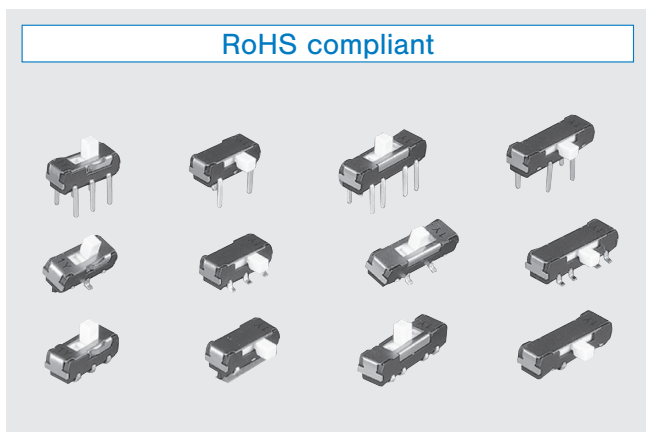


SLIDE SWITCHES

CL-SB

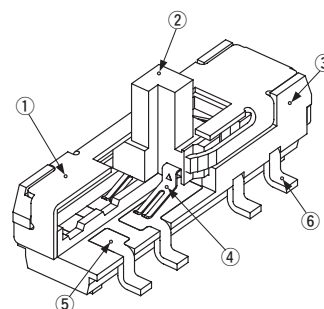
RoHS compliant



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
- 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	
Series name	Form of packaging
No. of poles	T : Taping
1 : 1 pole	Blank : Bulk in plastic bag
2 : 2 poles	Contact material
No. of positions	1 : Silver
2 : 2 positions	2 : Gold
3 : 3 positions	Setting position
Shape of terminal	0 : Top setting
A : J-hook	1 : Side setting
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.

※ 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

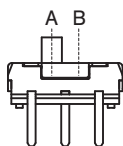
Operating temperature range	-40 ~ 85 °C
Storage temperature range	
Sealing	Non- Washable
Net weight	0.21 g (CL-SB-12*-0*) 0.21 g (CL-SB-12*-1*) 0.22 g (CL-SB-22*-0*) 0.23 g (CL-SB-22*-1*) 0.26 g (CL-SB-13*-0*) 0.27 g (CL-SB-13*-1*) 0.28 g (CL-SB-23*-0*) 0.29 g (CL-SB-23*-1*) 0.21 g (CL-SB-12C1-11) 0.19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

MECHANICAL CHARACTERISTICS

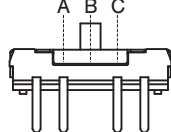
No. of positions	2, 3
Stroke	2 mm
Operation force	2 Contacts (CL-SB-*2*-**) A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf} 3 Contacts (CL-SB-*3*-**) A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf}
Stop strength	20 N {2.04 kgf} 15 s
Solderability	245 ± 3 °C, 2 ~ 3 s
Soldering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



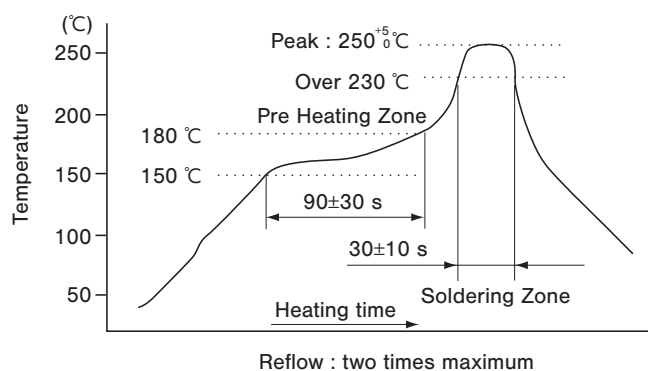
ELECTRICAL CHARACTERISTICS

Contact rating 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



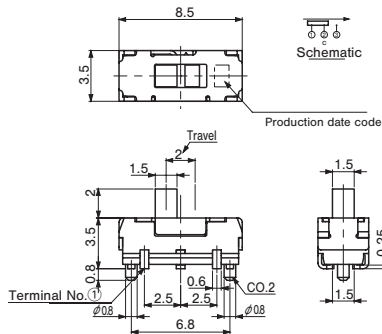
CL-SB

SLIDE SWITCHES

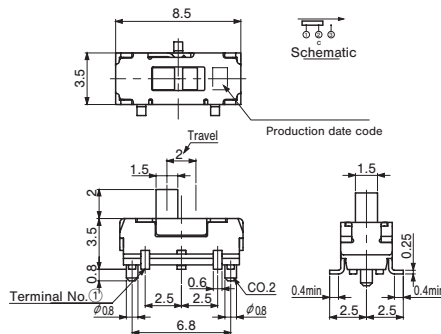
OUTLINE DIMENSIONS

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

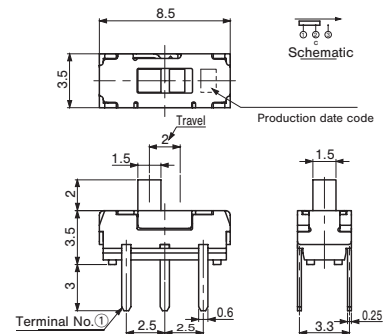
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- CL-SB-12A-02



