



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

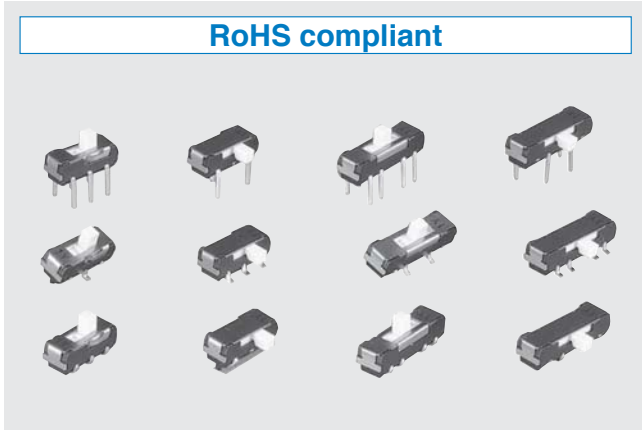
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



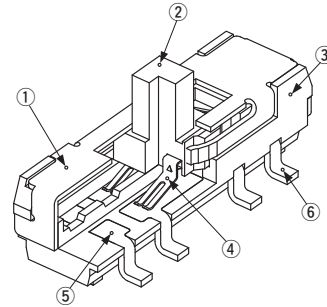
## RoHS compliant



## FEATURES

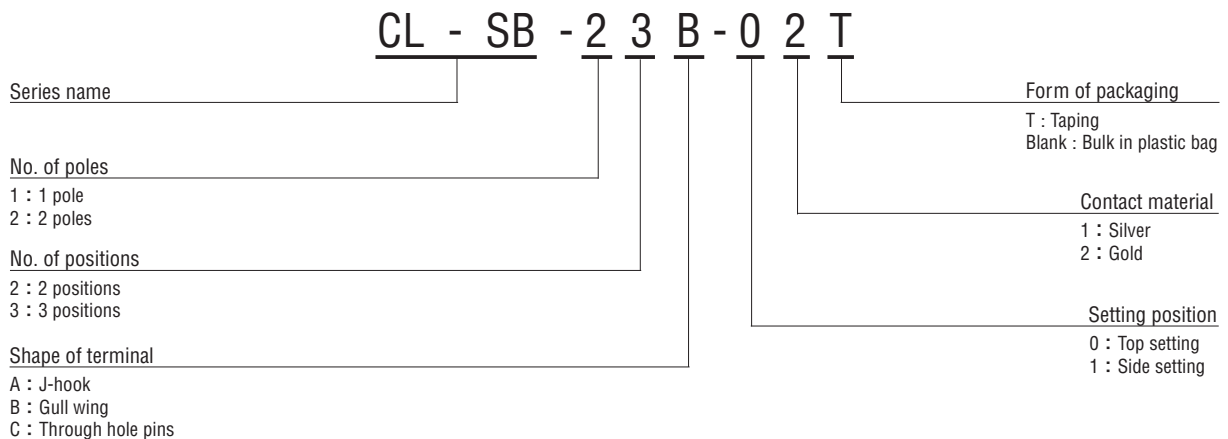
- Wide variety (circuit composition, operating direction, terminal shape: J-hook, Gull wing, Through hole pins)
- Standardization of the silver contacts as well as gold contacts
- Stroke is 2mm
- Using heat-resistant resin to support reflow soldering mounting
- Adopted Twin-contacts mechanism

