

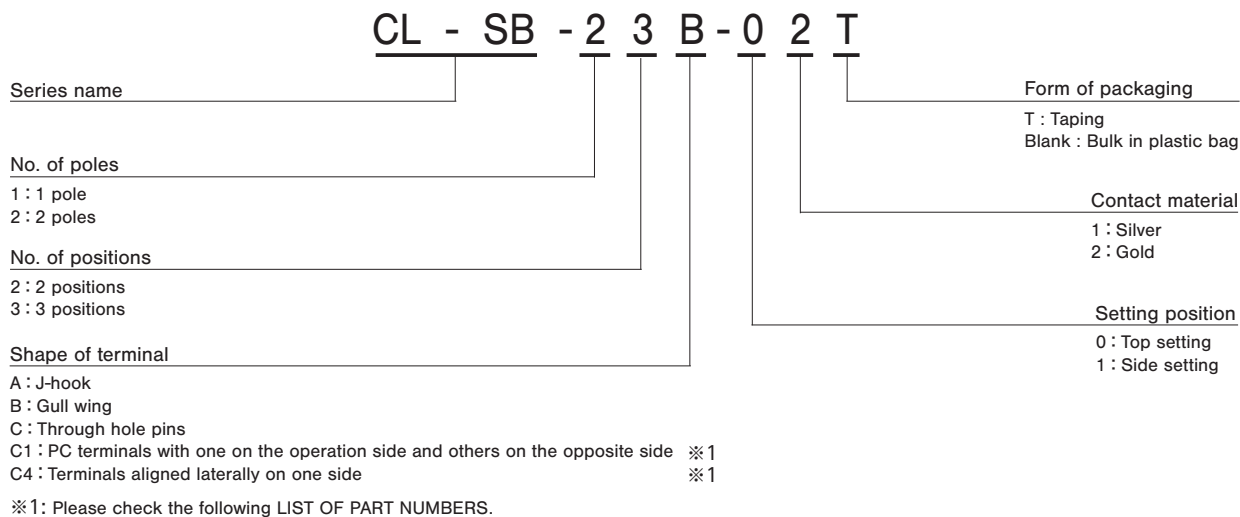
INTERNAL STRUCTURE

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		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.

CL-SB

SLIDE SWITCHES

STANDARD SPECIFICATIONS

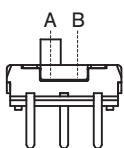
Operating temperature range	-40 ~ 85 °C
Storage temperature range	
Sealing	Non- Washable
Net weight	0.21 g (CL-SB-12 ³ -0 [*]) 0.21 g (CL-SB-12 ³ -1 [*]) 0.22 g (CL-SB-22 ³ -0 [*]) 0.23 g (CL-SB-22 ³ -1 [*]) 0.26 g (CL-SB-13 ³ -0 [*]) 0.27 g (CL-SB-13 ³ -1 [*]) 0.28 g (CL-SB-23 ³ -0 [*]) 0.29 g (CL-SB-23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

MECHANICAL CHARACTERISTICS

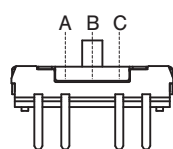
No. of positions	2, 3
Stroke	2 mm
Operation force	2 Contacts (CL-SB-*2*-**) A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf} 3 Contacts (CL-SB-*3*-**) A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}
Stop strength	20 N {2.04 kgf} 15 s
Solderability	245 ± 3 °C, 2 ~ 3 s
Soldering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



