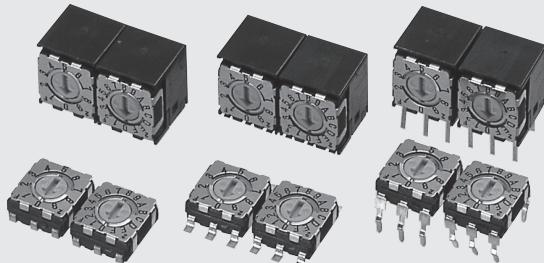


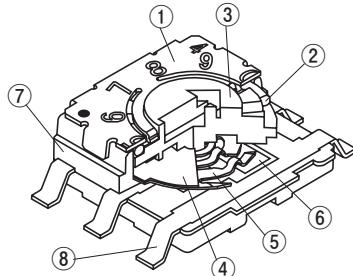
## ROTARY CODED SWITCHES (SMD)

# S-7000

### RoHS compliant



### INTERNAL STRUCTURE



Part name	Material
(1) Cover	Stainless steel (SUS 304)
(2) "O" ring	Silicone rubber
(3) Rotor	Polyphenylenesulfide
(4) Spacer	Stainless steel (SUS 304)
(5) Slider contact	Copper alloy, Gold-plated
(6) Fixed contact	
(7) Housing	Epoxy
(8) Terminal pin	Copper alloy, Gold-plated

### ■ FEATURES

- RoHS compliant
- Low profile of 2.9 mm
- Wide variety (top or side setting, 6, 10 or 16 positions, J-hook, gull wing or through hole pins) to choose from
- Washable
- Resin materials are UL Recognized 94V-0 or 94V-1 equivalent

### ■ PART NUMBER DESIGNATION

S - 7 0 1 0 E T A

Series name

Shape of rotor

0 : Without knob

Code format

1 : 10 positions, real code  
3 : 10 positions, complementary code  
6 : 6 positions, real code  
5 : 16 positions, real code  
7 : 16 positions, complementary code

Setting position

0 : Top setting  
1 : Side setting  
(Except for 6 positions type)

Shape of terminal

A : J-hook  
B : Gull wing  
C : Through hole pins  
(Except for 6 positions type)

Form of packaging

T : Taping (Reel)  
W : Tray packaging (Through hole pins only)  
Blank : Bulk in plastic bag

Terminal pin

E : Au (Lead-free)

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

# S-7000

## ROTARY CODED SWITCHES (SMD)

### ■ CODE FORMAT

			16 positions															
			10 positions										6 positions					
			Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
Code	Real code	8										●	●	●	●	●	●	●
		4					●	●	●	●					●	●	●	●
		2		●	●					●	●			●	●		●	●
		1	●	●		●		●		●	●		●	●		●		●
	Complementary code	8	●	●	●	●	●	●	●	●								
		4	●	●	●	●	●					●	●	●	●			
		2	●	●		●	●	●	●		●	●	●		●	●	●	
		1	●		●		●		●		●		●					