## 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	—

## PART NUMBER DESIGNATION



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

# CL-SB

## SLIDE SWITCHES

### LIST OF PART NUMBERS

Setting position	No. of poles	No. of positions	Contact material		Soldering method	Form of packaging	Pieces in package	
			Silver	Gold				
Top setting	1	2	CL-SB-12A-01T	CL-SB-12A-02T	Reflow	Taping	500pcs. / reel	
			CL-SB-12A-01	CL-SB-12A-02		Plastic bag	50pcs. / pack	
			CL-SB-12B-01T	CL-SB-12B-02T		Taping	500pcs. / reel	
			CL-SB-12B-01	CL-SB-12B-02		Plastic bag	50pcs. / pack	
		CL-SB-12C-01	CL-SB-12C-02	Manual, Dip	Plastic bag	50pcs. / pack		
		CL-SB-13A-01T	CL-SB-13A-02T	Reflow	Taping	500pcs. / reel		
	CL-SB-13A-01	CL-SB-13A-02	Plastic bag		50pcs. / pack			
	CL-SB-13B-01T	CL-SB-13B-02T	Taping		500pcs. / reel			
	CL-SB-13B-01	CL-SB-13B-02	Plastic bag		50pcs. / pack			
	CL-SB-13C-01	CL-SB-13C-02	Manual, Dip	Plastic bag	50pcs. / pack			
	2	2	CL-SB-22A-01T	CL-SB-22A-02T	Reflow	Taping	500pcs. / reel	
			CL-SB-22A-01	CL-SB-22A-02		Plastic bag	50pcs. / pack	
			CL-SB-22B-01T	CL-SB-22B-02T		Taping	500pcs. / reel	
			CL-SB-22B-01	CL-SB-22B-02		Plastic bag	50pcs. / pack	
		CL-SB-22C-01	CL-SB-22C-02	Manual, Dip	Plastic bag	50pcs. / pack		
		3	CL-SB-23A-01T	CL-SB-23A-02T	Reflow	Taping	500pcs. / reel	
			CL-SB-23A-01	CL-SB-23A-02		Plastic bag	50pcs. / pack	
			CL-SB-23B-01T	CL-SB-23B-02T		Taping	500pcs. / reel	
CL-SB-23B-01			CL-SB-23B-02	Plastic bag		50pcs. / pack		
CL-SB-23C-01		CL-SB-23C-02	Manual, Dip	Plastic bag	50pcs. / pack			
Side Setting		1	2	CL-SB-12A-11T	CL-SB-12A-12T	Reflow	Taping	500pcs. / reel
				CL-SB-12A-11	CL-SB-12A-12		Plastic bag	50pcs. / pack
	CL-SB-12B-11T			CL-SB-12B-12T	Taping		500pcs. / reel	
	CL-SB-12B-11			CL-SB-12B-12	Plastic bag		50pcs. / pack	
	CL-SB-12C-11		CL-SB-12C-12	Manual, Dip	Plastic bag	50pcs. / pack		
	CL-SB-13A-11T		CL-SB-13A-12T	Reflow	Taping	500pcs. / reel		
	CL-SB-13A-11	CL-SB-13A-12	Plastic bag		50pcs. / pack			
	CL-SB-13B-11T	CL-SB-13B-12T	Taping		500pcs. / reel			
	CL-SB-13B-11	CL-SB-13B-12	Plastic bag		50pcs. / pack			
	CL-SB-13C-11	CL-SB-13C-12	Manual, Dip	Plastic bag	50pcs. / pack			
	2	2	CL-SB-22A-11T	CL-SB-22A-12T	Reflow	Taping	500pcs. / reel	
			CL-SB-22A-11	CL-SB-22A-12		Plastic bag	50pcs. / pack	
			CL-SB-22B-11T	CL-SB-22B-12T		Taping	500pcs. / reel	
			CL-SB-22B-11	CL-SB-22B-12		Plastic bag	50pcs. / pack	
		CL-SB-22C-11	CL-SB-22C-12	Manual, Dip	Plastic bag	50pcs. / pack		
		3	CL-SB-23A-11T	CL-SB-23A-12T	Reflow	Taping	500pcs. / reel	
			CL-SB-23A-11	CL-SB-23A-12		Plastic bag	50pcs. / pack	
			CL-SB-23B-11T	CL-SB-23B-12T		Taping	500pcs. / reel	
CL-SB-23B-11			CL-SB-23B-12	Plastic bag		50pcs. / pack		
CL-SB-23C-11		CL-SB-23C-12	Manual, Dip	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

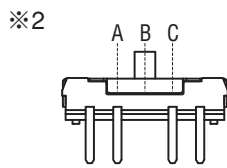
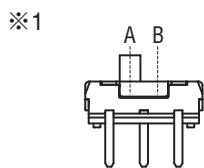
### STANDARD SPECIFICATIONS

