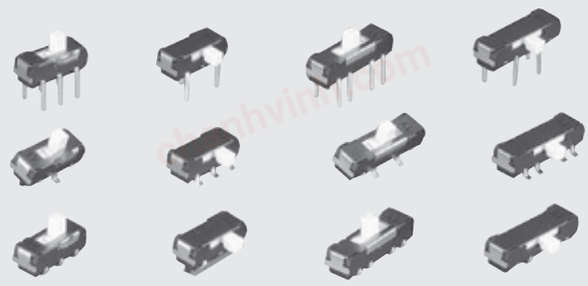
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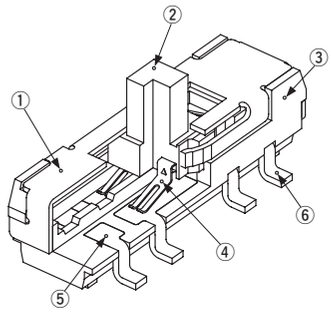
SLIDE SWITCHES

CL-SB

RoHS compliant



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

CL - SB - 2 3 B - 0 2 T

Series name

No. of poles
1 : 1 pole
2 : 2 poles

No. of positions
2 : 2 positions
3 : 3 positions

Shape of terminal
A : J-hook
B : Gull wing
C : Through hole pins
C1 : PC terminals with one on the operation side and others on the opposite side ※1
C4 : Terminals aligned laterally on one side ※1

※1: Please check the following LIST OF PART NUMBERS.

Setting position
0 : Top setting
1 : Side setting

Contact material
1 : Silver
2 : Gold

Form of packaging
T : Taping
Blank : Bulk in plastic bag

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

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CL-SB
SLIDE SWITCHES

■LIST OF PART NUMBERS

Setting position	No. of poles	No. of positions	Oontact 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		Plastic bag	50pcs. / pack
			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.

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CL-SB
SLIDE SWITCHES

STANDARD SPECIFICATIONS

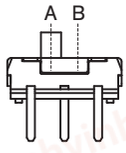
Operating temperature range	−40 ~ 85 °C
Storage temperature range	
Sealing	Non- Washable
Net weight	0.21 g (CL-SB-12*-0*) 0.21 g (CL-SB-12*-1*) 0.22 g (CL-SB-22*-0*) 0.23 g (CL-SB-22*-1*) 0.26 g (CL-SB-13*-0*) 0.27 g (CL-SB-13*-1*) 0.28 g (CL-SB-23*-0*) 0.29 g (CL-SB-23*-1*) 0.21 g (CL-SB-12C1-11) 0.19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

MECHANICAL CHARACTERISTICS

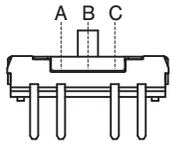
No. of positions	2, 3	
Stroke	2 mm	
Operation force	2 Contacts (CL-SB-*2*-**)	A ⇔ B ※1 1.5 ± 1.0 N {0.153 ± 0.102kgf}
	3 Contacts (CL-SB-*3*-**)	A→B / C→B ※2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}
Stop strength	20 N {2.04 kgf} 15 s	
Solderability	245 ± 3 °C, 2 ~ 3 s	
Soldering heat	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



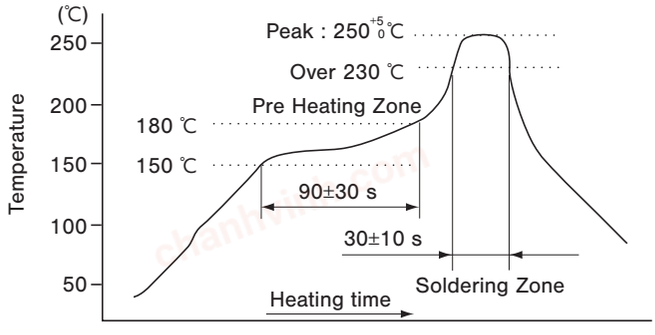
ELECTRICAL CHARACTERISTICS

Contact rating Non-switching 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^2, 10-500-10 Hz, 3 directions for 2 h each
Shock	490 m/s^2, 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

