

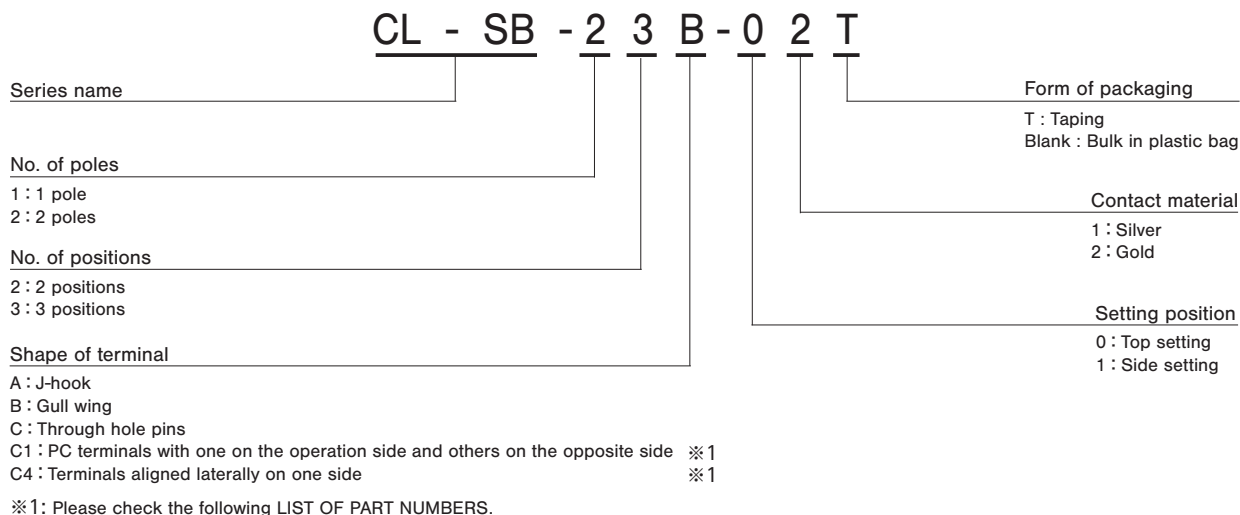
**INTERNAL STRUCTURE**

Part name	Material	Flammability
① Cover	Stainless steel (SUS 304)	—
② Slider	Polyamido	UL94V-0
③ Housing	Polyphenylenesulphide	UL94V-0
④ Moving contact	Copper alloy, gold or silver plate	—
⑤ Fixed contact	Copper alloy, gold or silver plate	—
⑥ Terminal pin	Copper alloy, gold or silver plate	—

## FEATURES

- Wide variety  
(circuit composition, operating direction, terminal shape: J-hook, Gull wing, Through hole pins)
- Standardization of the silver contacts as well as gold contacts
- Stroke is 2mm
- Using heat-resistant resin to support reflow soldering mounting
- Adopted Twin-contacts mechanism

