



**THE DATASHEET OF
CL-SB-13B-02T**



SLIDE SWITCHES

CL-SB



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
- Resin material is UL Recognized 94V-0

INTERNAL STRUCTURE



Part name	Material
① Cover	Stainless steel (SUS 304)
② Slider	Polyamido
③ Housing	Polyphenylenesulfide
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

CL - SB - 2 3 B - 0 2 T

<p>Series name</p> <p>No. of poles 1 : 1 pole 2 : 2 poles</p> <p>No. of positions 2 : 2 positions 3 : 3 positions</p> <p>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</p> <p>※1: Please check the following LIST OF PART NUMBERS.</p>	<p>Form of packaging T : Taping Blank : Bulk in plastic bag</p> <p>Contact material 1 : Silver 2 : Gold</p> <p>Setting position 0 : Top setting 1 : Side setting</p>
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※ 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	Packaging quantity	
			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	500pcs. / 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

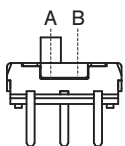
Operating temperature range	-40 ~ 85 °C
Storage temperature range	
Sealing	Non- Washable
Net weight	0.21 g (CL-SB-12 ⁺ -0 [*]) 0.21 g (CL-SB-12 ⁺ -1 [*]) 0.22 g (CL-SB-22 ⁺ -0 [*]) 0.23 g (CL-SB-22 ⁺ -1 [*]) 0.26 g (CL-SB-13 ⁺ -0 [*]) 0.27 g (CL-SB-13 ⁺ -1 [*]) 0.28 g (CL-SB-23 ⁺ -0 [*]) 0.29 g (CL-SB-23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

MECHANICAL CHARACTERISTICS

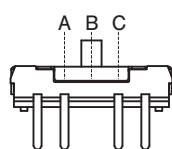
No. of positions	2, 3
Stroke	2 mm
Operation force	2 Contacts (CL-SB-*2*-**) A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf} 3 Contacts (CL-SB-*3*-**) A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}
Stop strength	20 N {2.04 kgf} 15 s
Solderability	245 ± 3 °C, 2 ~ 3 s
Soldering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



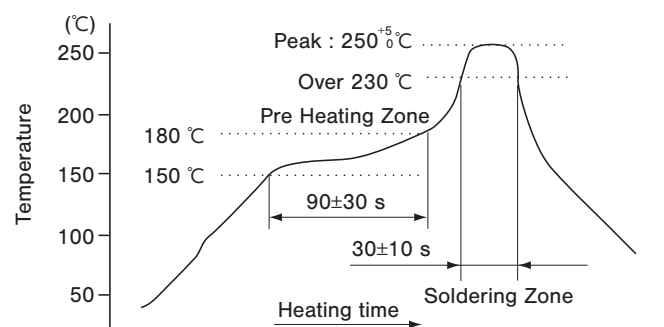
ELECTRICAL CHARACTERISTICS

Contact rating	DC50 V 200 mA	
Non-switching	DC12 V 200 mA	
Switching	DC20 mV 1 μA (Gold contacts)	
Minimum	DC5 V 10 mA (Silver contacts)	
Contact timing	Non-shorting	
Contact resistance	70mΩ maximum (Gold contacts)	1.5 mA 1 kHz 20 mV maximum (Silver contacts)
	50mΩ maximum (Silver contacts)	
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>