● ...Contact closed

### ■ LIST OF PART NUMBERS

Setting position	Shape of terminal	Form of packaging	Binary coded hexal	Binary coded decimal			Binary coded hexadecimal		Packaging quantity
			Real code	Real code	Complementary code	Real code	Complementary code	Real code	
Top setting	A J-hook	Taping	S-7060ETA	S-7010ETA	S-7030ETA	S-7050ETA	S-7070ETA	S-7050ETA	500 pcs. / reel
		Plastic bag	S-7060EA	S-7010EA	S-7030EA	S-7050EA	S-7070EA	S-7050EA	50 pcs. / pack
	B Gull wing	Taping	S-7060ETB	S-7010ETB	S-7030ETB	S-7050ETB	S-7070ETB	S-7050ETB	500 pcs. / reel
		Plastic bag	S-7060EB	S-7010EB	S-7030EB	S-7050EB	S-7070EB	S-7050EB	50 pcs. / pack
	C Through hole pin	Tray packaging		S-7010EWC	S-7030EWC	S-7050EWC	S-7070EWC	S-7050EWC	50 pcs. / tray
		Plastic bag		S-7010EC	S-7030EC	S-7050EC	S-7070EC	S-7050EC	50 pcs. / pack
Side setting	A J-hook	Taping		⊖ S-7011ETA	⊖ S-7031ETA	⊖ S-7051ETA	⊖ S-7071ETA	⊖ S-7051ETA	500 pcs. / reel
		Plastic bag		⊖ S-7011EA	⊖ S-7031EA	⊖ S-7051EA	⊖ S-7071EA	⊖ S-7071EA	50 pcs. / pack
	B Gull wing	Taping		⊖ S-7011ETB	⊖ S-7031ETB	⊖ S-7051ETB	⊖ S-7071ETB	⊖ S-7071ETB	500 pcs. / reel
		Plastic bag		⊖ S-7011EB	⊖ S-7031EB	⊖ S-7051EB	⊖ S-7071EB	⊖ S-7071EB	50 pcs. / pack
	C Through hole pin	Tray packaging		⊖ S-7011EWC	⊖ S-7031EWC	⊖ S-7051EWC	⊖ S-7071EWC	⊖ S-7071EWC	50 pcs. / tray
		Plastic bag		⊖ S-7011EC	⊖ S-7031EC	⊖ S-7051EC	⊖ S-7071EC	⊖ S-7071EC	50 pcs. / pack

□ : Not manufactured

※ Verify the above part numbers when placing orders.

Taping and tray version can be supplied only in reel or tray unit.

The products indicated by ⊖ mark are manufactured upon receipt of order basis.

# S-7000

## ROTARY CODED SWITCHES (SMD)

### ■ STANDARD SPECIFICATIONS

Circuit type	BCD (Real code, complementary code) BCH (Real code, complementary code)
Operating temp. range	-40 ~ 85 °C
Storage temp. range	
Sealing	Washable by "O" ring ※ Please refer to page 149,150
Net weight	Approx. 0.26 g (A or B type in top setting) Approx. 0.28 g (C type in top setting) Approx. 0.62 g (Side setting type)

### ■ ELECTRICAL CHARACTERISTICS

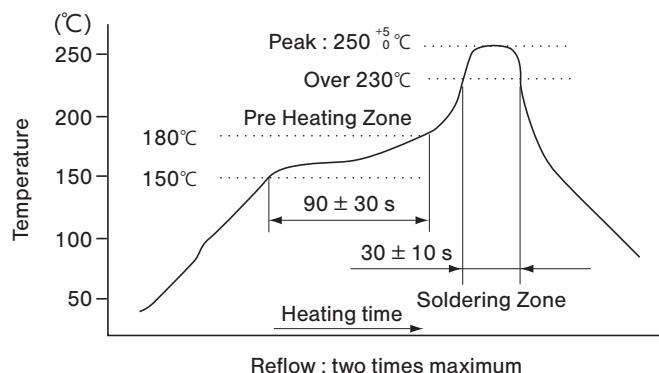
Contact rating Non-switching Switching Minimum	DC50 V 100 mA DC5 V 100 mA DC20 mV 1 $\mu$ A
Contact resistance	100 m $\Omega$ maximum
Insulation resistance	100 M $\Omega$ (DC100 V) minimum
Dielectric strength	AC250 V, 60 s

### ■ MECHANICAL CHARACTERISTICS

No. of positions	6, 10, 16
Adjustment torque	20 mN·m {204 gf·cm} maximum
Stepping angle	60° (6 positions) 36° (10 positions) 22.5° (16 positions)
Solderability	245 ± 3 °C, 2 ~ 3 s
Soldering heat	Reflow : 255 °C (Peak temperature) Please refer to the profile below) Flow : 260 ± 3 °C, 5 ~ 6 s, two times maximum Manual soldering : 350 ± 10 °C, 3 ~ 4 s
Shear (adhesion)	5 N {0.51 kgf} 10 s
Substrate bending	Width 90 mm, bend 3 mm, 5 s, 1 time
Pull-off strength	5 N {0.51 kgf} 10 s

