-Pb		SS-10-15SP	25 pcs./pack		
				Au (Lead-free)		SS-10-15SPE	25 pcs./pack		
			With knob	Tray packaging	Sn-Pb		SS-10-15SP-LW	50 pcs./tray	
					Au (Lead-free)		SS-10-15SP-LEW	50 pcs./tray	
		Vinyl pack		Sn-Pb		SS-10-15SP-L	25 pcs./pack		
				Au (Lead-free)		SS-10-15SP-LE	25 pcs./pack		
		1 pole 6 contacts	With OFF	Without knob	Tray packaging	Sn-Pb		SS-10-16NPW	50 pcs./tray
						Au (Lead-free)		SS-10-16NPEW	50 pcs./tray
					Vinyl pack	Sn-Pb		SS-10-16NP	25 pcs./pack
				With knob	Tray packaging	Sn-Pb		SS-10-16NP-LW	50 pcs./tray
Au (Lead-free)						SS-10-16NP-LEW	50 pcs./tray		
Vinyl pack	Sn-Pb					SS-10-16NP-L	25 pcs./pack		
Without OFF	Without knob		Tray packaging	Sn-Pb		SS-10-16SP-AW	50 pcs./tray		
				Au (Lead-free)		SS-10-16SP-AEW	50 pcs./tray		
			Vinyl pack	Sn-Pb		SS-10-16SP-A	25 pcs./pack		
	With knob		Tray packaging	Sn-Pb		SS-10-16SP-L-AW	50 pcs./tray		
				Au (Lead-free)		SS-10-16SP-L-AEW	50 pcs./tray		
			Vinyl pack	Sn-Pb		SS-10-16SP-L-A	25 pcs./pack		
2 poles 3 contacts	Top setting	Without knob	Tray packaging	Sn-Pb		SS-10-23NPW	50 pcs./tray		
				Au (Lead-free)		SS-10-23NPEW	50 pcs./tray		
			Vinyl pack	Sn-Pb		SS-10-23NP	25 pcs./pack		
		With knob	Tray packaging	Sn-Pb		SS-10-23NP-LW	50 pcs./tray		
				Au (Lead-free)		SS-10-23NP-LEW	50 pcs./tray		
			Vinyl pack	Sn-Pb		SS-10-23NP-L	25 pcs./pack		
			Au (Lead-free)		SS-10-23NP-LE	25 pcs./pack			

☒ : Not manufactured



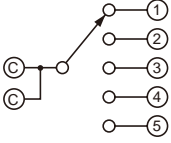
\* : Verify the above part numbers when placing orders.

Tray version can be supplied only in tray nuts.



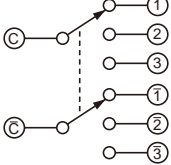
# SS-10 ROTARY SELECTOR SWITCHES

## ■ SCHEMATIC DIAGRAMS



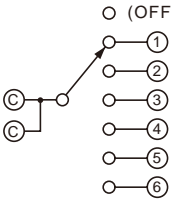
### ● 1 pole 5 contacts

Series	Switching specifications	Schematic
SS-10-15SP SS-10-15SPE SS-10-15SP-L SS-10-15SP-LE	 	



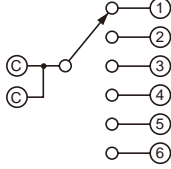
### ● 2 poles 3 contacts

Series	Switching specifications	Schematic
SS-10-23NP SS-10-23NPE SS-10-23NP-L SS-10-23NP-LE	 	



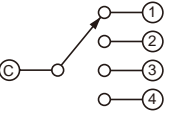
### ● 1 pole 6 contacts (With OFF)

Series	Switching specifications	Schematic
SS-10-16NP SS-10-16NPE SS-10-16NP-L SS-10-16NP-LE	 	

### ● 1 pole 6 contacts (Without OFF)

Series	Switching specifications	Schematic
SS-10-16SP-A SS-10-16SP-AE SS-10-16SP-L-A SS-10-16SP-L-AE	 	

### ● 1 pole 4 contacts (Note 1)

Series	Switching specifications	Schematic
S-2050 S-2051 S-2150 S-2151	 	

Note 1 : Terminal pins of S-2050, S-2051, S-2150 and S-2151 are made from gold-plated.