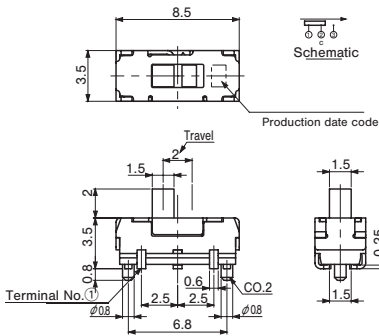
Reflow : two times maximum

CL-SB SLIDE SWITCHES

OUTLINE DIMESIONS

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

- CL-SB-12A-01
- CL-SB-12A-02



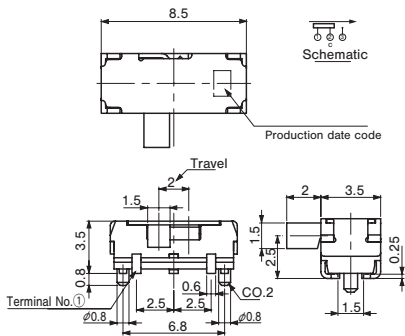
- CL-SB-12B-01
- CL-SB-12B-02



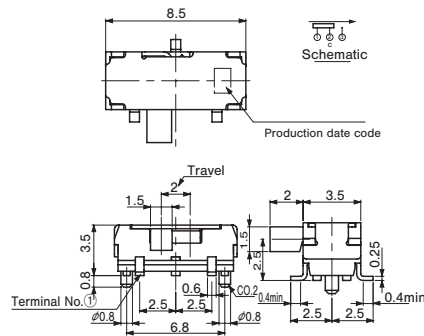
- CL-SB-12C-01
- CL-SB-12C-02



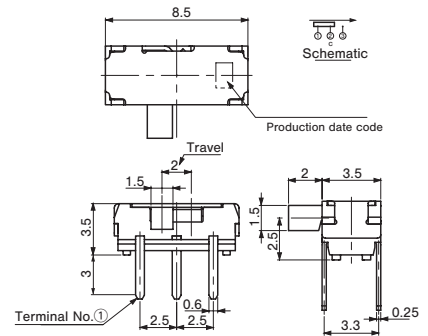
- CL-SB-12A-11
- CL-SB-12A-12



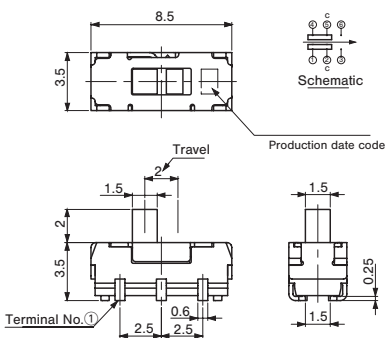
- CL-SB-12B-11
- CL-SB-12B-12



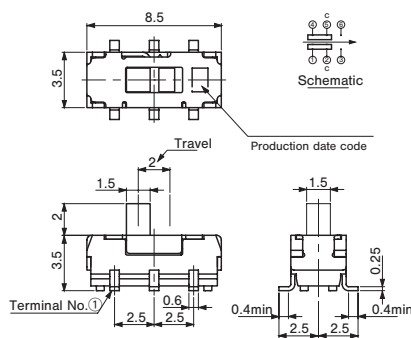
- CL-SB-12C-11
- CL-SB-12C-12



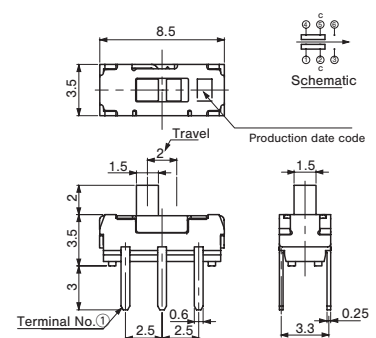
- CL-SB-22A-01
- CL-SB-22A-02



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



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



CL-SB

SLIDE SWITCHES

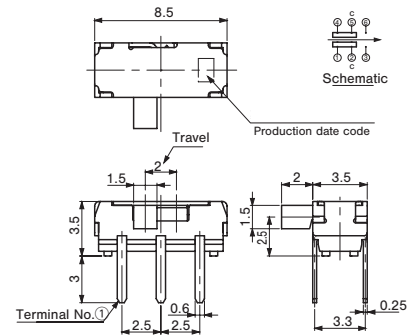
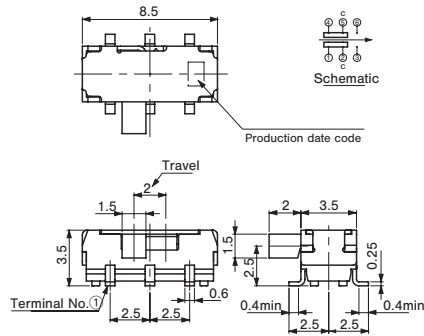
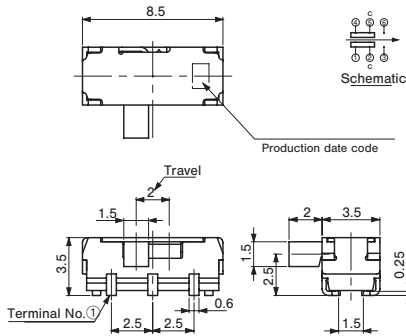
OUTLINE DIMENSIONS