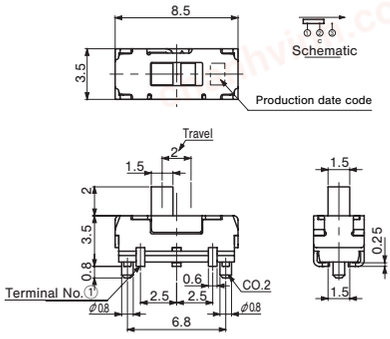
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CL-SB
SLIDE SWITCHES

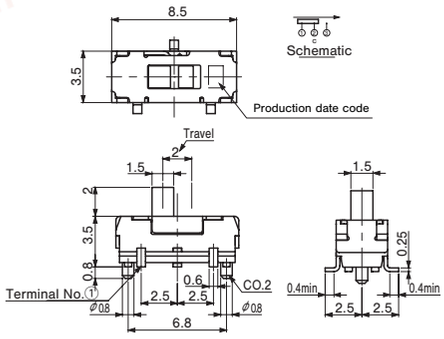
OUTLINE DIMESIONS

Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

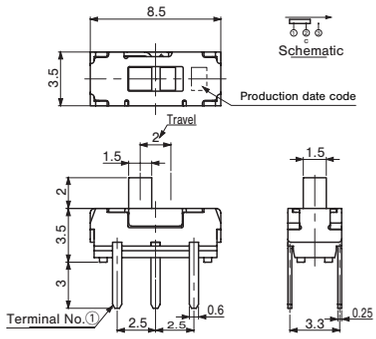
● CL-SB-12A-01
● CL-SB-12A-02



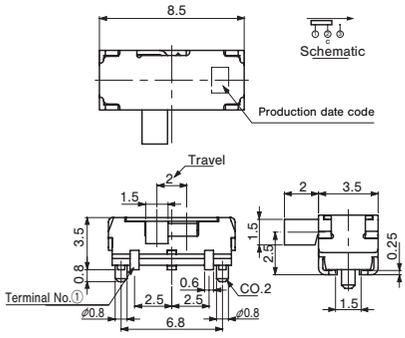
● CL-SB-12B-01
● CL-SB-12B-02



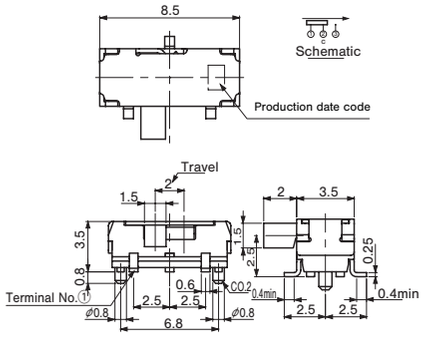
● CL-SB-12C-01
● CL-SB-12C-02



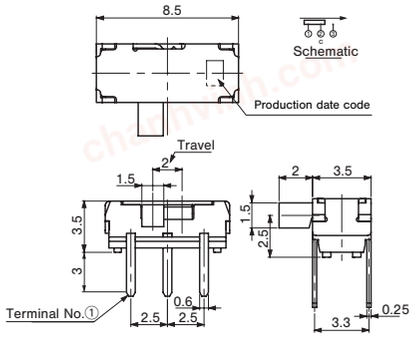
● CL-SB-12A-11
● CL-SB-12A-12



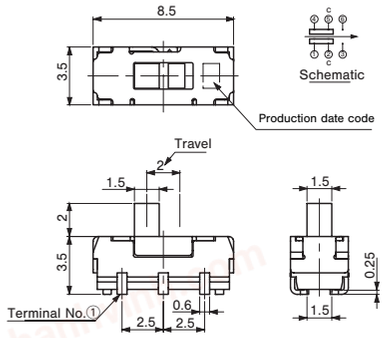
● CL-SB-12B-11
● CL-SB-12B-12



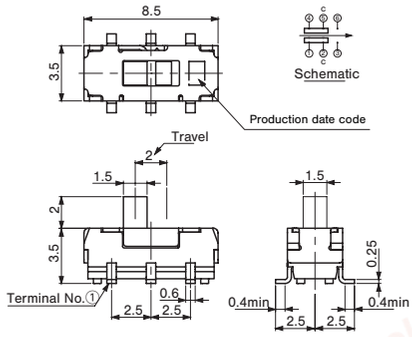
● CL-SB-12C-11
● CL-SB-12C-12



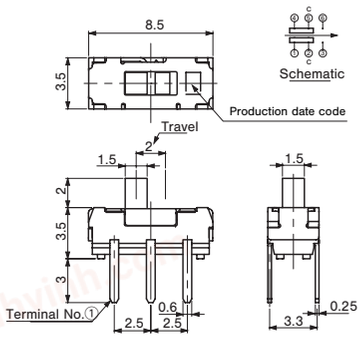
● CL-SB-22A-01
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● CL-SB-22B-01
● CL-SB-22B-02