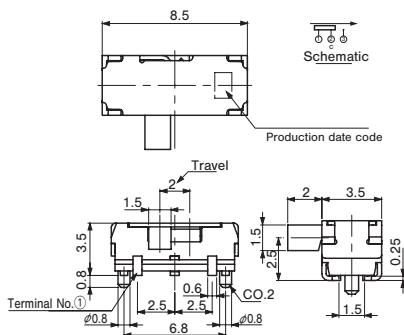
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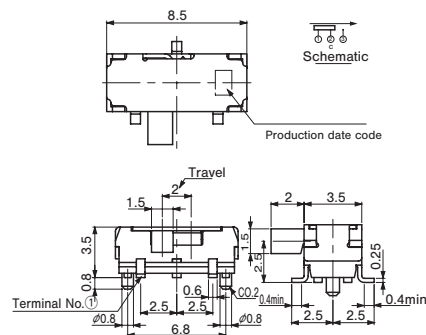
- CL-SB-12C-01
- CL-SB-12C-02



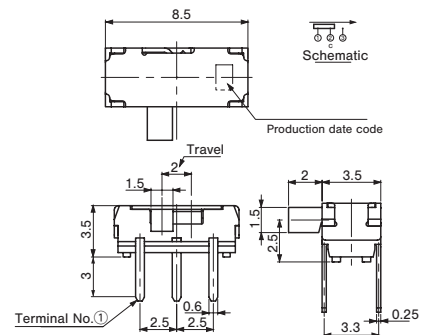
- CL-SB-12A-11
- CL-SB-12A-12



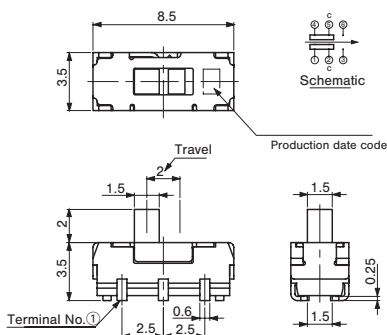
- CL-SB-12B-11
- CL-SB-12B-12



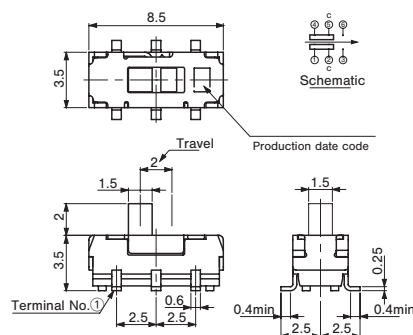
- CL-SB-12C-11
- CL-SB-12C-12



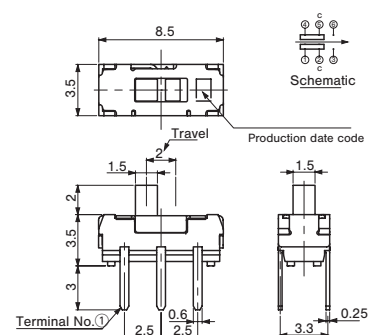
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- CL-SB-22B-01
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- CL-SB-22C-01
- CL-SB-22C-02