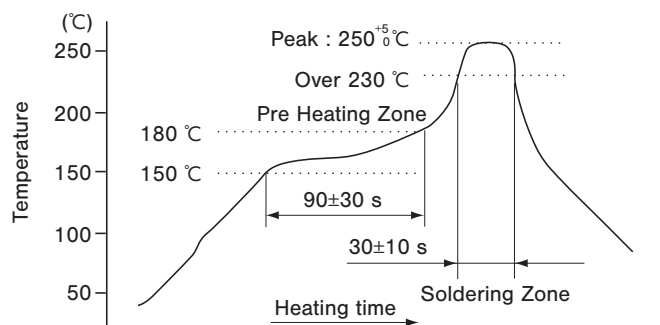
ELECTRICAL CHARACTERISTICS

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



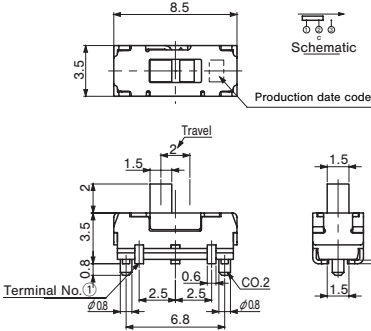
Reflow : two times maximum

CL-SB SLIDE SWITCHES

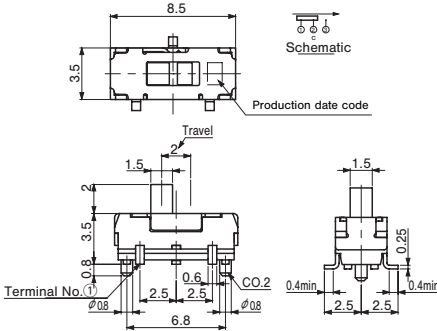
OUTLINE DIMESIONS

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

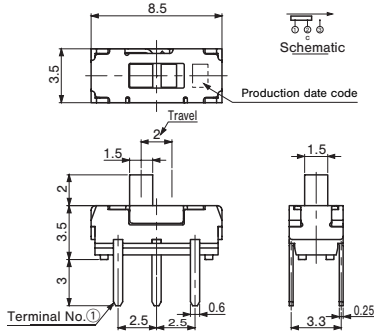
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- CL-SB-12A-02



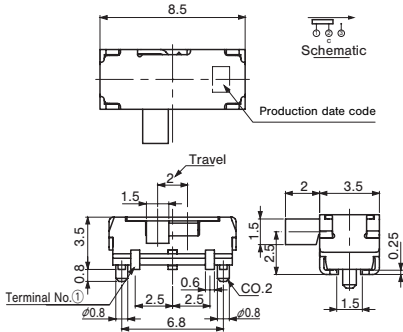
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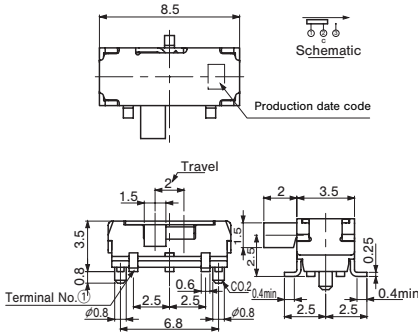
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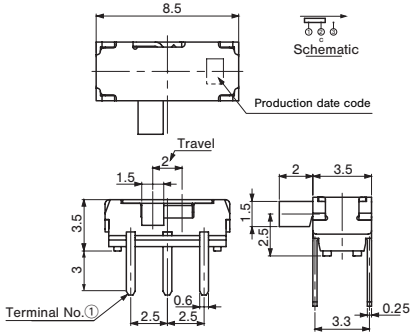
- CL-SB-12A-11
- CL-SB-12A-12



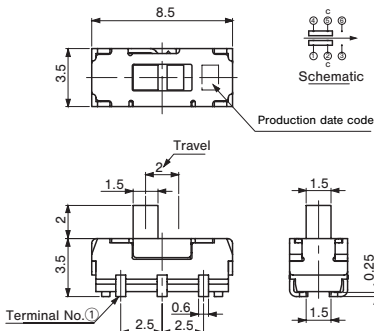
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- CL-SB-12B-12



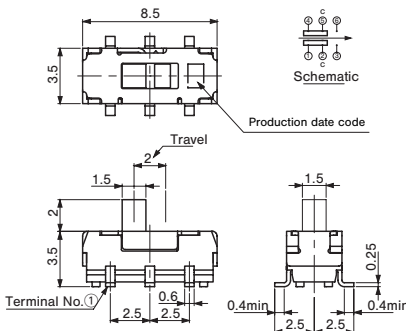
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- CL-SB-12C-12