Operating temperature range	-40 ~ 85 °C	
Storage temperature range		
Sealing	Non Washable	
Net weight	0.21 g (CL-SB-12*-0*) 0.22 g (CL-SB-22*-0*) 0.26 g (CL-SB-13*-0*) 0.28 g (CL-SB-23*-0*)	0.21 g (CL-SB-12*-1*) 0.22 g (CL-SB-22*-1*) 0.26 g (CL-SB-13*-1*) 0.28 g (CL-SB-23*-1*)

### MECHANICAL CHARACTERISTICS

No. of positions	2, 3	
Stroke	2 mm	
Operation force	2 Contacts (CL-SB-*2*-**)	A ⇄ B ※1 1.5 ± 1.0 N (0.153 ± 0.102kgf)
	3 Contacts (CL-SB-*3*-**)	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	Flow : 260 ± 3 °C, 5 ~ 6 s Reflow : 255 °C (Peak temperature) (Please refer to the profile below)	
	Manual soldering : 380 ± 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



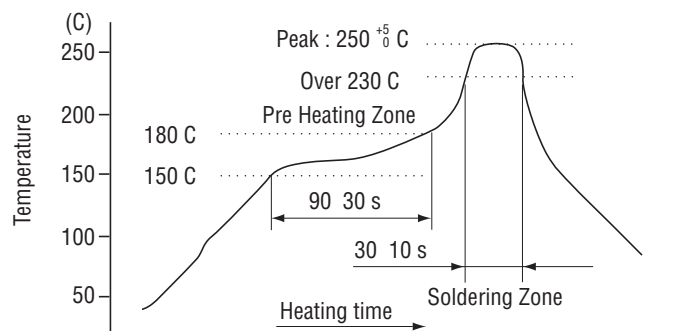
### ELECTRICAL CHARACTERISTICS

Contact rating Non-switching Switching Minimum	DC50 V 200 mA DC12 V 200 mA 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
High temperature exposure	85 °C, 96 h
Low temperature exposure	-40 °C, 96 h
Thermal shock	-40 (0.5 h) ~ 85 °C (0.5 h), 5 cycles

### <Reflow profile for soldering heat evaluation>



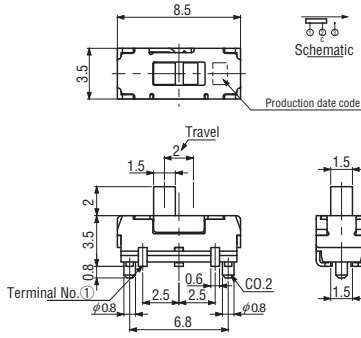
Reflow : two times maximum

# CL-SB SLIDE SWITCHES

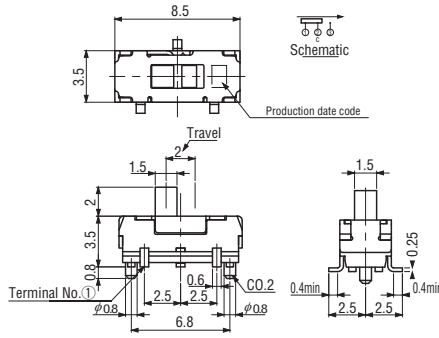
## OUTLINE DIMESIONS

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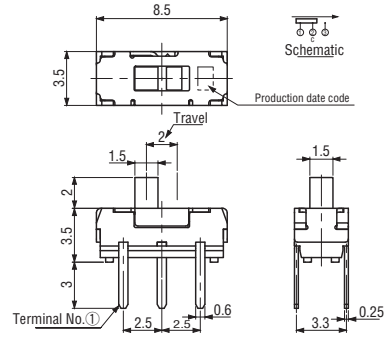
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- CL-SB-12A-02



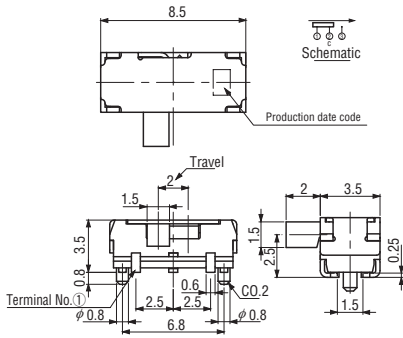
- CL-SB-12B-01
- CL-SB-12B-02



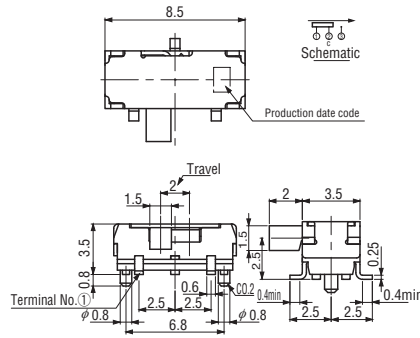
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- CL-SB-12C-02