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

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

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

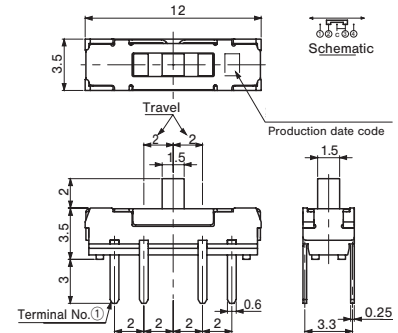
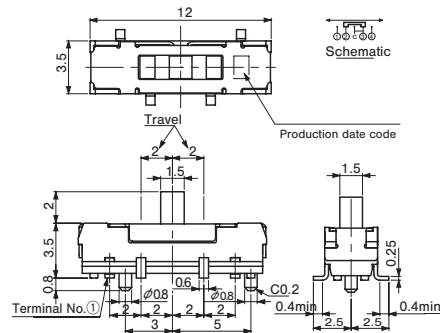
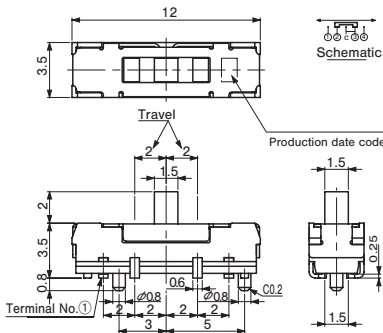
- CL-SB-22C-11
- CL-SB-22C-12



- CL-SB-13A-01
- CL-SB-13A-02

- CL-SB-13B-01
- CL-SB-13B-02

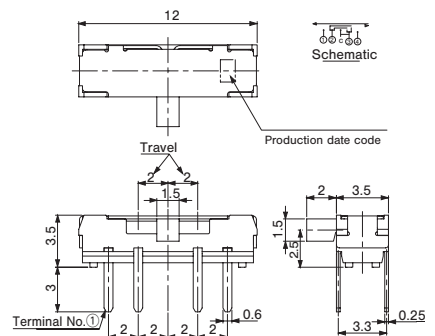
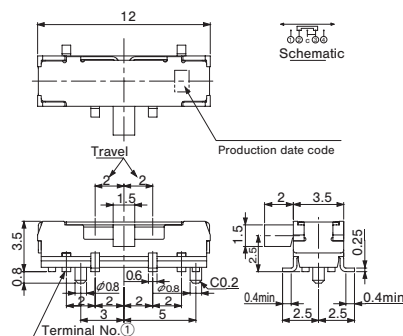
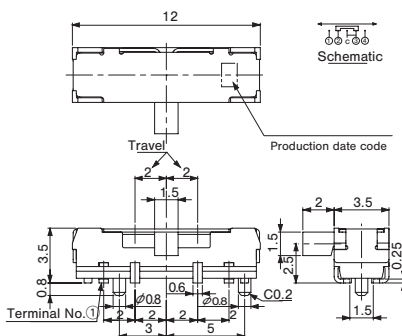
- CL-SB-13C-01
- CL-SB-13C-02