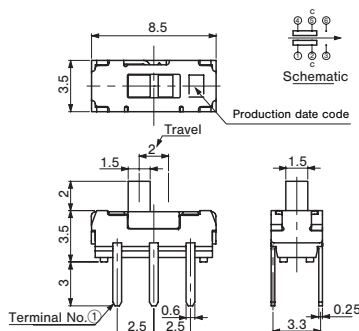
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- CL-SB-22B-01
- CL-SB-22B-02



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



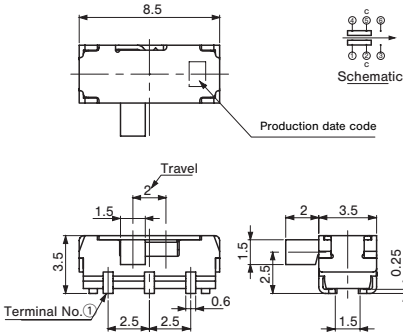
CL-SB

SLIDE SWITCHES

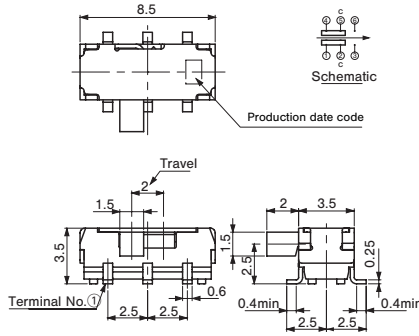
OUTLINE DIMENSIONS

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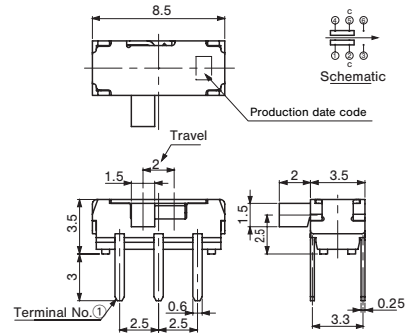
- CL-SB-22A-11
- CL-SB-22A-12



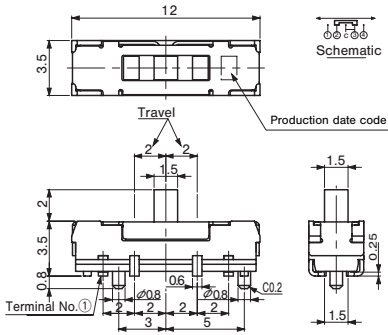
- CL-SB-22B-11
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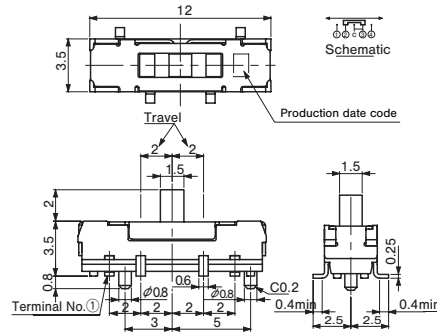
- CL-SB-22C-11
- CL-SB-22C-12



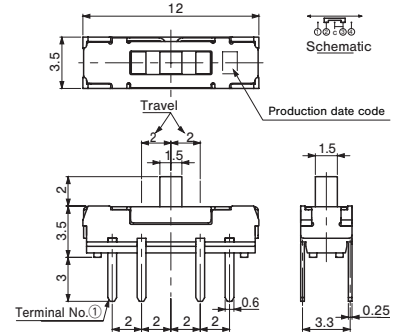
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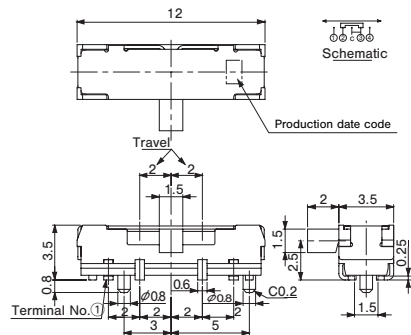
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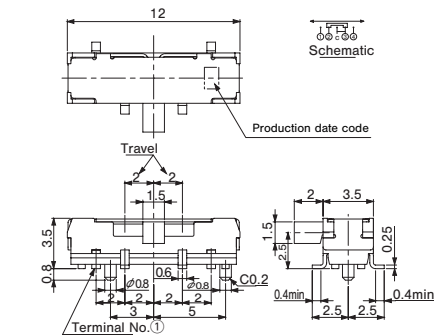
- CL-SB-13C-01
- CL-SB-13C-02