## PART NUMBER DESIGNATION



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

### LIST OF PART NUMBERS

Setting position	No. of poles	No. of positions	Contact material		Shape of terminal	Form of packaging	Pieces in package		
			Silver	Gold					
Top setting	1	2	CL-SB-12A-01T	CL-SB-12A-02T	A(J-hook)	Taping	500pcs. / reel		
			CL-SB-12A-01	CL-SB-12A-02		Plastic bag	50pcs. / pack		
			CL-SB-12B-01T	CL-SB-12B-02T	B(Gull wing)	Taping	500pcs. / reel		
		CL-SB-12B-01	CL-SB-12B-02	Plastic bag		50pcs. / pack			
		CL-SB-12C-01	CL-SB-12C-02	C(Through hole pins)	Plastic bag	50pcs. / pack			
		3	CL-SB-13A-01T	CL-SB-13A-02T	A(J-hook)	Taping	500pcs. / reel		
						CL-SB-13A-01	CL-SB-13A-02	Plastic bag	50pcs. / pack
			CL-SB-13B-01T	CL-SB-13B-02T	B(Gull wing)	Taping	500pcs. / reel		
						CL-SB-13B-01	CL-SB-13B-02	Plastic bag	50pcs. / pack
	CL-SB-13C-01		CL-SB-13C-02	C(Through hole pins)	Plastic bag	50pcs. / pack			
	2		2	CL-SB-22A-01T	CL-SB-22A-02T	A(J-hook)	Taping	500pcs. / reel	
		CL-SB-22A-01					CL-SB-22A-02	Plastic bag	50pcs. / pack
		CL-SB-22B-01T		CL-SB-22B-02T	B(Gull wing)	Taping	500pcs. / reel		
						CL-SB-22B-01	CL-SB-22B-02	Plastic bag	50pcs. / pack
		CL-SB-22C-01		CL-SB-22C-02	C(Through hole pins)	Plastic bag	50pcs. / pack		
		3	CL-SB-23A-01T	CL-SB-23A-02T	A(J-hook)	Taping	500pcs. / reel		
						CL-SB-23A-01	CL-SB-23A-02	Plastic bag	50pcs. / pack
			CL-SB-23B-01T	CL-SB-23B-02T	B(Gull wing)	Taping	500pcs. / reel		
CL-SB-23B-01						CL-SB-23B-02	Plastic bag	50pcs. / pack	
CL-SB-23C-01	CL-SB-23C-02	C(Through hole pins)	Plastic bag	50pcs. / pack					
Side Setting	1	2	CL-SB-12A-11T	CL-SB-12A-12T	A(J-hook)	Taping	500pcs. / reel		
			CL-SB-12A-11	CL-SB-12A-12		Plastic bag	50pcs. / pack		
			CL-SB-12B-11T	CL-SB-12B-12T	B(Gull wing)	Taping	500pcs. / reel		
						CL-SB-12B-11	CL-SB-12B-12	Plastic bag	50pcs. / pack
		CL-SB-12C-11	CL-SB-12C-12	C(Through hole pins)	Plastic bag	50pcs. / pack			
		3	CL-SB-13A-11T	CL-SB-13A-12T	A(J-hook)	Taping	500pc s. / reel		
						CL-SB-13A-11	CL-SB-13A-12	Plastic bag	50pcs. / pack
			CL-SB-13B-11T	CL-SB-13B-12T	B(Gull wing)	Taping	500pcs. / reel		
						CL-SB-13B-11	CL-SB-13B-12	Plastic bag	50pcs. / pack
			CL-SB-13C-11	CL-SB-13C-12	C(Through hole pins)	Plastic bag	50pcs. / pack		
			2	2	CL-SB-22A-11T	CL-SB-22A-12T	A(J-hook)	Taping	500pcs. / reel
								CL-SB-22A-11	CL-SB-22A-12
	CL-SB-22B-11T				CL-SB-22B-12T	B(Gull wing)	Taping	500pcs. / reel	
		CL-SB-22B-11					CL-SB-22B-12	Plastic bag	50pcs. / pack
	CL-SB-22C-11	CL-SB-22C-12			C(Through hole pins)	Plastic bag	50pcs. / pack		
	3	CL-SB-23A-11T			CL-SB-23A-12T	A(J-hook)	Taping	500pcs. / reel	
				CL-SB-23A-11			CL-SB-23A-12	Plastic bag	50pcs. / pack
		CL-SB-23B-11T		CL-SB-23B-12T	B(Gull wing)	Taping	500pcs. / reel		
						CL-SB-23B-11	CL-SB-23B-12	Plastic bag	50pcs. / pack
		CL-SB-23C-11		CL-SB-23C-12	C(Through hole pins)	Plastic bag	50pcs. / pack		
		1		2	CL-SB-12C1-11	—	C1(Through hole pins)	Plastic bag	50pcs. / pack
	CL-SB-12C4-11				—	C4(Through hole pins)	Plastic bag	50pcs. / pack	

※Verify the above part numbers when placing orders.  
Taping version can be supplied only in reel unit.

# CL-SB

## SLIDE SWITCHES

### STANDARD SPECIFICATIONS

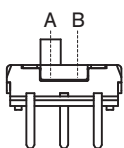
Operating temperature range	-40 ~ 85 °C
Storage temperature range	
Sealing	Non- Washable
Net weight	0.21 g (CL-SB-12 <sup>3</sup> -0 <sup>*</sup> ) 0.21 g (CL-SB-12 <sup>3</sup> -1 <sup>*</sup> ) 0.22 g (CL-SB-22 <sup>3</sup> -0 <sup>*</sup> ) 0.23 g (CL-SB-22 <sup>3</sup> -1 <sup>*</sup> ) 0.26 g (CL-SB-13 <sup>3</sup> -0 <sup>*</sup> ) 0.27 g (CL-SB-13 <sup>3</sup> -1 <sup>*</sup> ) 0.28 g (CL-SB-23 <sup>3</sup> -0 <sup>*</sup> ) 0.29 g (CL-SB-23 <sup>3</sup> -1 <sup>*</sup> ) 0.21 g (CL-SB-12C1-11) 0.19 g (CL-SB-12C4-11)