{ } : Reference only

### ⟨Reflow profile for soldering heat evaluation⟩

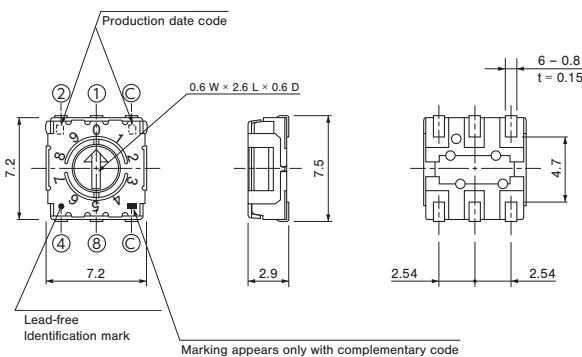


# S-7000

## ROTARY CODED SWITCHES (SMD)

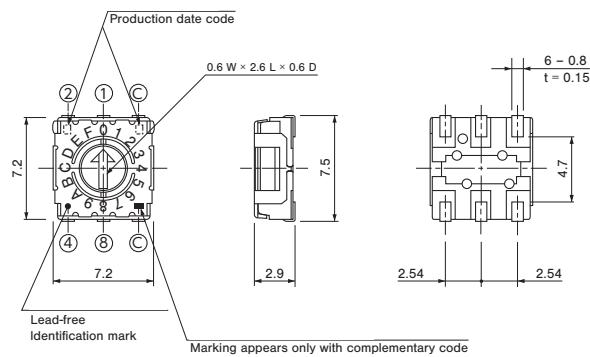
### ■ OUTLINE DIMENSIONS

- S-7010EA (Real code)
- S-7030EA (Complementary code)

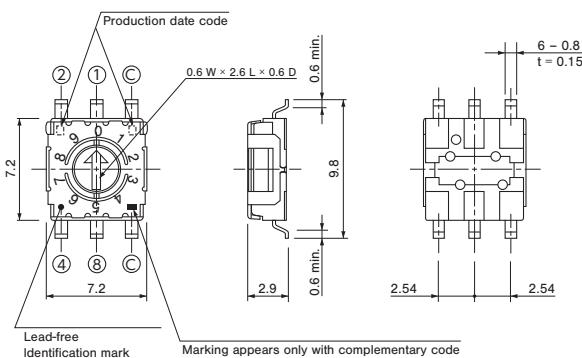


Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

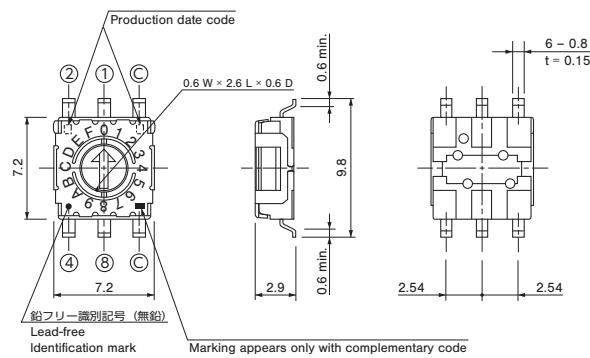
- S-7050EA (Real code)
- S-7070EA (Complementary code)



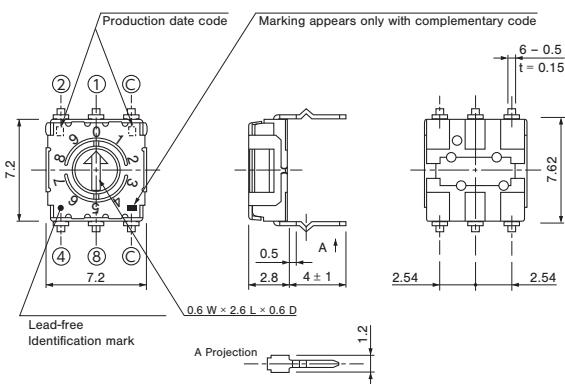
- S-7010EB (Real code)
- S-7030EB (Complementary code)