# SS-10 ROTARY SELECTOR SWITCHES

## ■ TERMINAL CONNECTION / P.C.B. THROUGH HOLE DIMENSIONS (Unit: mm)

	SS-10-15	SS-10-16	SS-10-23	S-2050 S-2150	S-2051 S-2151
Terminal pin layout (Bottom view)					
P.C.B. dimensions (Bottom view)	Dimension is common to SS-10-15, SS-10-16 and SS-10-23 series. 				

## ■ STANDARD SPECIFICATIONS

Circuit type	1 pole 4 contacts 1 pole 5 contacts 1 pole 6 contacts 2 poles 3 contacts
Operating temperature range	-25 ~ 70 °C
Storage temperature range	
Sealing	Washable by "O" ring
Net weight	Approx. 0.84 g (without knob) Approx. 0.94 g (with knob)

## ■ ELECTRICAL CHARACTERISTICS

Contact rating Non-switching Switching Minimum	DC50 V 100 mA DC5 V 100 mA DC20 mV 1 µA
Contact timing	Shorting Non-shorting
Contact resistance	100 mΩ maximum
Insulation resistance	100 MΩ (DC100 V) minimum
Dielectric strength	AC300 V, 60 s

## ■ MECHANICAL CHARACTERISTICS

No. of positions	3, 4, 5, 6
Adjustment torque	40 mN·m {408 gf·cm} maximum
Stopper strength	50 mN·m {510 gf·cm} minimum
Stepping angle	36° (1 pole 4 contacts) 30° (2 poles 3 contacts) 30° (1 pole 5 contacts) 22.5° (1 pole 6 contacts, with OFF) 28° (1 pole 6 contacts, without OFF)
Terminal strength	15 N {1.53 kgf} minimum
Solderability	Sn-Pb : 230 ± 5 °C, 3 s Au : 245 ± 3 °C, 2 ~ 3 s
Soldering heat	Sn-Pb : 260 ± 5 °C, 10 s Au Flow soldering 260 ± 3 °C, 5 ~ 6 s, two times maximum Manual soldering 380 ± 10 °C, 3 ~ 4 s

{ } : Reference only

## ■ ENVIRONMENTAL CHARACTERISTICS

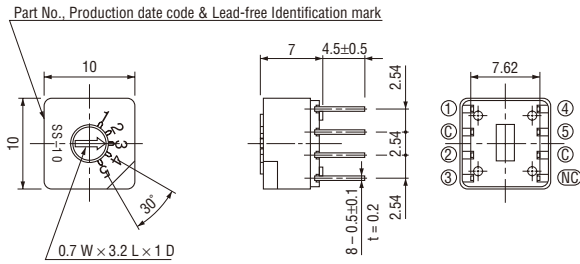
Vibration	Amplitude 1.5 mm <sub>r</sub> Acceleration 98 m/s <sup>2</sup> , 10-500-10 Hz, 3 directions for 2 h each
Shock	490 m/s <sup>2</sup> , 11 ms 6 directions for 3 times each
Humidity (Steady state)	40 °C, Relative humidity 90 ~ 95 %, 240 h
Load life	500 cycles minimum DC5 V, 100 mA
High temperature exposure	70 °C, 240 h
Low temperature exposure	-25 °C, 96 h
Thermal shock	-25 (0.5 h) ~ 70 °C (0.5 h), 5 cycles