● CL-SB-22C-01
● CL-SB-22C-02



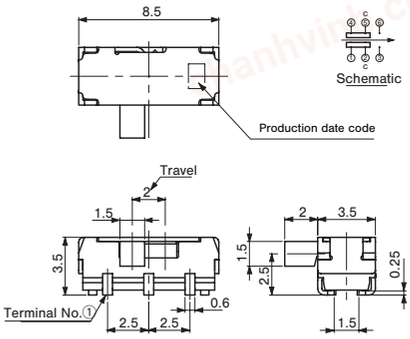
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CL-SB
SLIDE SWITCHES

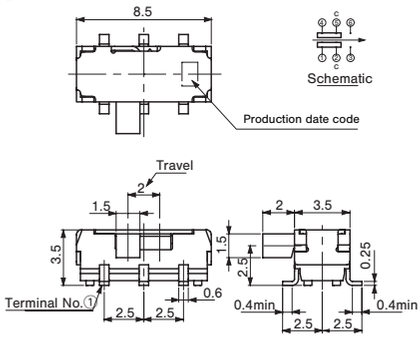
OUTLINE DIMESIONS

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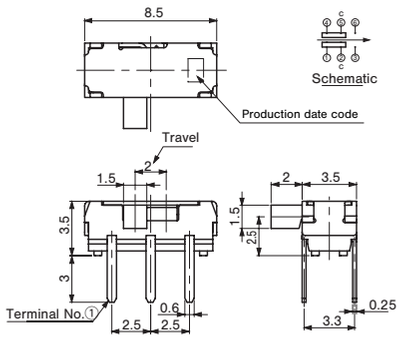
- CL-SB-22A-11
- CL-SB-22A-12



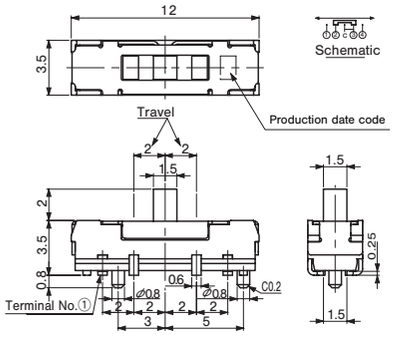
- CL-SB-22B-11
- CL-SB-22B-12



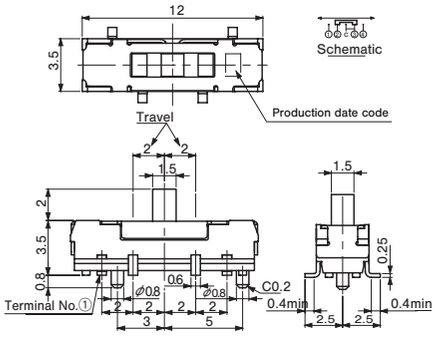
- CL-SB-22C-11
- CL-SB-22C-12



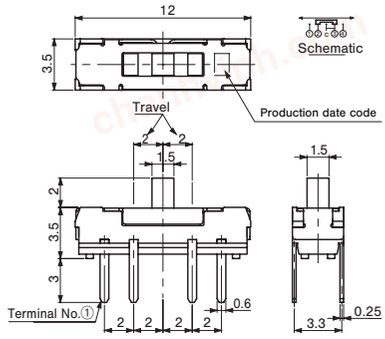
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- CL-SB-13A-02