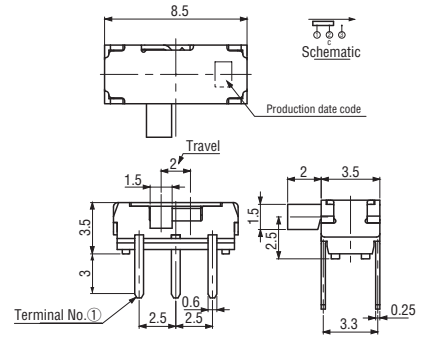
- CL-SB-12A-11
- CL-SB-12A-12



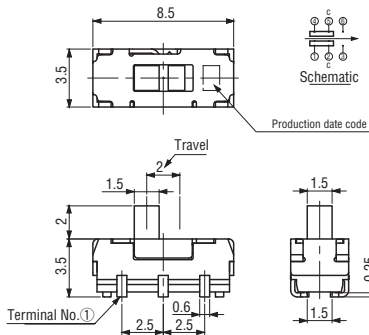
- CL-SB-12B-11
- CL-SB-12B-12



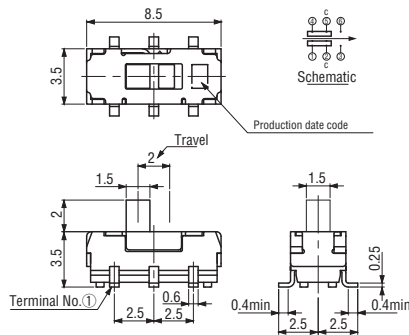
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- CL-SB-12C-12



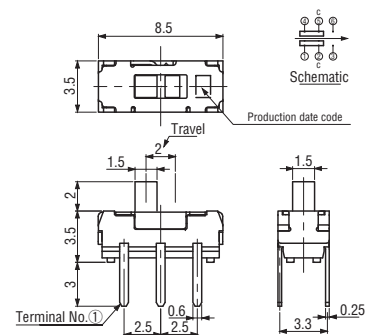
- CL-SB-22A-01
- CL-SB-22A-02



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



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

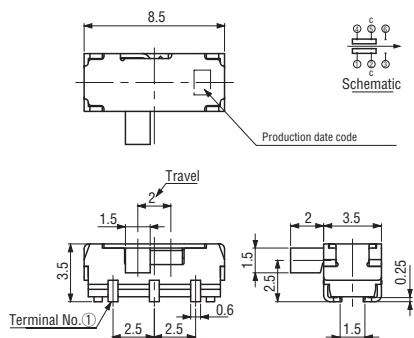


# CL-SB SLIDE SWITCHES

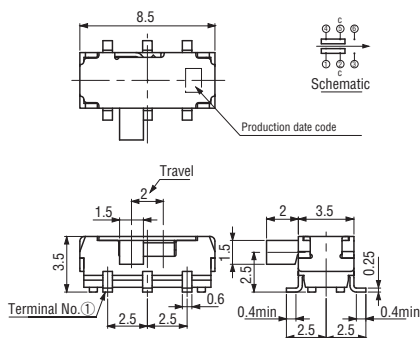
## OUTLINE DIMESIONS

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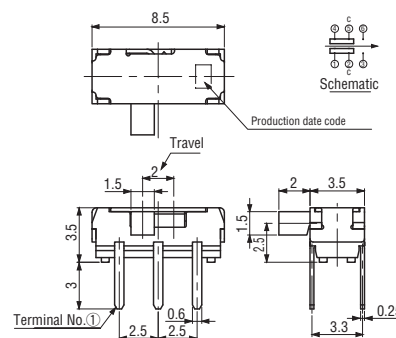
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- CL-SB-22A-12