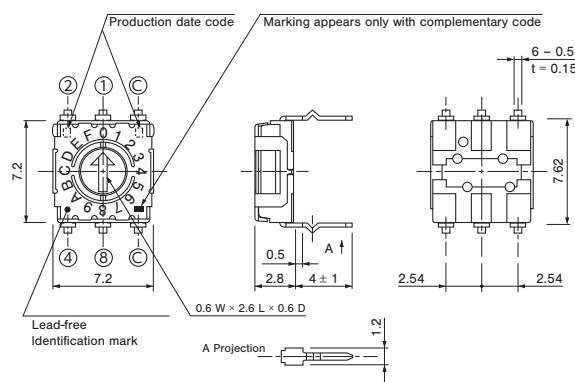
- S-7050EB (Real code)
- S-7070EB (Complementary code)



- S-7010EC (Real code)
- S-7030EC (Complementary code)



- S-7050EC (Real code)
- S-7070EC (Complementary code)

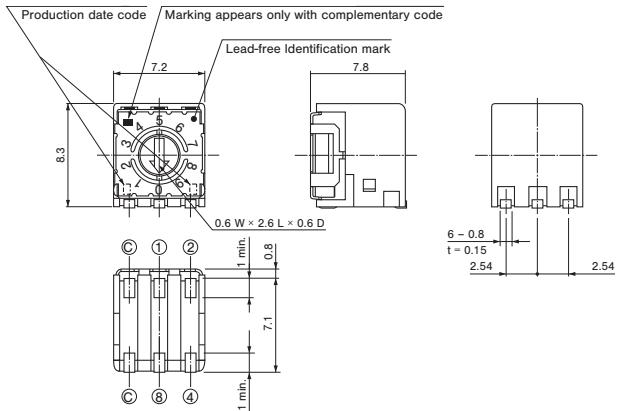


# S-7000

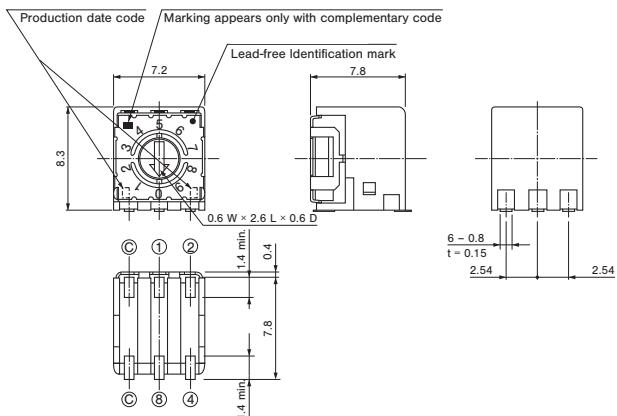
## ROTARY CODED SWITCHES (SMD)

### ■ OUTLINE DIMENSIONS

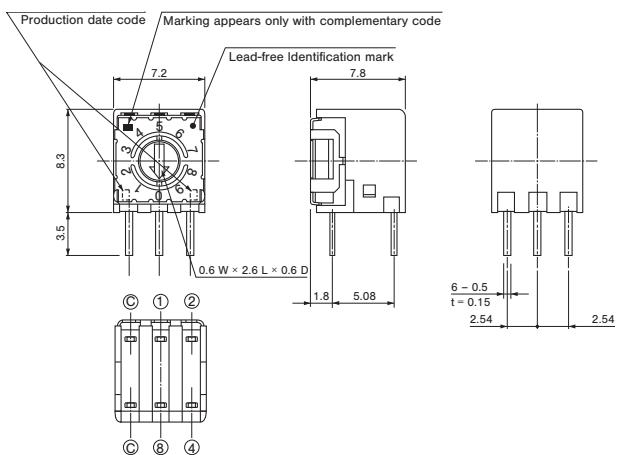
- S-7011EA (Real code)
- S-7031EA (Complementary code)



- S-7011EB (Real code)
- S-7031EB (Complementary code)