- 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

- CL-SB-23A-01
- CL-SB-23A-02



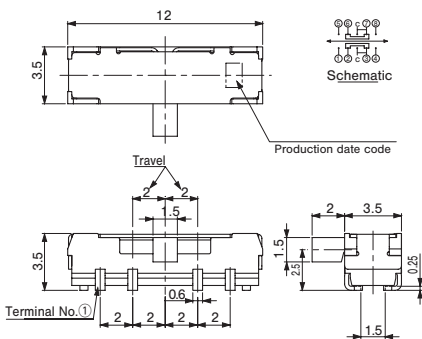
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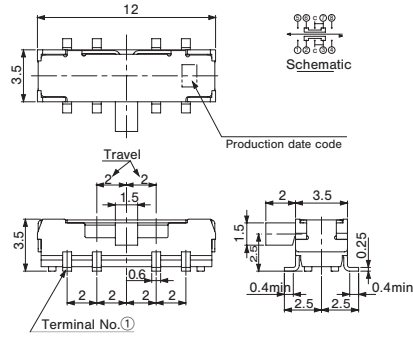
- CL-SB-23C-01
- CL-SB-23C-02



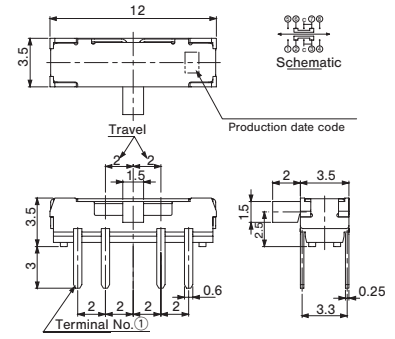
- CL-SB-23A-11
- CL-SB-23A-12



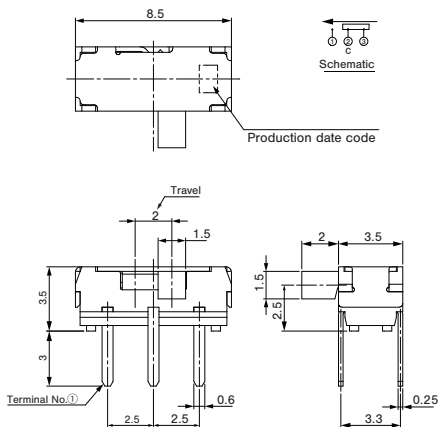
- CL-SB-23B-11
- CL-SB-23B-12



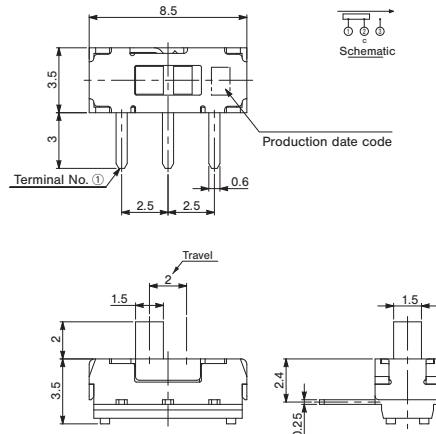
- CL-SB-23C-11
- CL-SB-23C-12



- CL-SB-12C1-11



- CL-SB-12C4-11



CL-SB

SLIDE SWITCHES

RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit:mm)

CL-SB-12A-□□



CL-SB-12B-□□



CL-SB-22A-□□



CL-SB-22B-□□



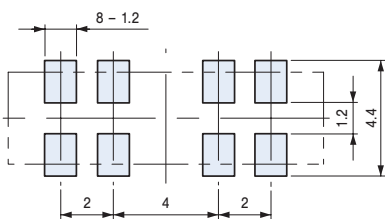
CL-SB-13A-□□



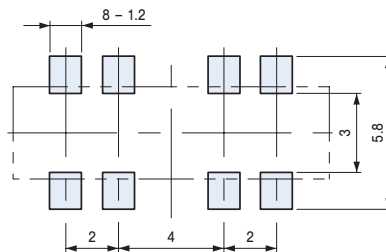
CL-SB-13B-□□



CL-SB-23A-□□



CL-SB-23B-□□



SIZE OF P.C.B. PROCESSING

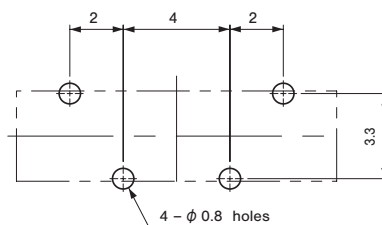
(Unit: mm)