### MECHANICAL CHARACTERISTICS

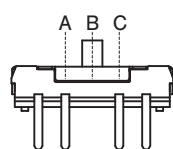
No. of positions	2, 3				
Stroke	2 mm				
Operation force	<table border="1"> <tr> <td>2 Contacts (CL-SB-*2*-*<sup>*</sup>)</td> <td>A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf}</td> </tr> <tr> <td>3 Contacts (CL-SB-*3*-*<sup>*</sup>)</td> <td>A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}</td> </tr> </table>	2 Contacts (CL-SB-*2*-* <sup>*</sup> )	A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf}	3 Contacts (CL-SB-*3*-* <sup>*</sup> )	A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}
2 Contacts (CL-SB-*2*-* <sup>*</sup> )	A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf}				
3 Contacts (CL-SB-*3*-* <sup>*</sup> )	A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}				
Stop strength	20 N {2.04 kgf} 15 s				
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  Manual soldering : 350 ± 10 °C, 3 ~ 4 s				
Shear	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} 10s				

{ } : Reference only

※ 1



※ 2



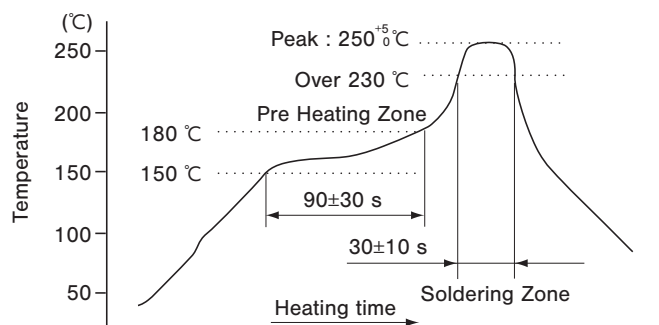
### ELECTRICAL CHARACTERISTICS

Contact rating	Non-switching DC50 V 200 mA Switching DC12 V 200 mA Minimum DC20 mV 1 μA (Gold contacts) DC5 V 10 mA (Silver contacts)	
Contact timing	Non-shorting	
Contact resistance	70mΩ maximum (Gold contacts) 50mΩ maximum (Silver contacts)	1.5 mA 1 kHz 20 mV maximum
Insulation resistance	100 MΩ minimum (DC500 V)	
Dielectric strength	AC500 V, 60 s	

### ENVIRONMENTAL CHARACTERISTICS

Vibration	(Amplitude) 1.5 mm or (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
Load life	10000 cycles, DC12 ± 0.5V, 200 ± 10mA
Humidity	40 °C, Relative humidity 90 ~ 95 %, 240 h, No load
High temperature exposure	85 °C, 96 h, No load
Low temperature exposure	-40 °C, 96 h, No load
Thermal shock	-40 (0.5 h) - 85 °C ( 0.5 h ), 5 cycles

### Reflow profile for soldering heat evaluation



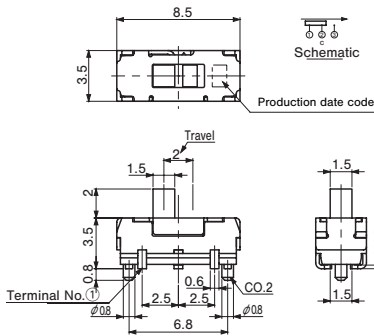
Reflow : two times maximum

# CL-SB SLIDE SWITCHES

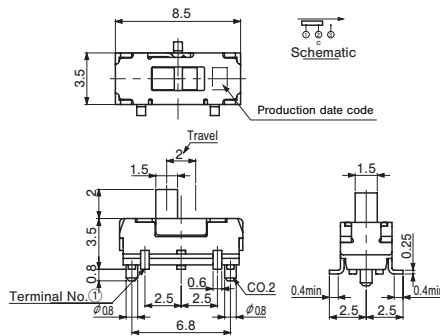
## OUTLINE DIMESIONS

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

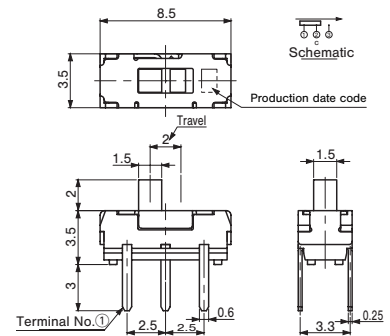
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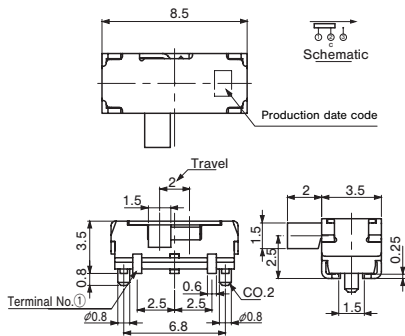
- CL-SB-12B-01
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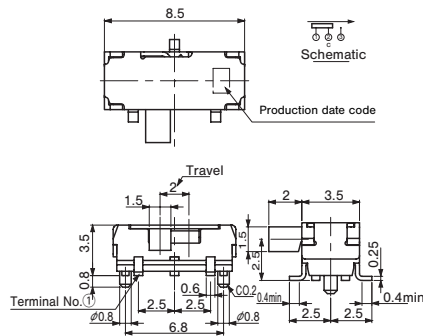
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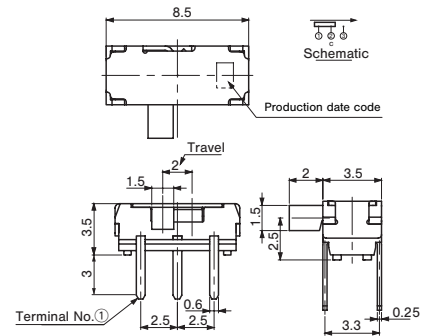
- CL-SB-12A-11
- CL-SB-12A-12