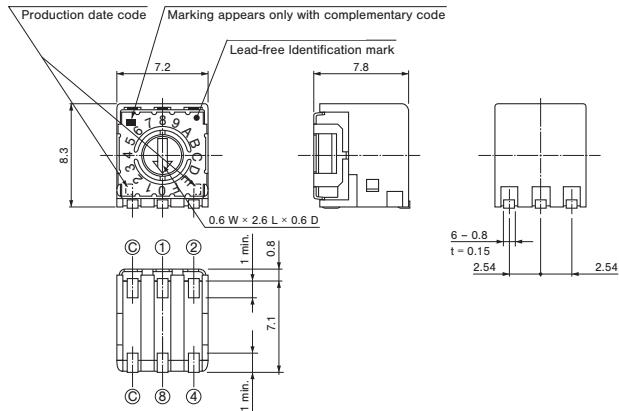


- S-7011EC (Real code)
- S-7031EC (Complementary code)

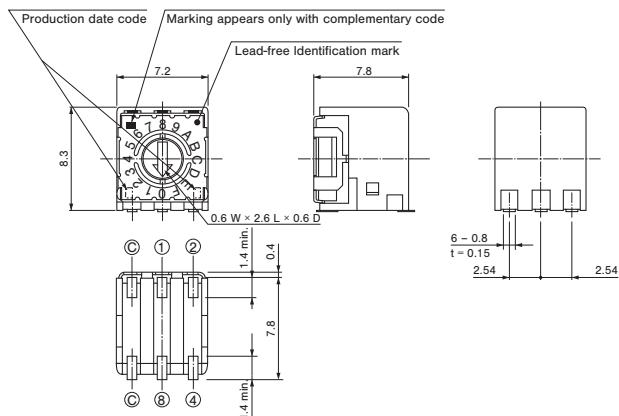


Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

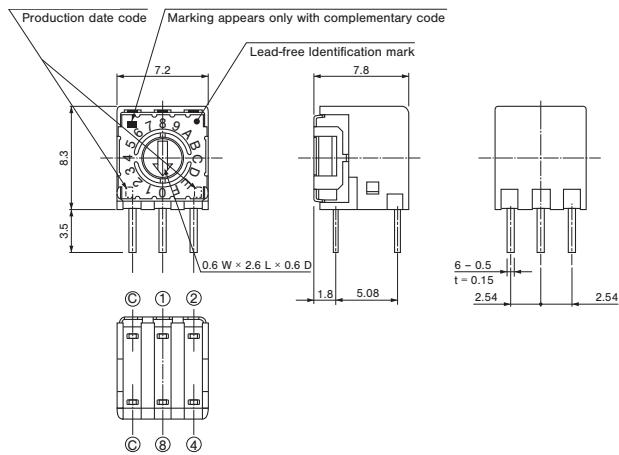
- S-7051EA (Real code)
- S-7071EA (Complementary code)



- S-7051EB (Real code)
- S-7071EB (Complementary code)



- S-7051EC (Real code)
- S-7071EC (Complementary code)

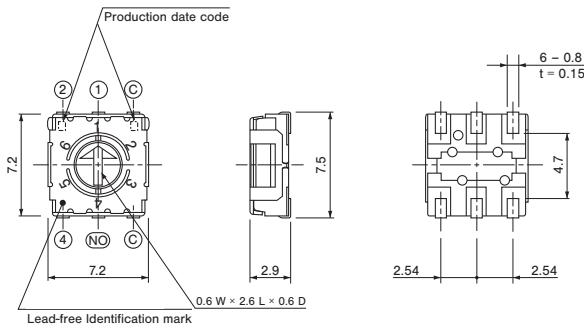


# S-7000

## ROTARY CODED SWITCHES (SMD)

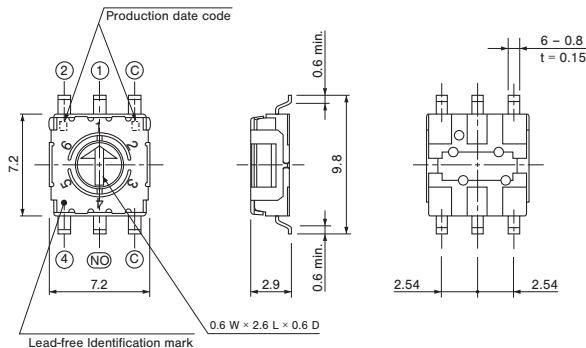
### ■ OUTLINE DIMENSIONS

#### ● S-7060EA (Real code)



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

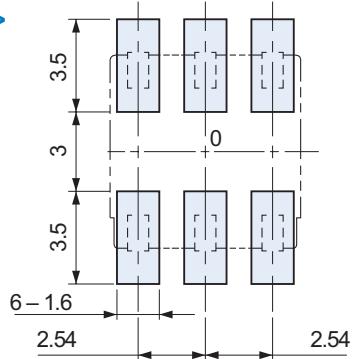
#### ● S-7060EB (Real code)