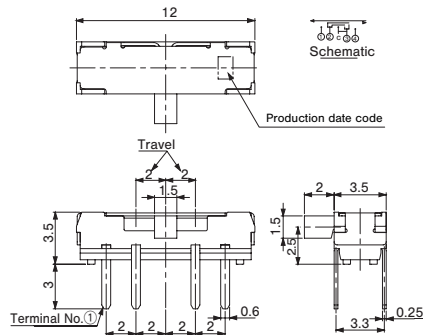
- CL-SB-13A-11
- CL-SB-13A-12



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

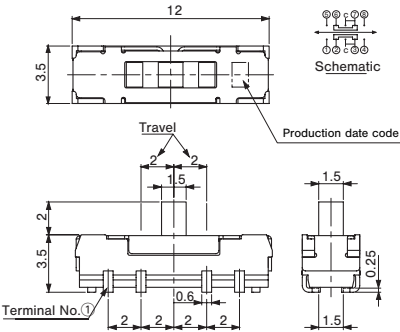


- CL-SB-13C-11
- CL-SB-13C-12

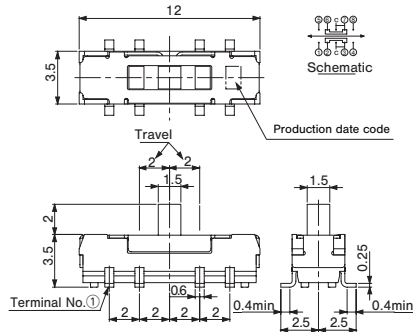


CL-SB SLIDE SWITCHES

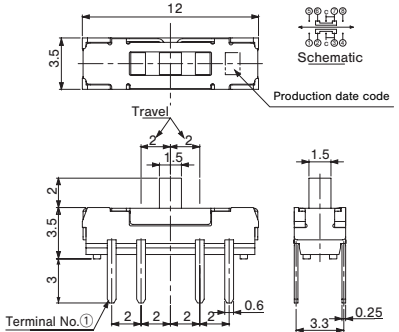
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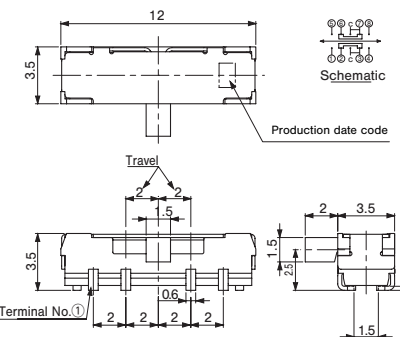
- CL-SB-23B-01
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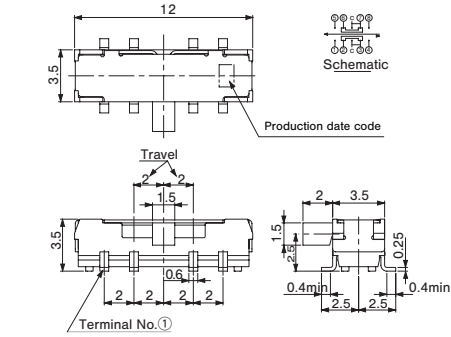
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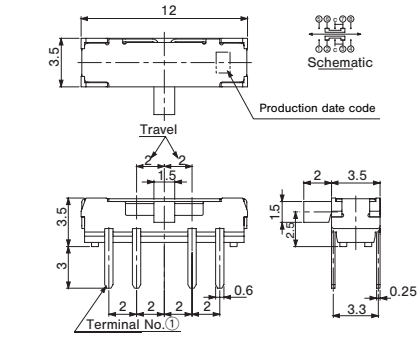
- CL-SB-23A-11
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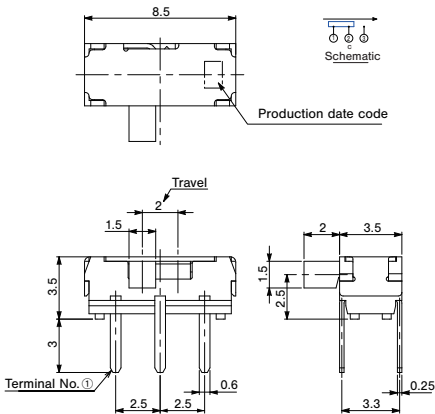
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- CL-SB-23B-12