CL-SB-12C-□□

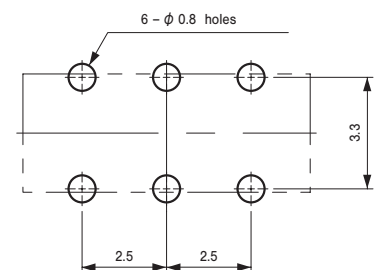
CL-SB-12C1-11



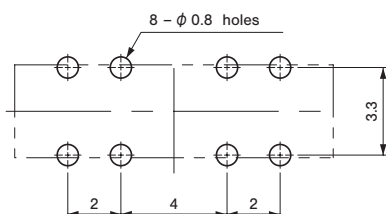
CL-SB-13C-□□



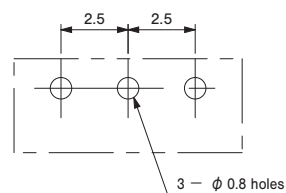
CL-SB-22C-□□



CL-SB-23C-□□



CL-SB-12C4-11



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.

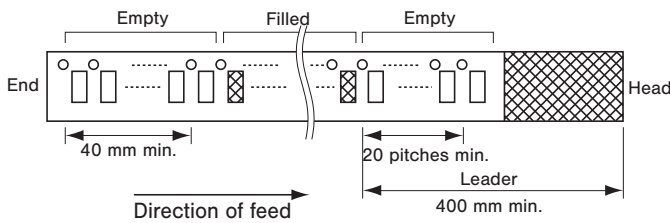
<Taping packaging specifications>

- 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:

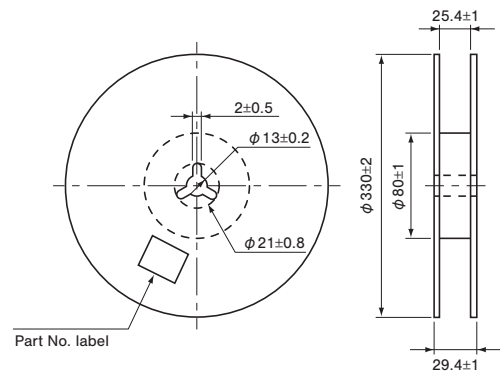
● Embossed tape dimensions



● Reel dimensions

(Unit: mm)

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



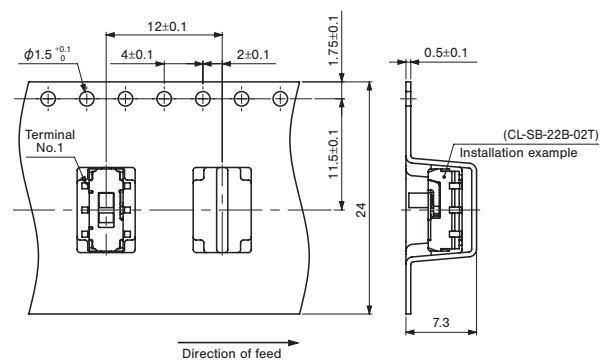
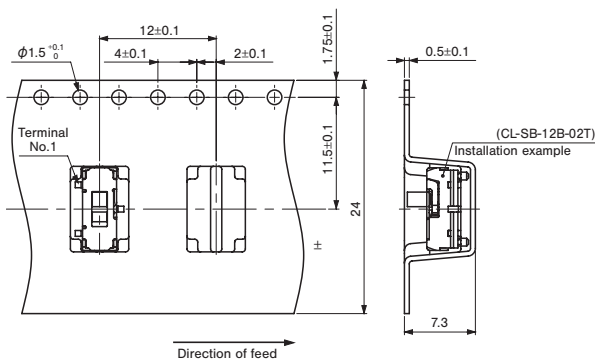
<Tape dimensions>