### ■ RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

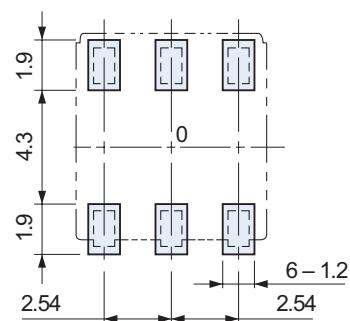
#### <Top setting>

##### ● A type

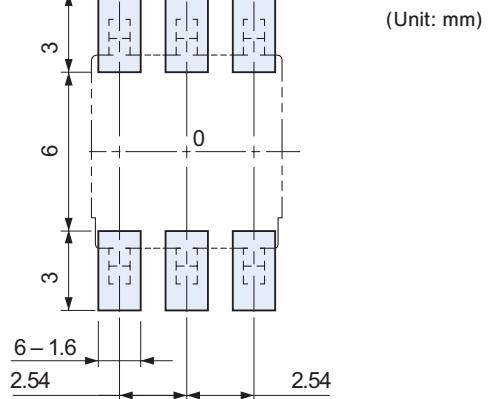


#### <Side setting>

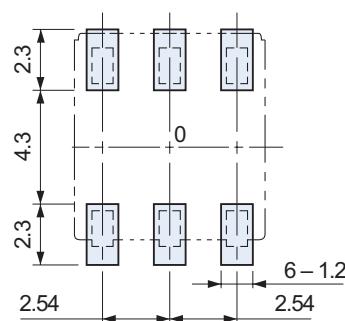
##### ● A type



##### ● B type



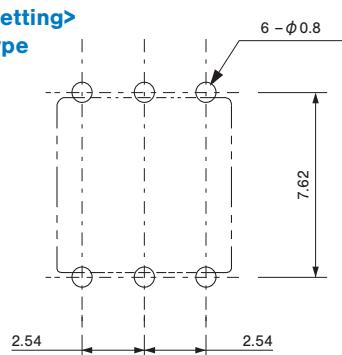
##### ● B type



### ■ SIZE OF P.C.B. PROCESSING

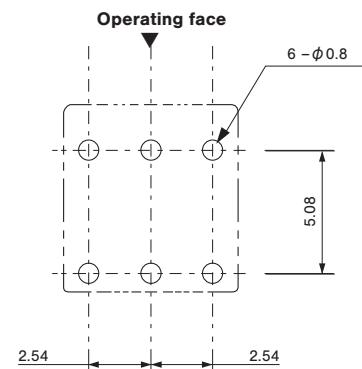
#### <Top setting>

##### ● C type



#### <Side setting>

##### ● C type



# **S-7000** **ROTARY CODED SWITCHES (SMD)**

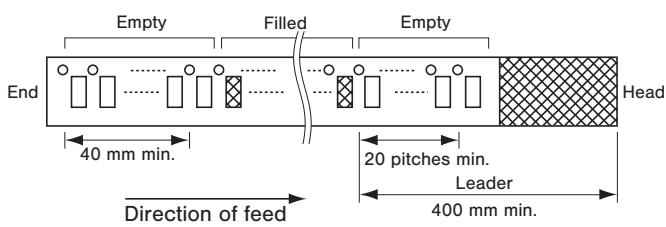
## ■ PACKAGING SPECIFICATIONS

## **<Taping packaging specifications>**

- Taping version is packaged in 500 pcs. per reel. Orders will be accepted for units of 500 pcs., i.e., 500, 1000, 1500, pcs., etc.
- Taping version is boxed with one reel (500 pcs.).