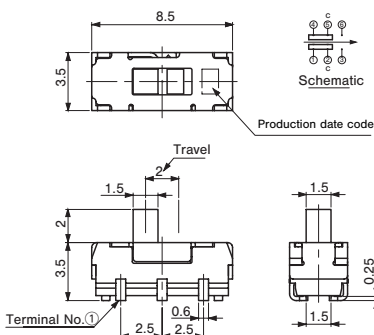
- CL-SB-12B-11
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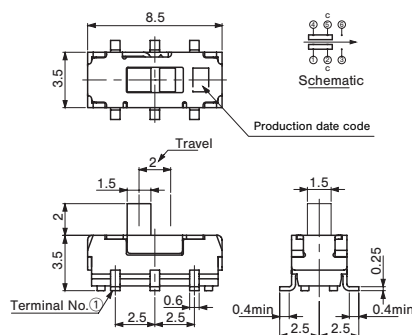
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- CL-SB-12C-12



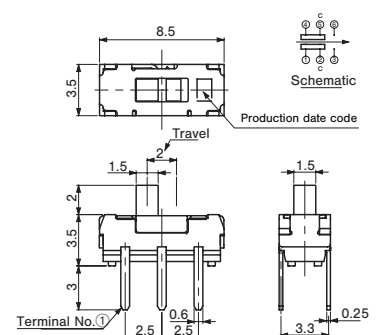
- CL-SB-22A-01
- CL-SB-22A-02



- CL-SB-22B-01
- CL-SB-22B-02



- CL-SB-22C-01
- CL-SB-22C-02



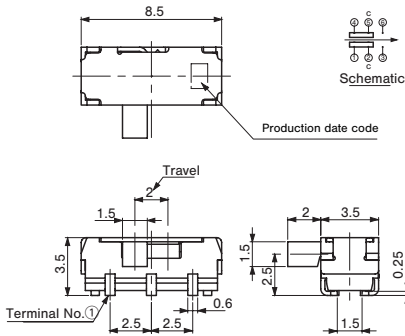
# CL-SB

## SLIDE SWITCHES

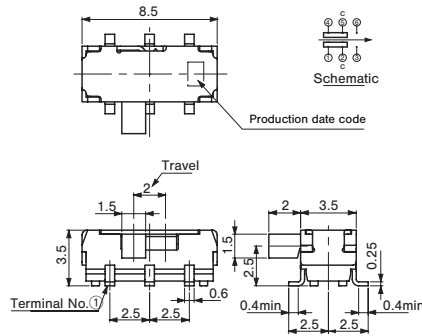
### OUTLINE DIMENSIONS

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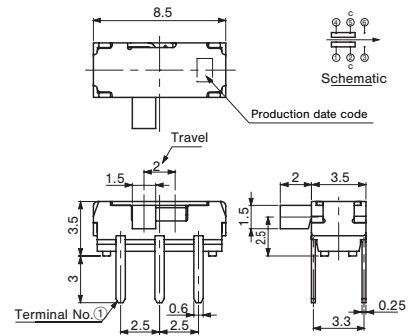
- CL-SB-22A-11
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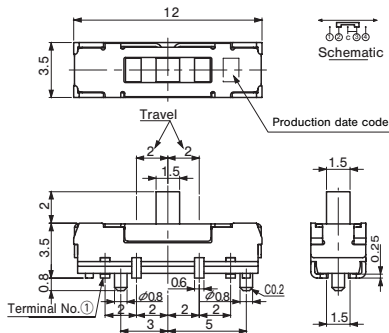
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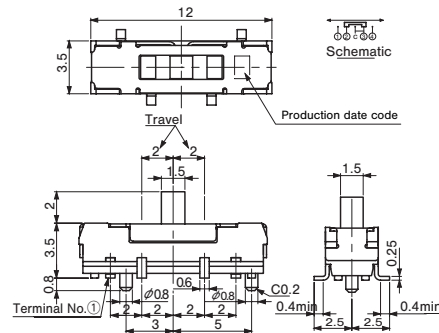
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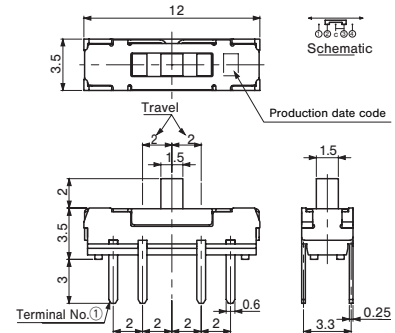
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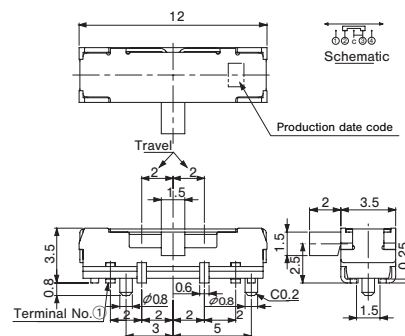
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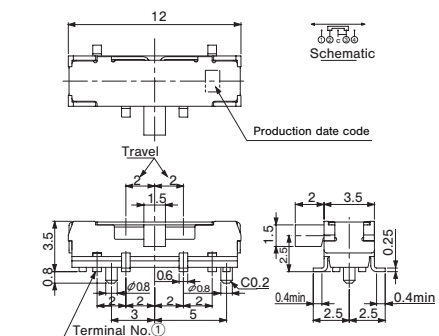
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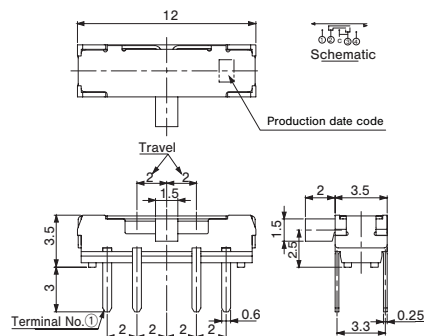
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- CL-SB-13A-12