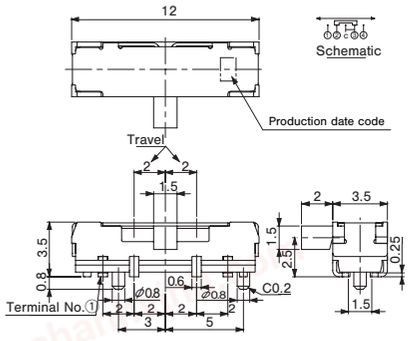
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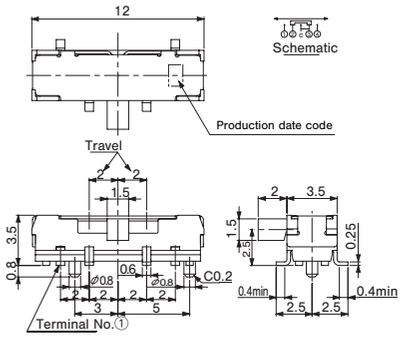
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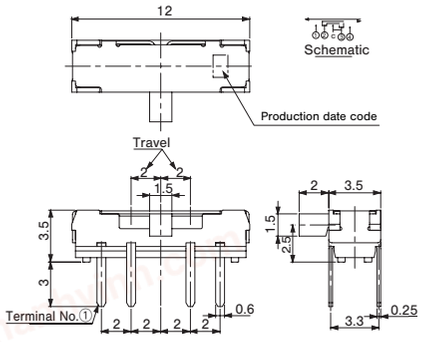
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- CL-SB-13A-12



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



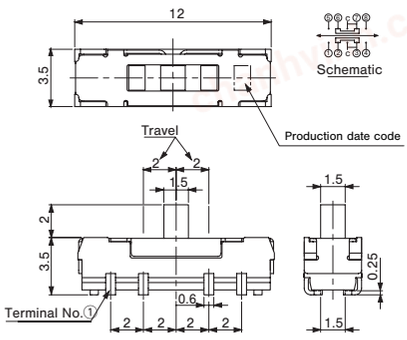
- CL-SB-13C-11
- CL-SB-13C-12



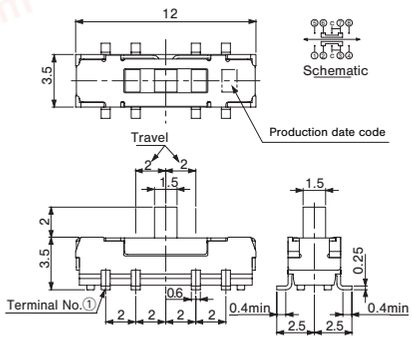
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CL-SB
SLIDE SWITCHES

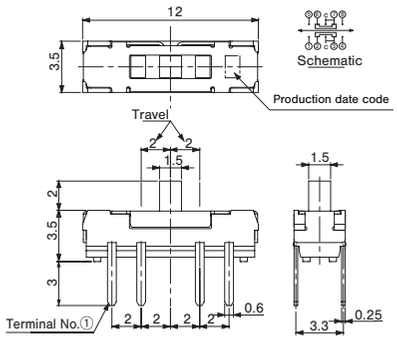
● CL-SB-23A-01
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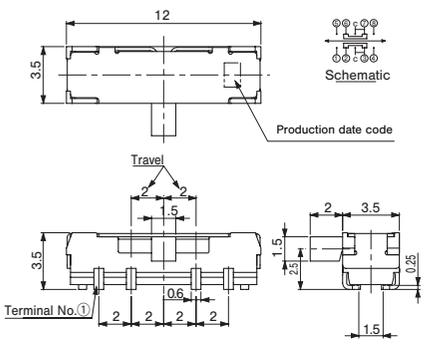
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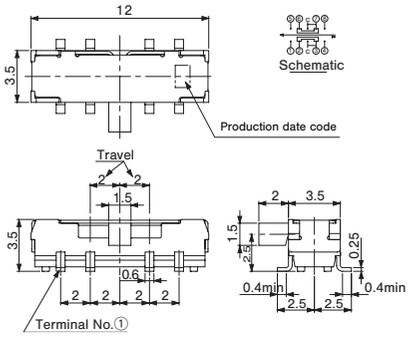
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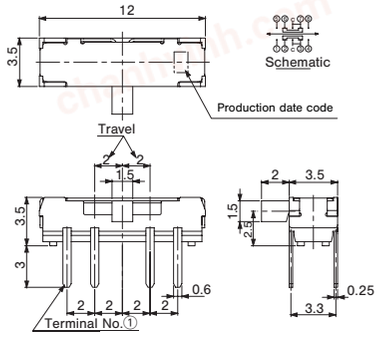
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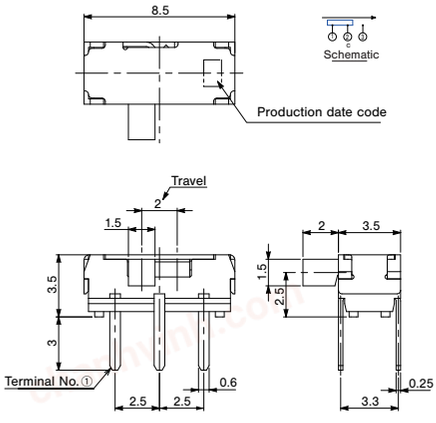
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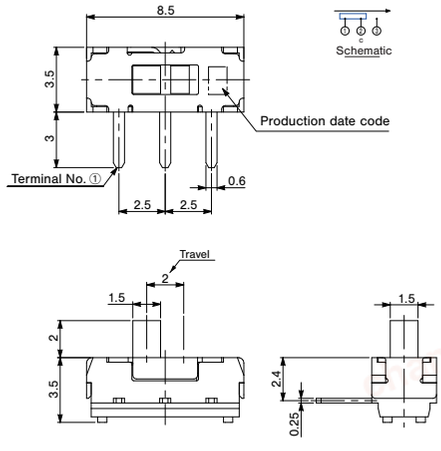
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● CL-SB-23C-12