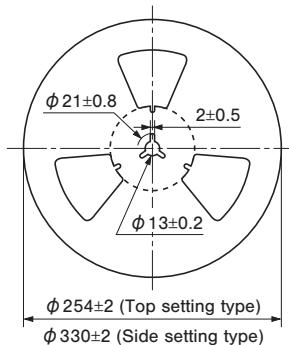
Maximum number of consecutive missing pieces = 2  
Leader length and reel dimension are shown in the diagrams below:

## ● Embossed tape dimensions



## ● Reel dimensions

(Conforms to JIS C 0806-3)  
(In accordance with EIAJ ET-7200A)



(Unit: mm)

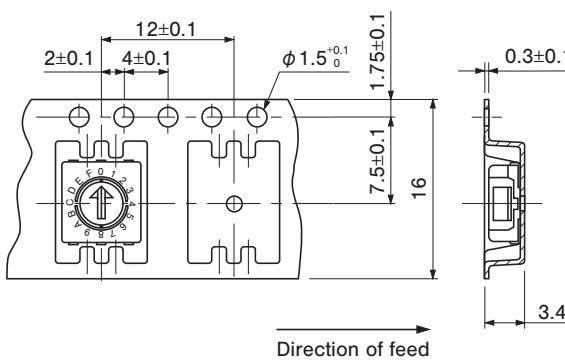
# S-7000

## ROTARY CODED SWITCHES (SMD)

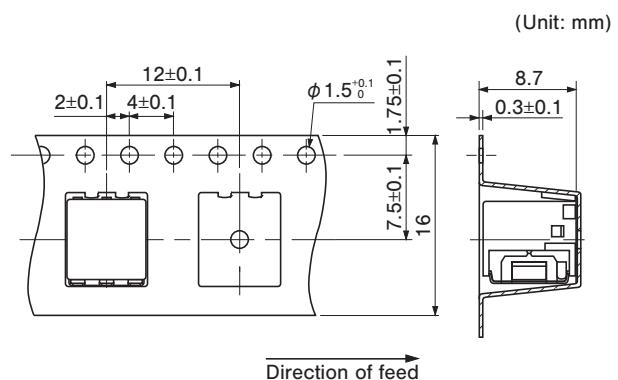
(Conforms to JIS C 0806-3)

### ● S-70□□ETA

#### <Top setting>

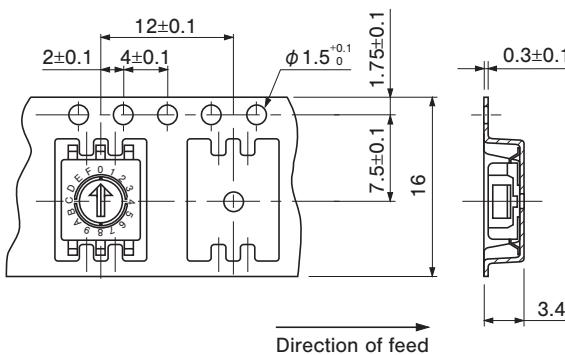


#### <Side setting>

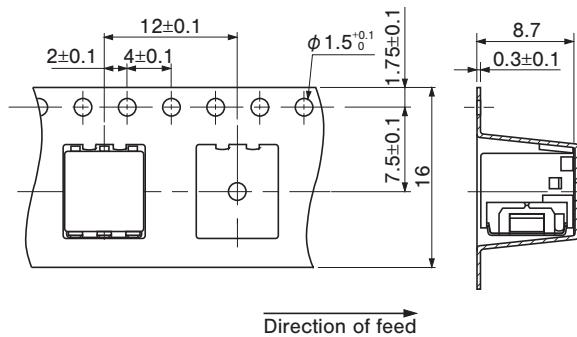


### ● S-70□□ETB

#### <Top setting>



#### <Side setting>



#### <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.

#### <Bulk pack specifications>

- The smallest unit of bulk pack in a plastic bag 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 pack in a plastic bag is performed with 50 pcs. (Top setting type is 200 pcs., side setting type is 100 pcs.) per box.