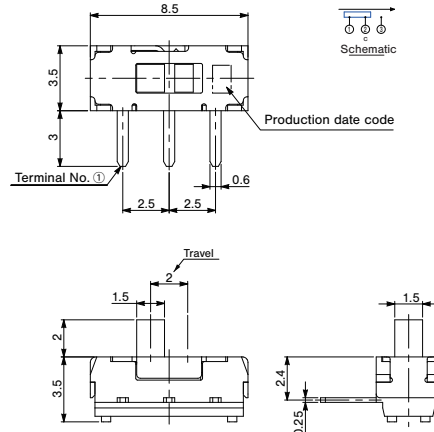
- CL-SB-23C-11
- CL-SB-23C-12



- CL-SB-12C1-11



- CL-SB-12C4-11



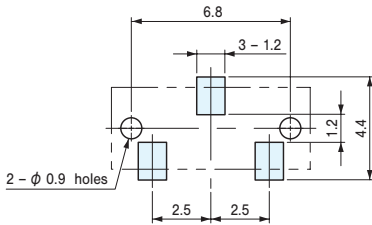
CL-SB

SLIDE SWITCHES

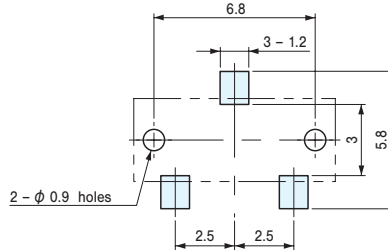
RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit:mm)

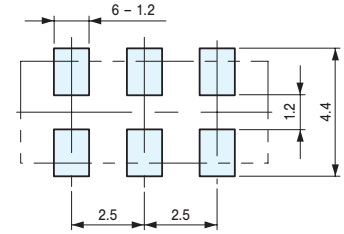
● CL-SB-12A-□□



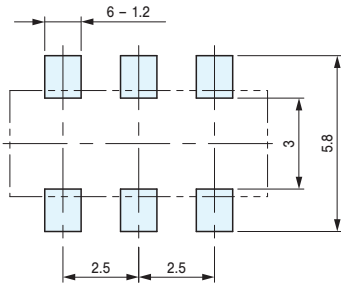
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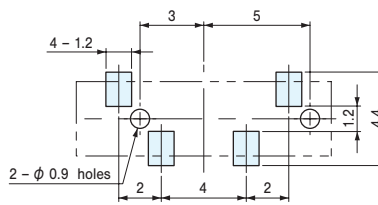
● CL-SB-22A-□□



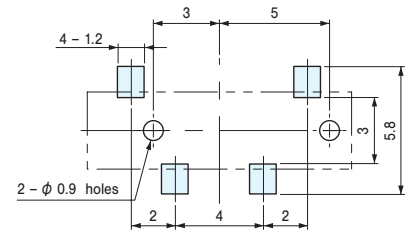
● CL-SB-22B-□□



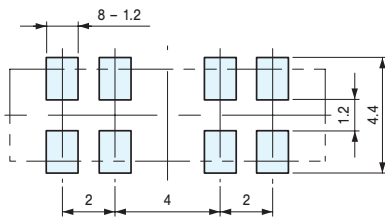
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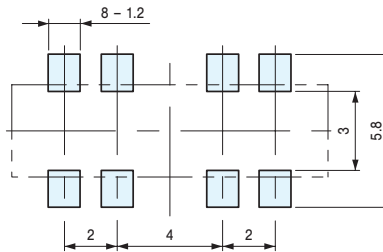
● CL-SB-13B-□□