- CL-SB-13B-11
- CL-SB-13B-12

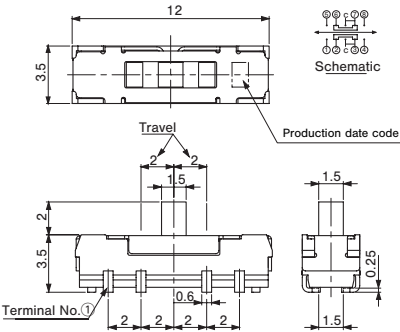


- CL-SB-13C-11
- CL-SB-13C-12

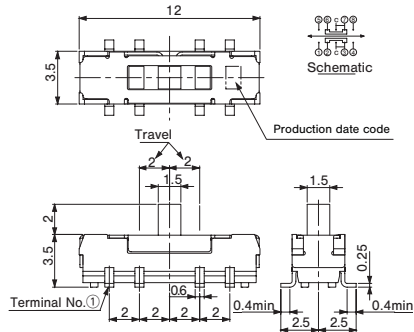


# CL-SB SLIDE SWITCHES

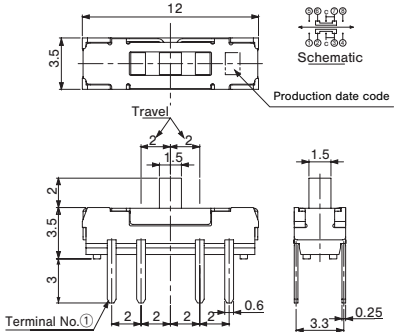
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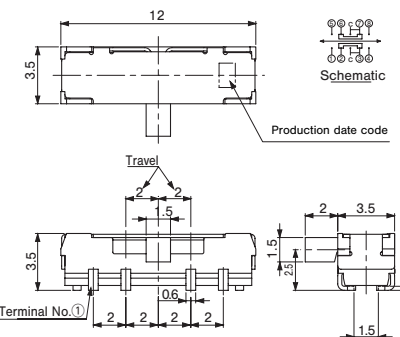
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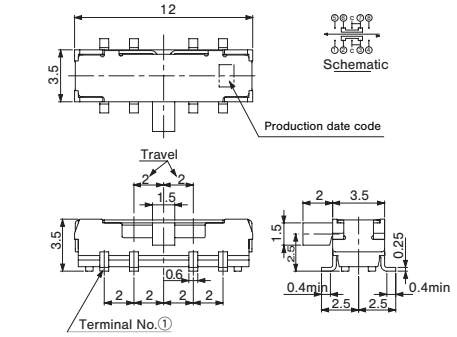
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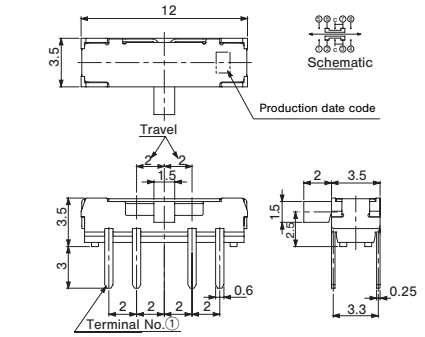
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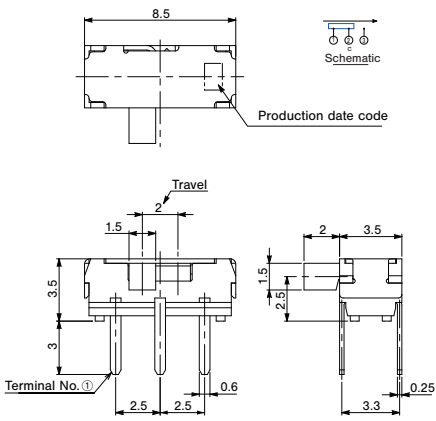
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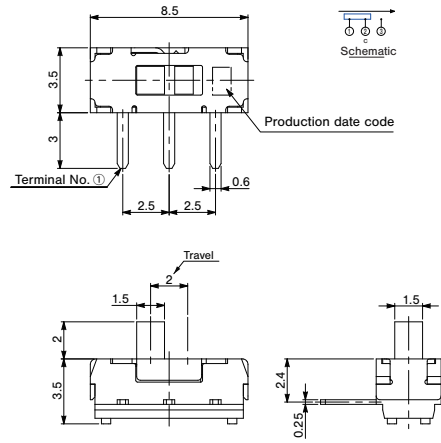
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- CL-SB-23C-12