● CL-SB-12C1-11



● CL-SB-12C4-11



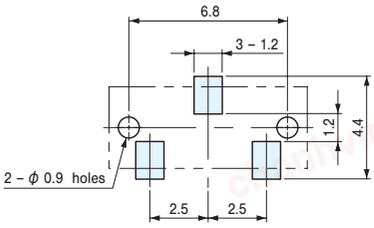
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CL-SB
SLIDE SWITCHES

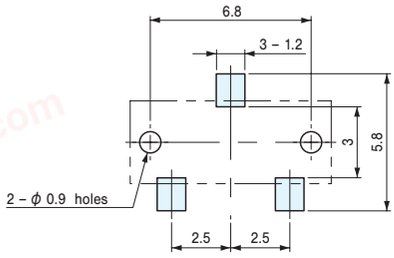
RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit:mm)

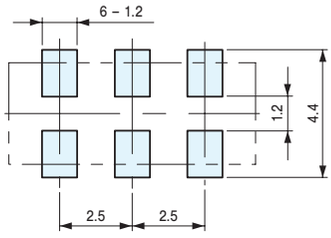
● CL-SB-12A-□□



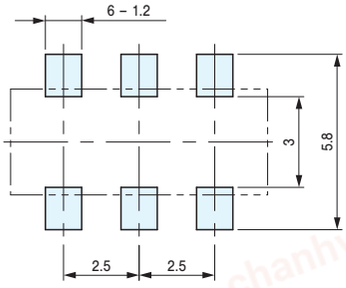
● CL-SB-12B-□□



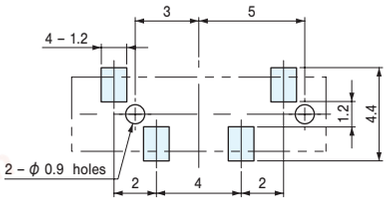
● CL-SB-22A-□□



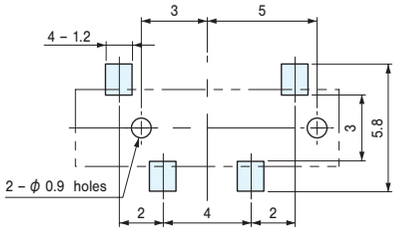
● CL-SB-22B-□□



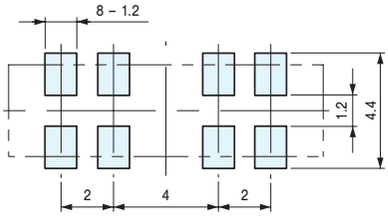
● CL-SB-13A-□□



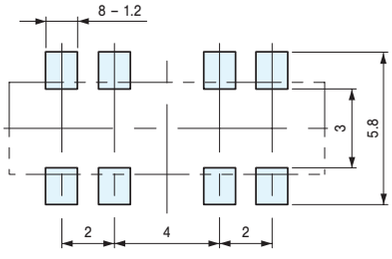
● CL-SB-13B-□□



● CL-SB-23A-□□



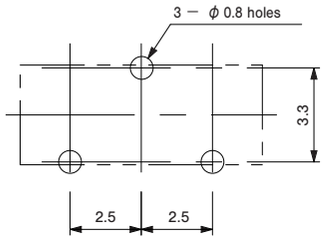
● CL-SB-23B-□□



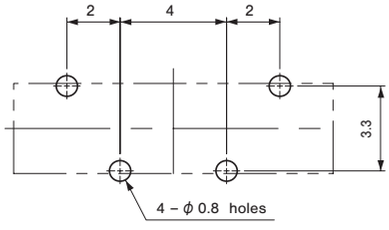
SIZE OF P.C.B. PROCESSING

(Unit: mm)