● CL-SB-23A-□□



● CL-SB-23B-□□

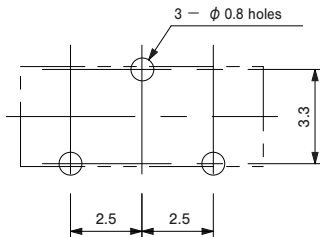


SIZE OF P.C.B. PROCESSING

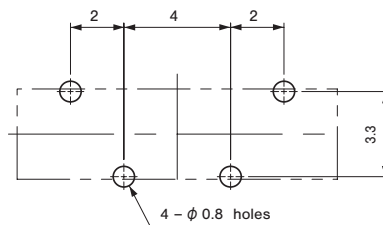
(Unit: mm)

● CL-SB-12C-□□

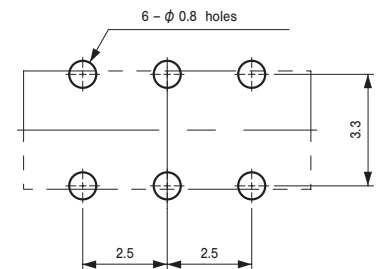
● CL-SB-12C1-11



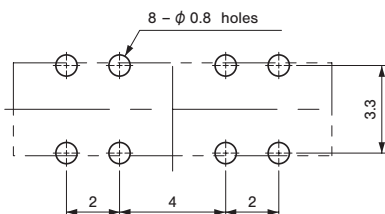
● CL-SB-13C-□□



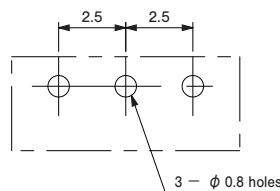
● CL-SB-22C-□□



● CL-SB-23C-□□



● CL-SB-12C4-11



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.

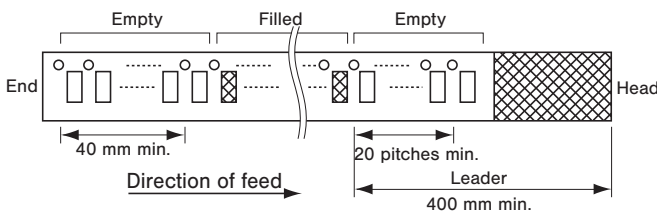
<Taping packaging specifications>

- 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:

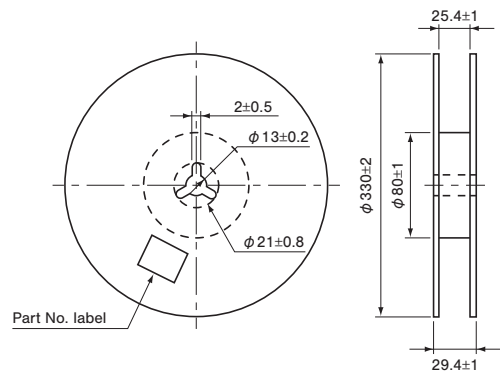
● Embossed tape dimensions



● Reel dimensions (Unit: mm)

(Conforms to JIS C 0806-3)

(EIAJ ET-7200A に準拠 In accordance with EIAJ ET-7200A)