- CL-SB-12C1-11



- CL-SB-12C4-11



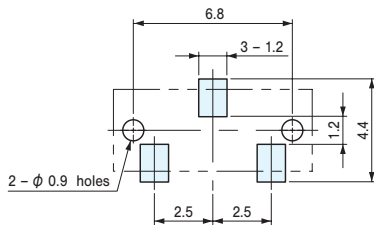
# CL-SB

## SLIDE SWITCHES

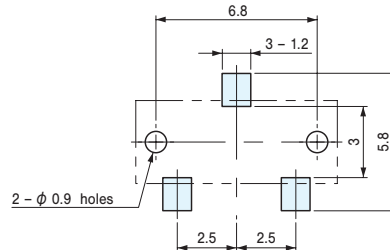
### RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit:mm)

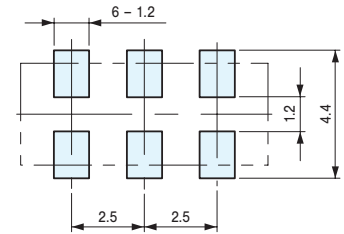
#### CL-SB-12A-□□



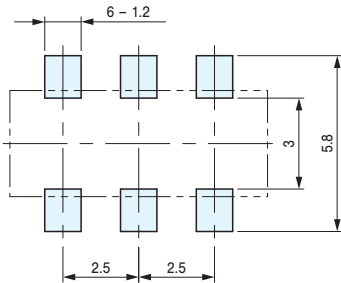
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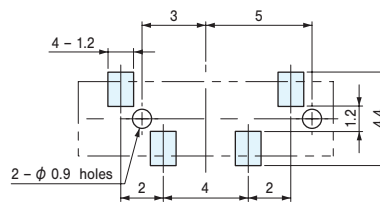
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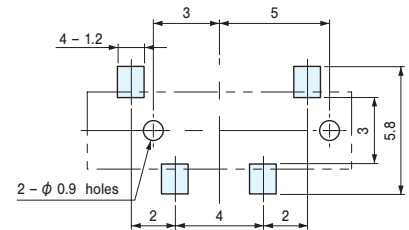
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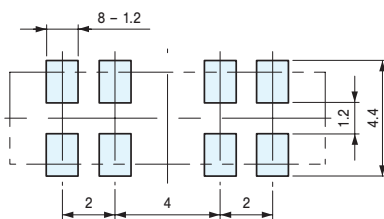
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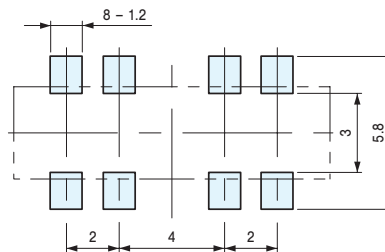
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#### CL-SB-23A-□□