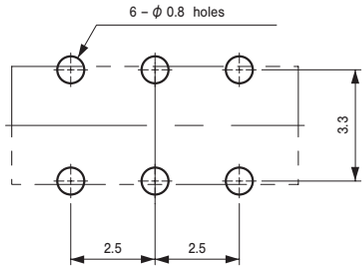
● CL-SB-12C-□□
● CL-SB-12C1-11



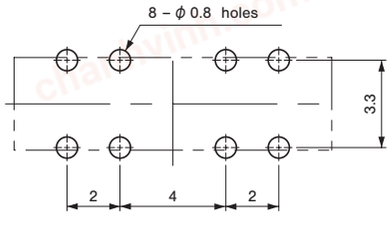
● CL-SB-13C-□□



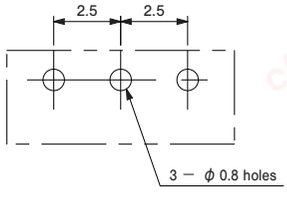
● CL-SB-22C-□□



● CL-SB-23C-□□



● CL-SB-12C4-11



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PACKAGING SPECIFICATIONS

<Bulk pack specifications>

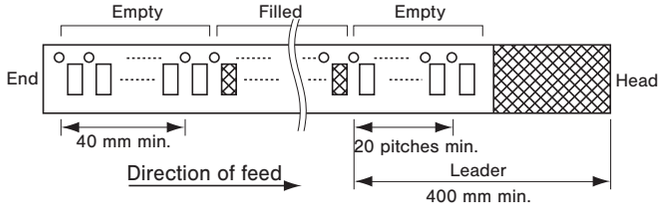
- The smallest unit of bulk pack in plastic bag is 10 pcs. per pack.Orders will be accepted for unit of minimum 10 pcs., i.e., 10, 20, 30 pcs., etc.
- Boxing of bulk in a plastic bag is performed with 50 pcs. per box.

<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.).

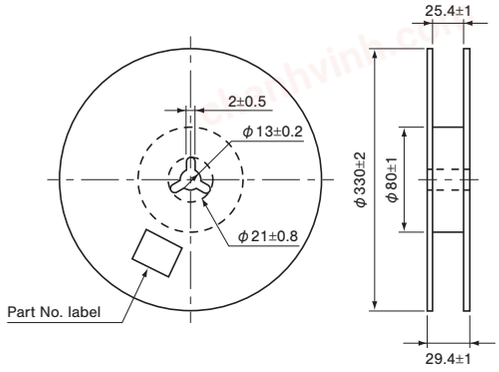
Maximum number of consecutive missing pieces=2
Leader length and reel dimension are shown in the diagrams below:

● 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)



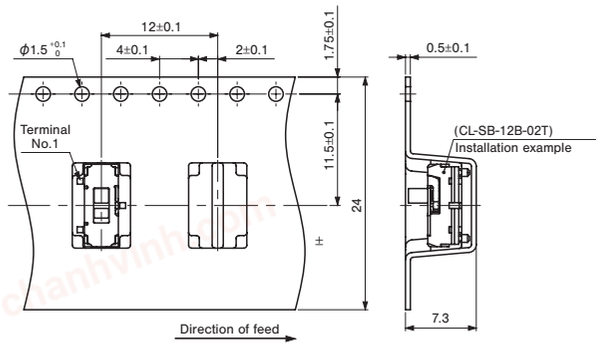
〈Tape dimensions〉

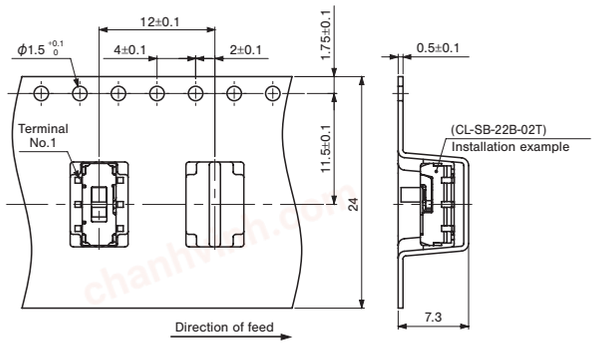
Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