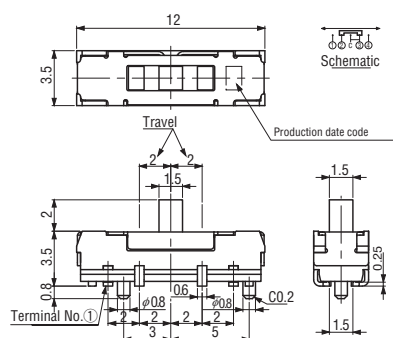
- CL-SB-22B-11
- CL-SB-22B-12



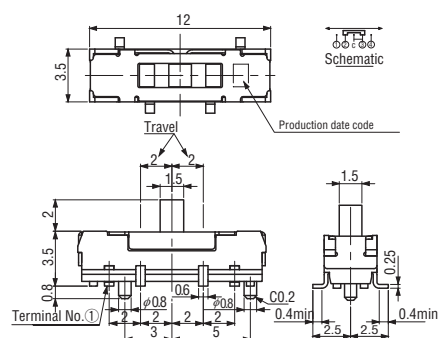
- CL-SB-22C-11
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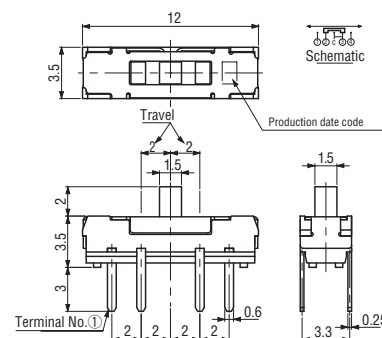
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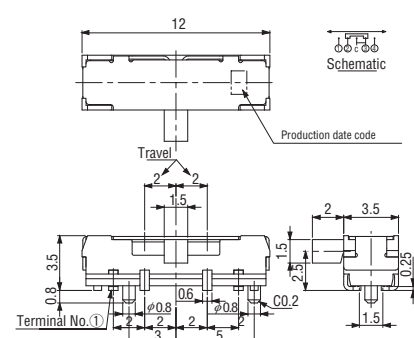
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- CL-SB-13B-02



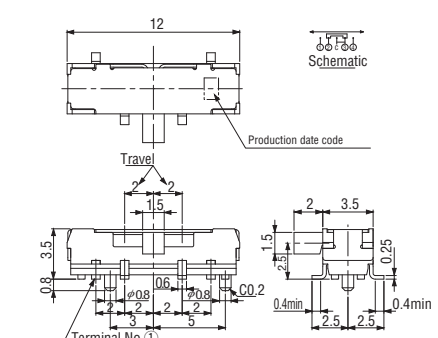
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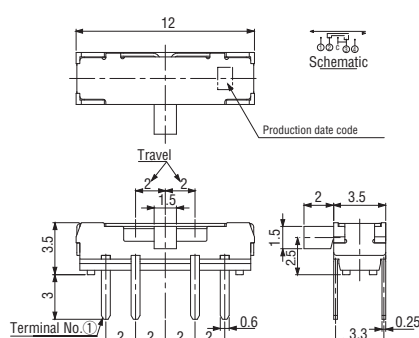
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- CL-SB-13B-11
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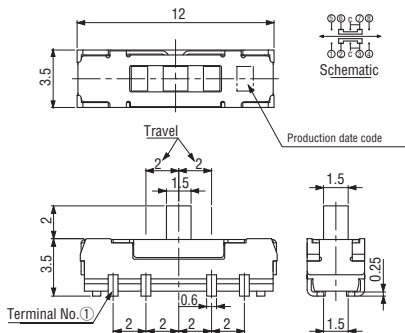