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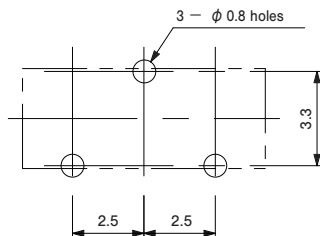


### SIZE OF P.C.B. PROCESSING

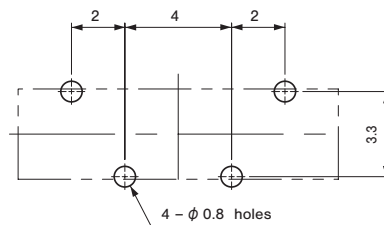
(Unit: mm)

#### CL-SB-12C-□□

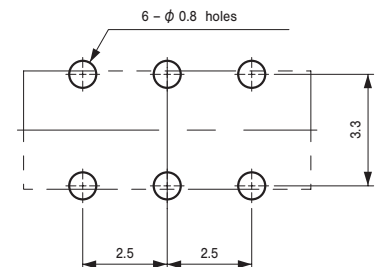
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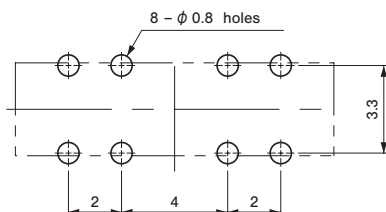
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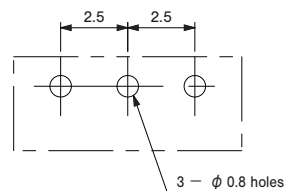
#### CL-SB-22C-□□



#### CL-SB-23C-□□



#### CL-SB-12C4-11



## PACKAGING SPECIFICATIONS

### <Bulk pack specifications>

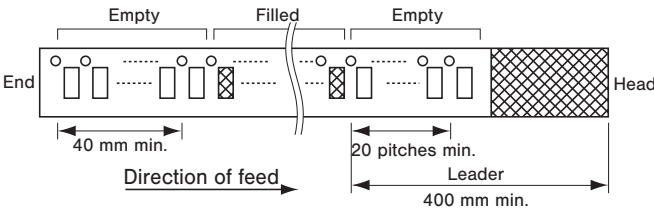
- The smallest unit of bulk pack in plastic bag is 10 pcs. per pack. Orders will be accepted for unit of minimum 10 pcs., i.e., 10, 20, 30 pcs., etc.
- Boxing of bulk in a plastic bag is performed with 50 pcs. per box.

### <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.).

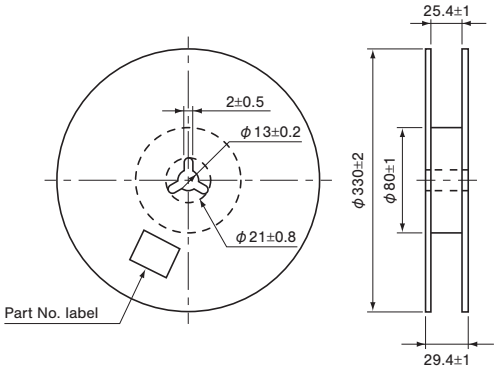
Maximum number of consecutive missing pieces=2  
Leader length and reel dimension are shown in the diagrams below:

#### ● Embossed tape dimensions



#### ● Reel dimensions (Unit: mm)

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



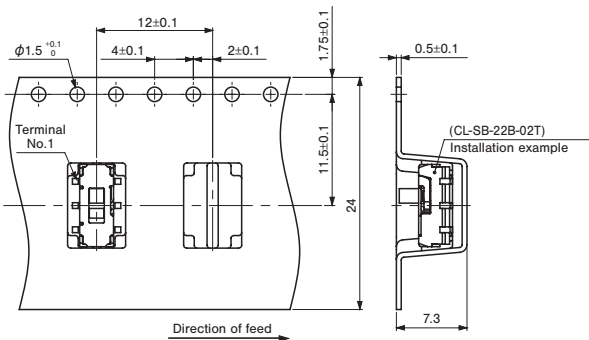
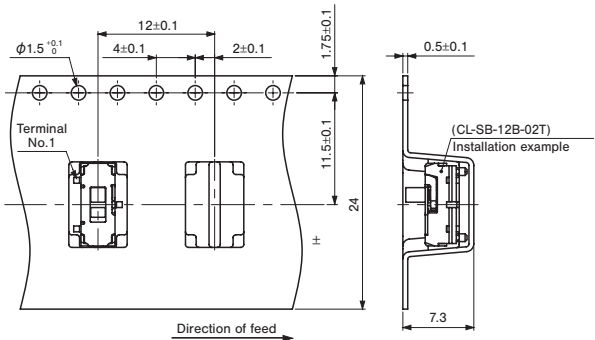
### <Tape dimensions>