# SS-10 ROTARY SELECTOR SWITCHES

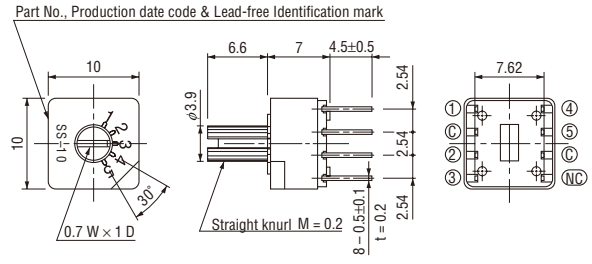
## OUTLINE DIMENSIONS

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

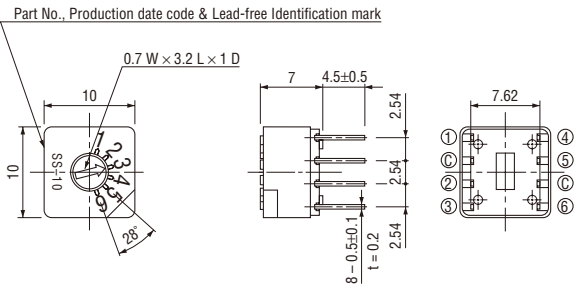
### SS-10-15SP, SS-10-15SPE



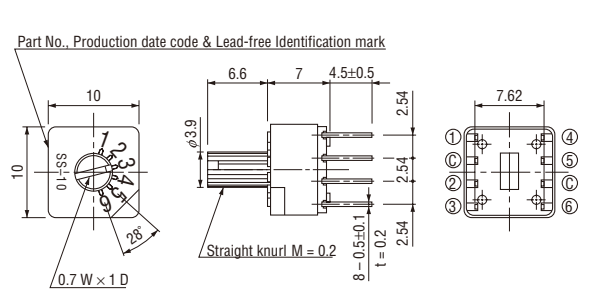
### SS-10-15SP-L, SS-10-15SP-LE



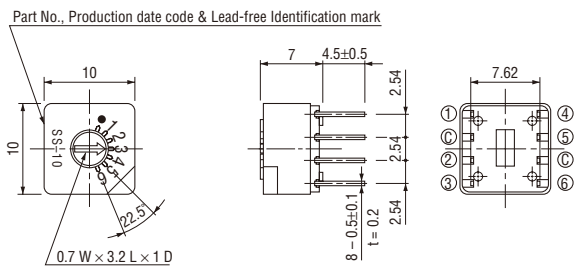
### SS-10-16SP-A, SS-10-16SP-AE



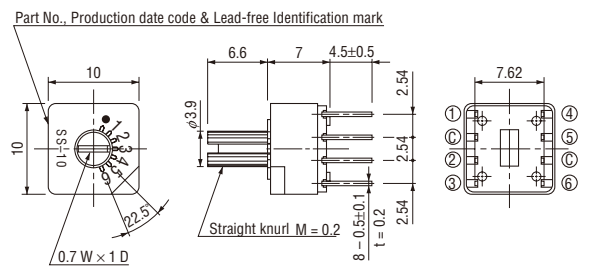
### SS-10-16SP-L-A, SS-10-16SP-L-AE



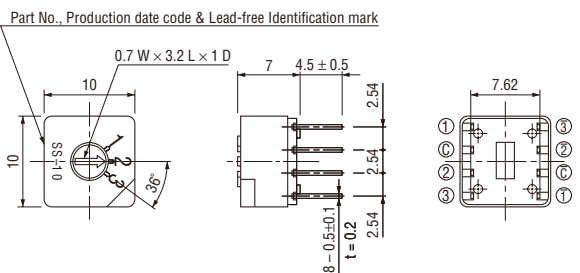
### SS-10-16NP, SS-10-16NPE



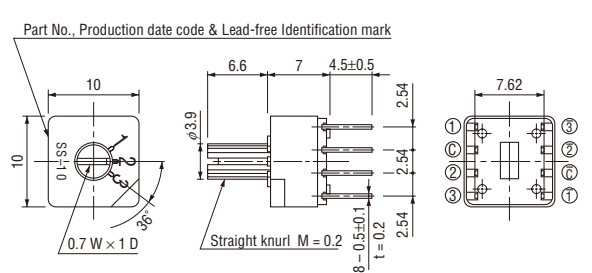
### SS-10-16NP-L, SS-10-16NP-LE



### SS-10-23NP, SS-10-23NPE



### SS-10-23NP-L, SS-10-23NP-LE

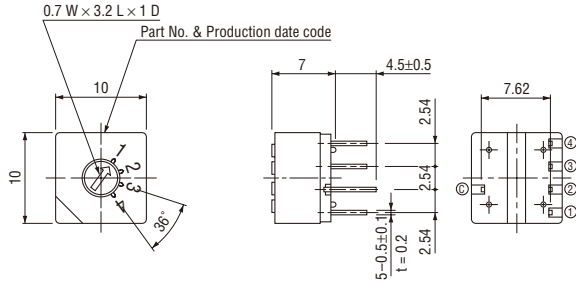


# SS-10 ROTARY SELECTOR SWITCHES

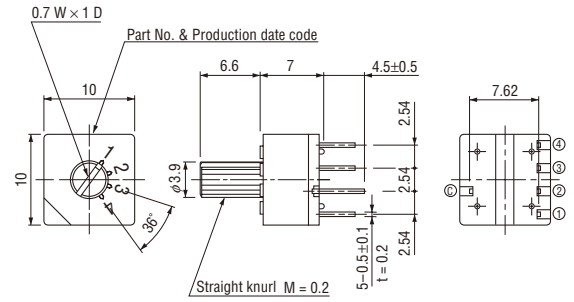
## OUTLINE DIMENSIONS

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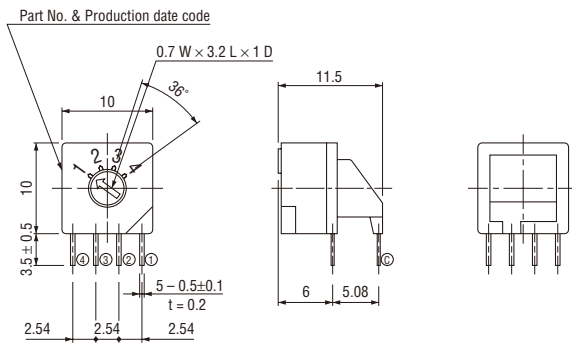