- CL-SB-13C-11
- CL-SB-13C-12

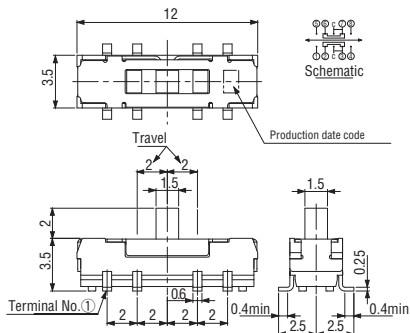


# CL-SB SLIDE SWITCHES

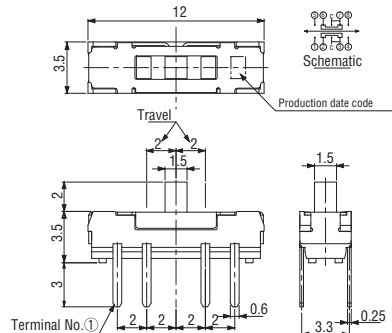
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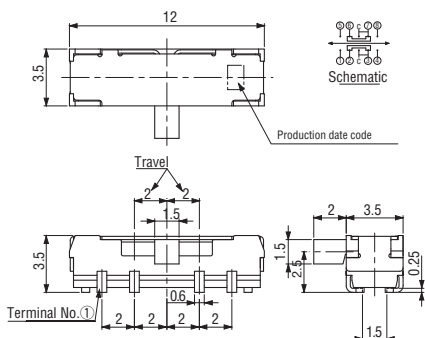
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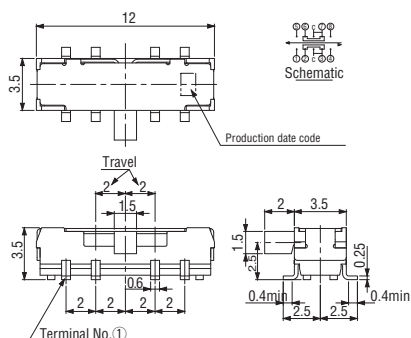
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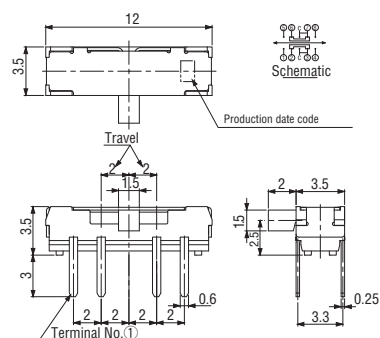
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- CL-SB-23B-11
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- CL-SB-23C-11
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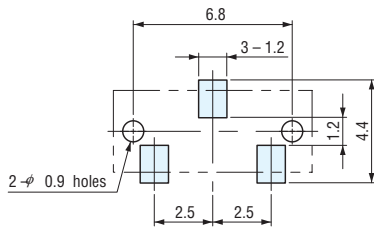


# CL-SB SLIDE SWITCHES

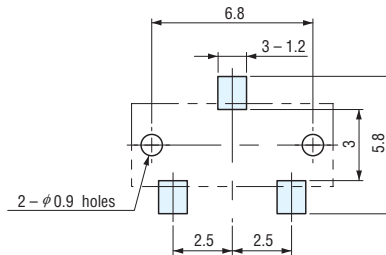
## RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit: mm)

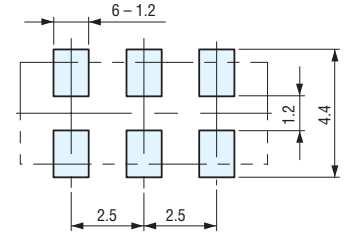
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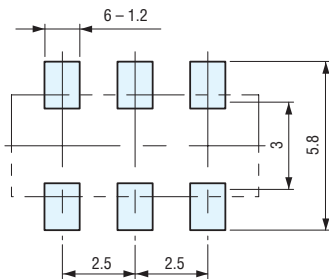
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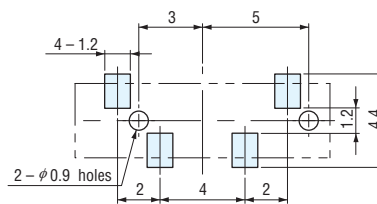
### CL-SB-22A-□□