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

#### ● CL-SB-12A/12B-0□T

#### ● CL-SB-22A/22B-0□T

(Conforms to JIS C 0806)





# CL-SB

## SLIDE SWITCHES

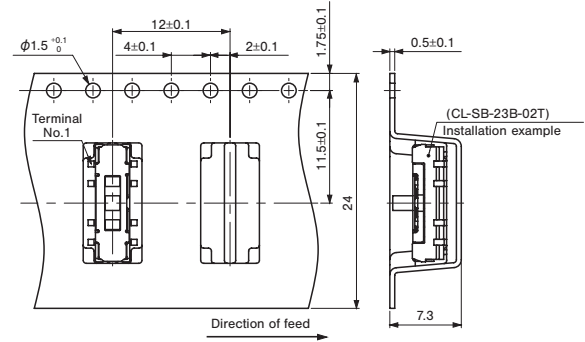
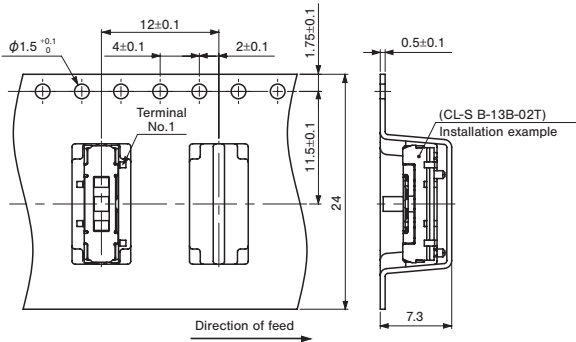
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Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

#### ● CL-SB-13A/13B-0□T

#### ● CL-SB-23A/23B-0□T

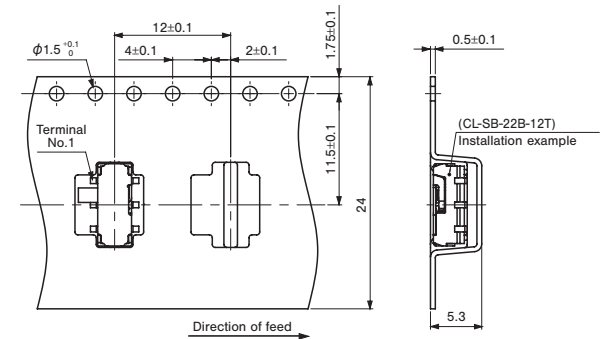
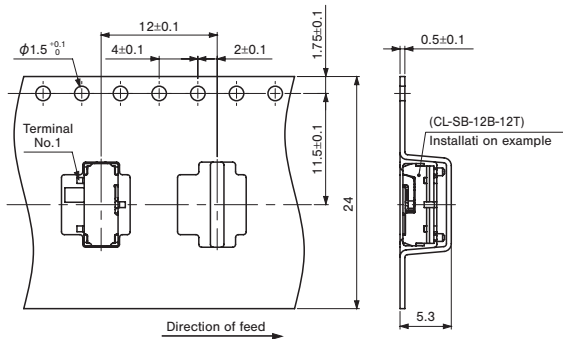
(Conforms to JIS C 0806)



#### ● CL-SB-12A/12B-1□T

#### ● CL-SB-22A/22B-1□T

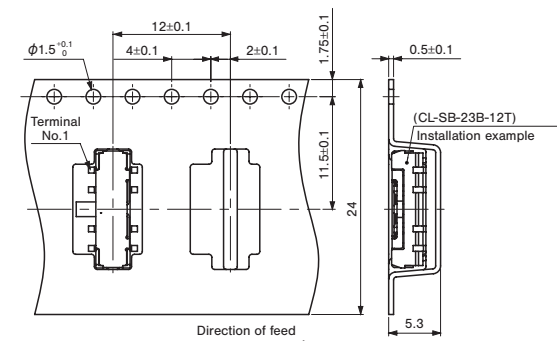
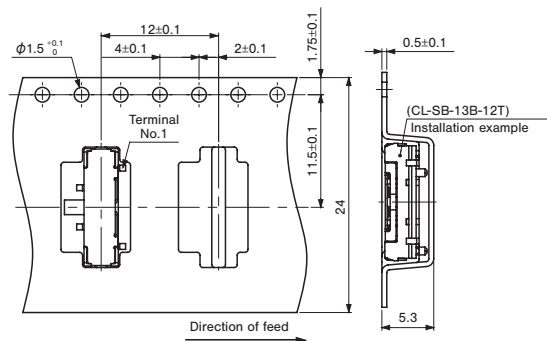
(Conforms to JIS C 0806)



#### ● CL-SB-13A/13B-1□T

#### ● CL-SB-23A/23B-1□T

(JIS C 0806 に一致 Conforms to JIS C 0806)



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