● CL-SB-12A/12B-0□T

● CL-SB-22A/22B-0□T

(Conforms to JIS C 0806)





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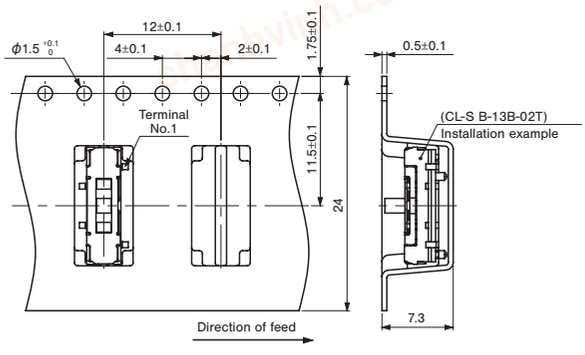
CL-SB
SLIDE SWITCHES

〈Tape dimensions〉

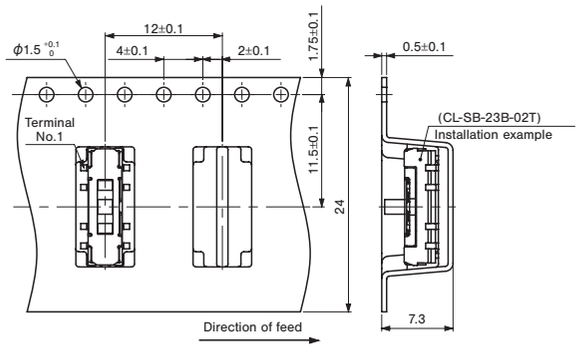
Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

● CL-SB-13A/13B-0□T

(Conforms to JIS C 0806)

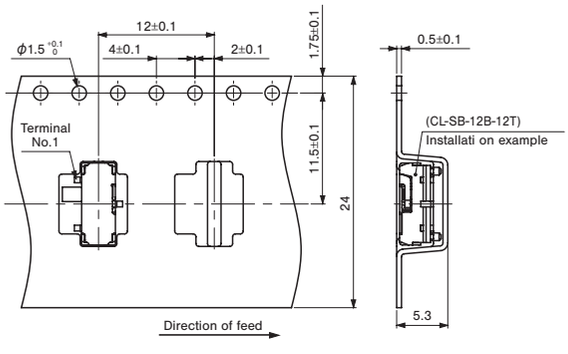


● CL-SB-23A/23B-0□T

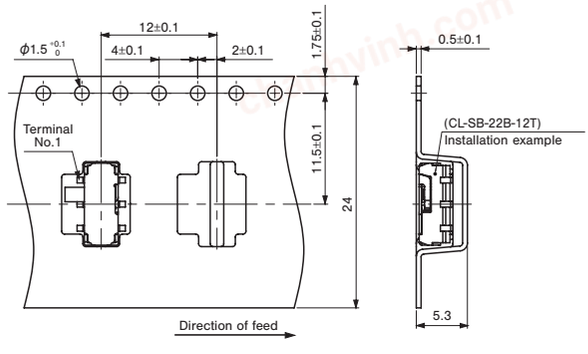


● CL-SB-12A/12B-1□T

(Conforms to JIS C 0806)

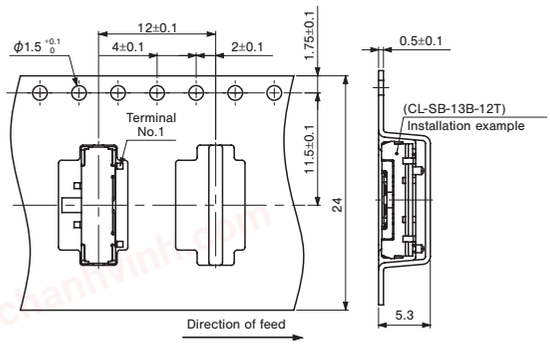


● CL-SB-22A/22B-1□T



● CL-SB-13A/13B-1□T

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



● CL-SB-23A/23B-1□T