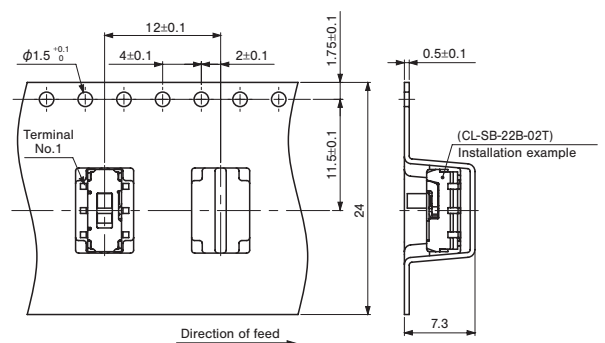
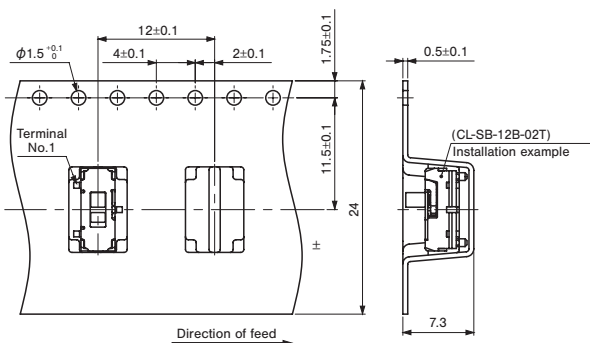
<Tape dimensions>

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)



CL-SB SLIDE SWITCHES

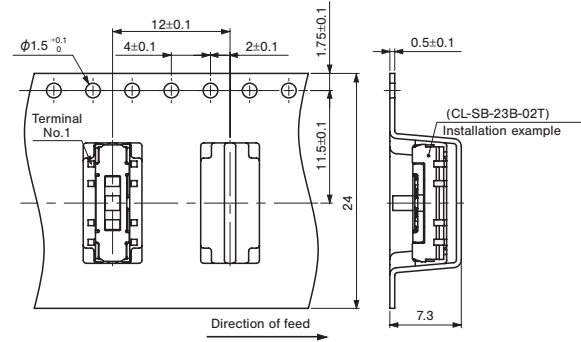
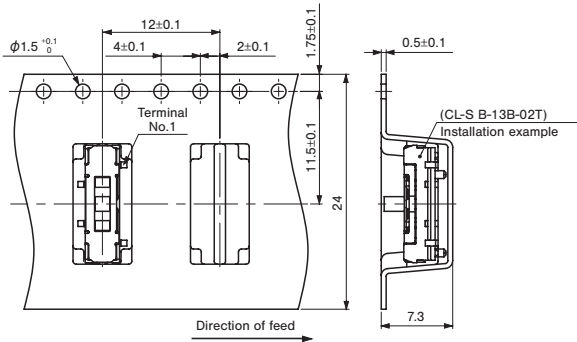
<Tape dimensions>

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

● CL-SB-13A/13B-0□T

● CL-SB-23A/23B-0□T

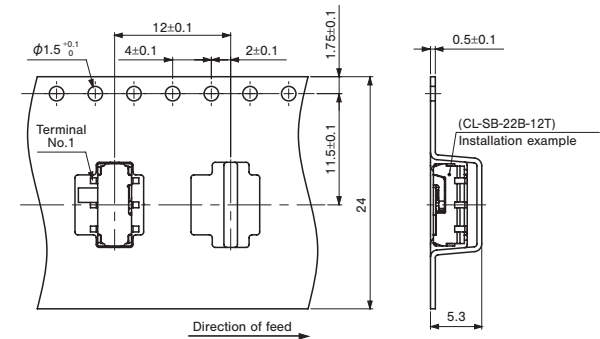
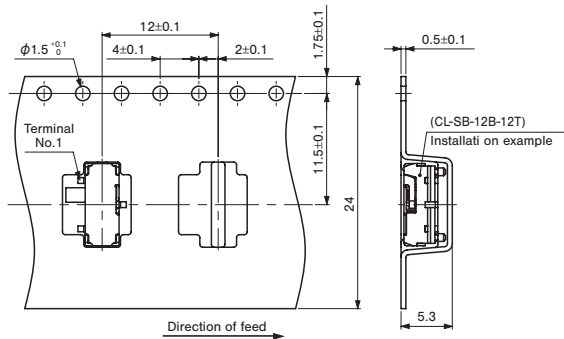
(Conforms to JIS C 0806)



● 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)