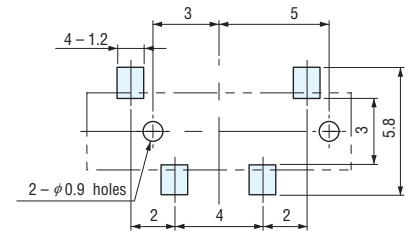
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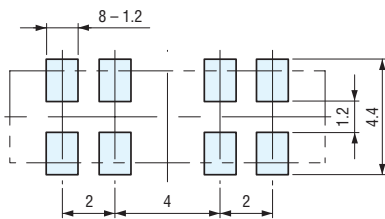
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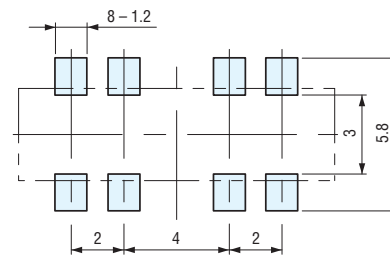
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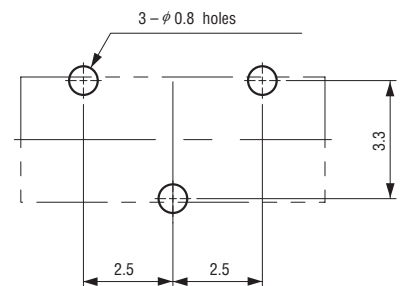
### CL-SB-23A-□□



### CL-SB-23B-□□



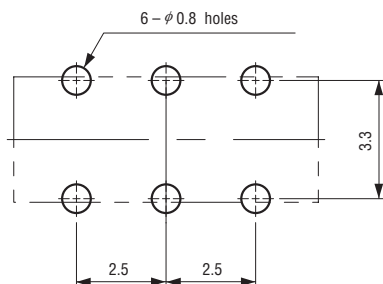
### CL-SB-12C-□□



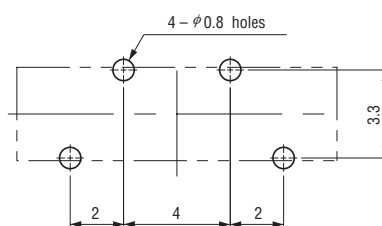
## SIZE OF P.C.B. PROCESSING

(Unit: mm)

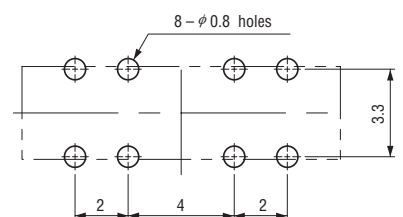
### CL-SB-22C-□□



### CL-SB-13C-□□



### CL-SB-23C-□□





# CL-SB SLIDE SWITCHES

## PACKAGING SPECIFICATIONS

### <Bulk pack specifications>

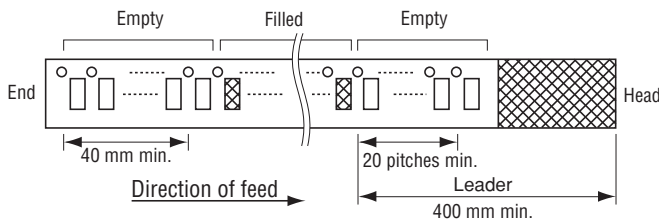
- The smallest unit of bulk pack in plastic bag is 10 pcs. per pack. Orders will be accepted for unit of minimum 10 pcs., i.e., 10, 20, 30 pcs., etc.
- Boxing of bulk in a plastic bag is performed with 50 pcs. per box.

### <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

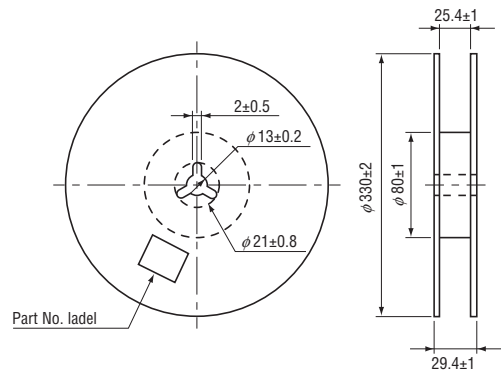


### ● Reel dimensions

(Unit: mm)

(Conforms to JIS C 0806-3)

(In accordance with EIAJ ET-7200A)