### ● S-2050



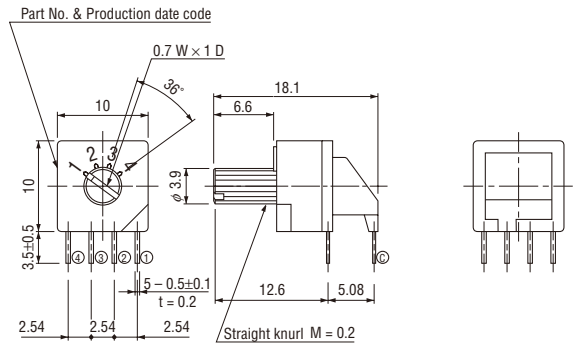
### ● S-2150



### ● S-2051



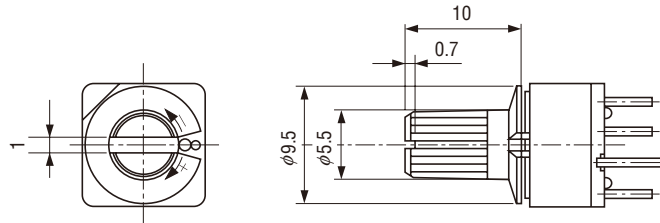
### ● S-2151



**SS-10**  
**ROTARY SELECTOR SWITCHES**

■ **LARGE KNOB 'K1'**

(Unit: mm)



The large knob is common to S-1000A, S-2000A, SA-5000, and SS-10 series.

■ **PACKAGING SPECIFICATIONS**

<Tray packaging specifications>

- Tray version is packaged in 50 pcs. per tray. Orders will be accepted for units of 50 pcs., i. e., 50, 100, 150 pcs. etc.
- Tray version is boxed with 10 trays.

<Vinyl pack specifications>

- The smallest unit of bulk in vinyl bag packaging is 10 pcs. per pack.  
Orders will be accepted for unit of minimum 10 pcs., i.e., 10, 20, 30 pcs., etc.
- Boxing of bulk in vinyl bags is performed with 25 pcs. (standard 50 pcs.) per box.

<Note> : The switch with a large knob for manual adjustment is available as a semi-standard item.