Unless otherwise specified, tolerance: ± 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

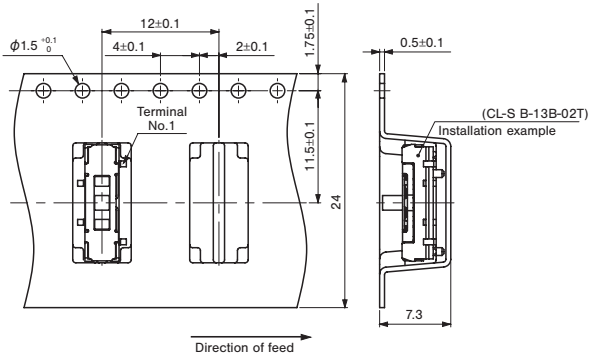
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Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

● CL-SB-13A/13B-0□T

● CL-SB-23A/23B-0□T

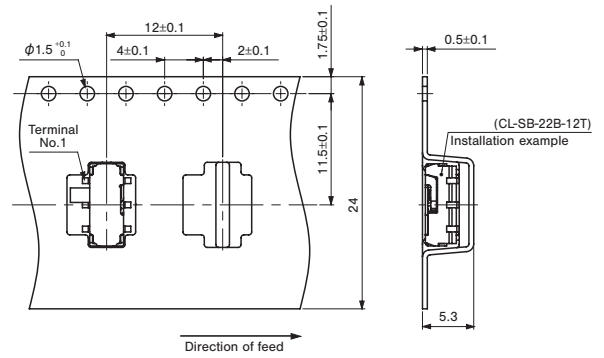
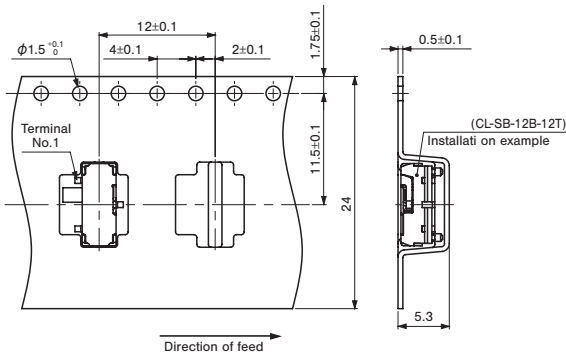
(Conforms to JIS C 0806)



● CL-SB-12A/12B-1□T

● CL-SB-22A/22B-1□T

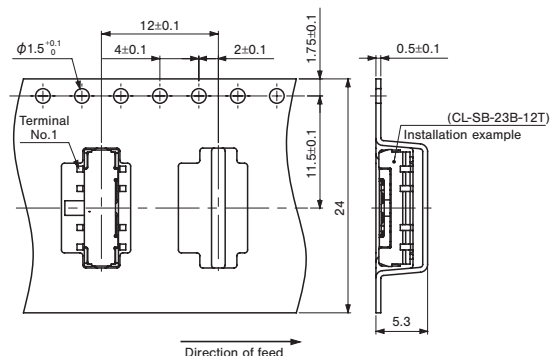
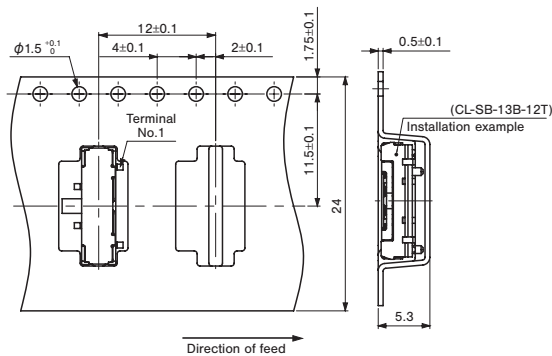
(Conforms to JIS C 0806)



● CL-SB-13A/13B-1□T

● CL-SB-23A/23B-1□T

(Conforms to JIS C 0806)



Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View CL-SB-13B-02T on WIN SOURCE](#)
- ⊖ [Nidec Copal Electronics Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management