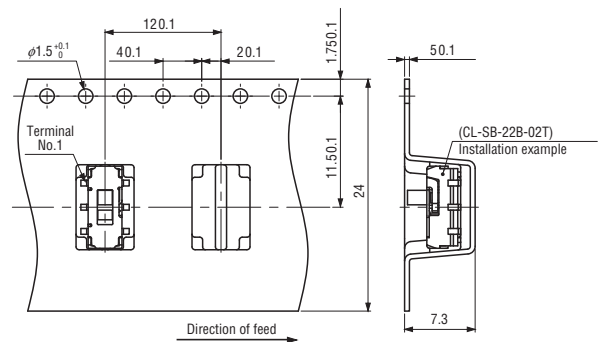
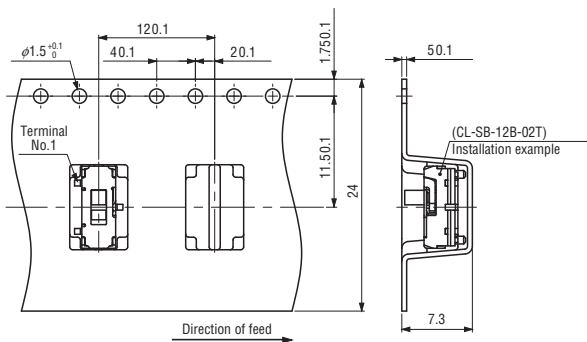
### <Tape dimensions>

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

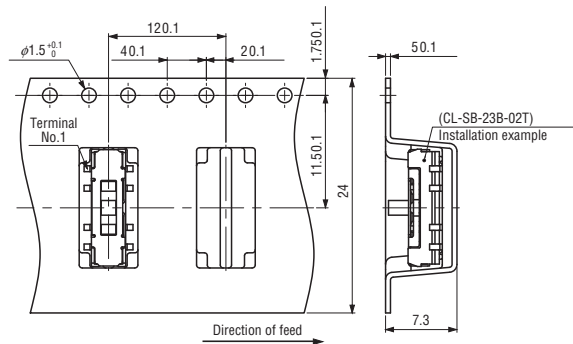
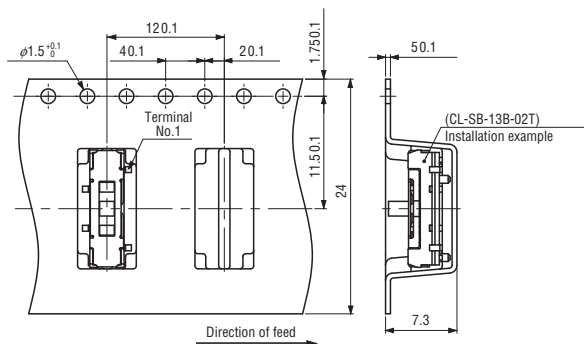
## <Tape dimensions>

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

### ● CL-SB-13A/13B-0 □ T

### ● CL-SB-23A/23B-0 □ T

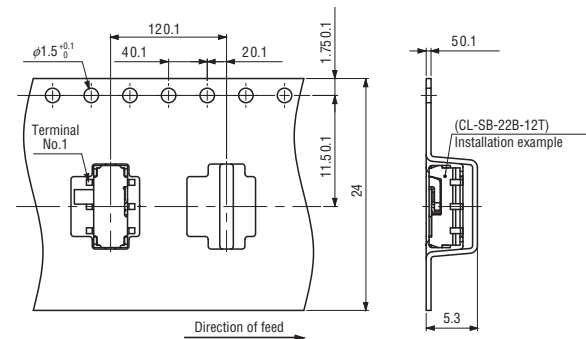
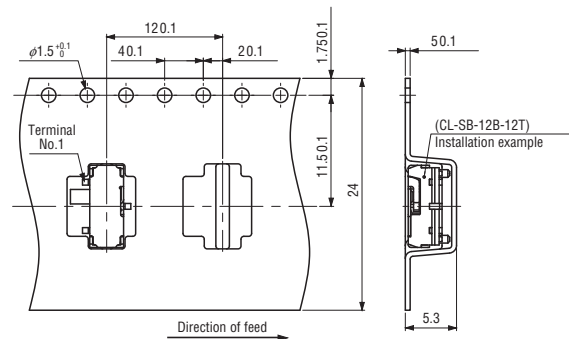
(Conforms to JIS C 0806)



### ● 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

(Conforms to JIS C 0806)