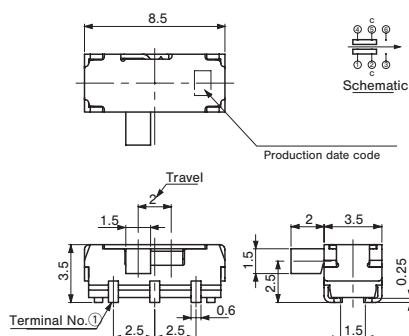
CL-SB

SLIDE SWITCHES

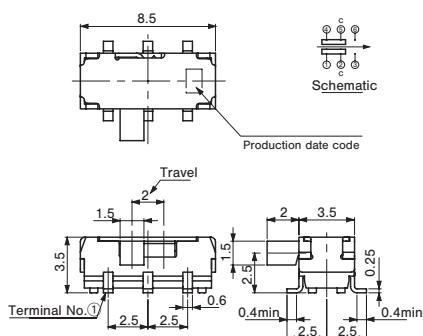
OUTLINE DIMENSIONS

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

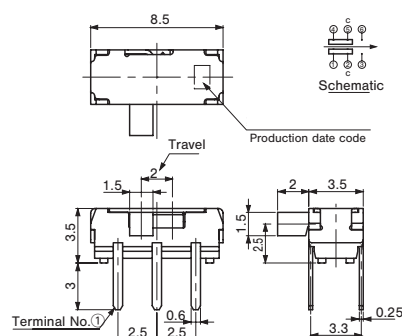
- CL-SB-22A-11
- CL-SB-22A-12



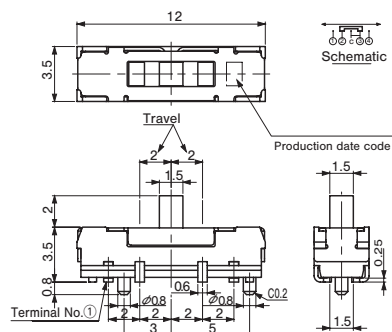
- CL-SB-22B-11
- CL-SB-22B-12



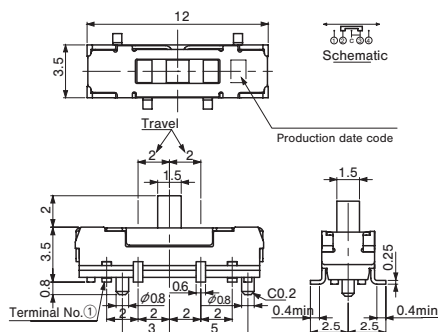
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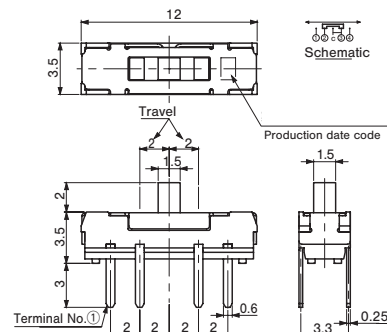
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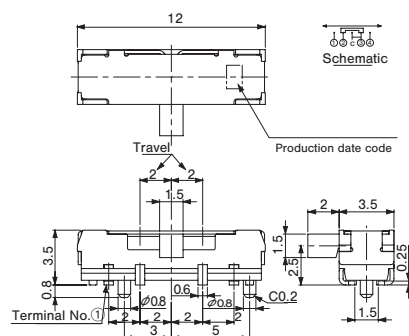
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- CL-SB-13B-02



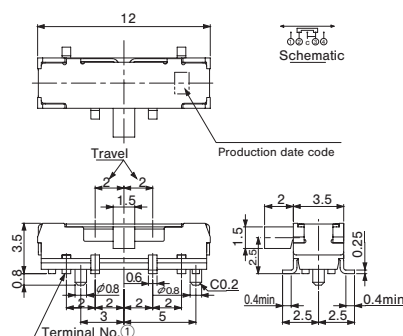
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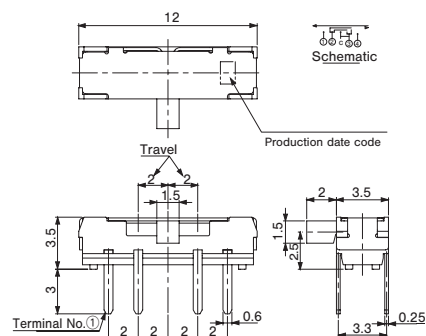
- CL-SB-13A-11
- CL-SB-13A-12



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



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

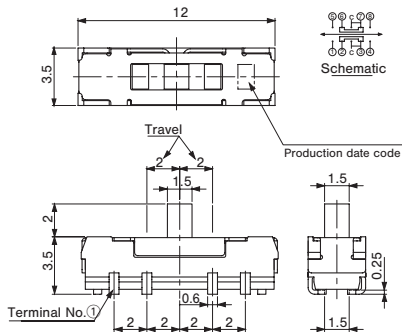


CL-SB

SLIDE SWITCHES

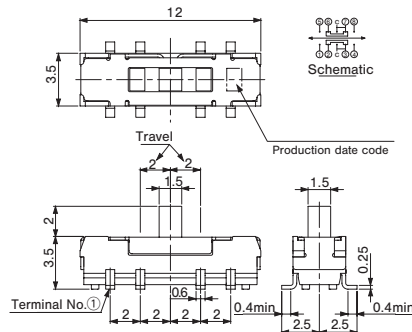
● CL-SB-23A-01

● CL-SB-23A-02



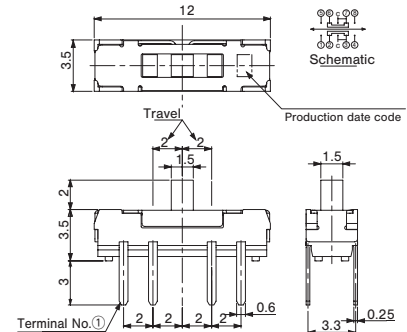
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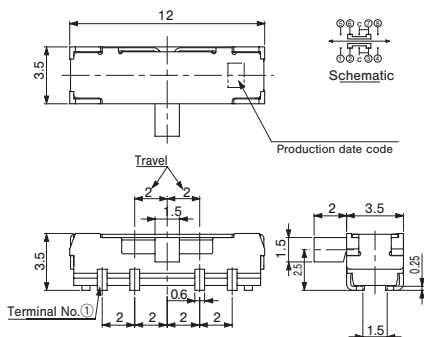
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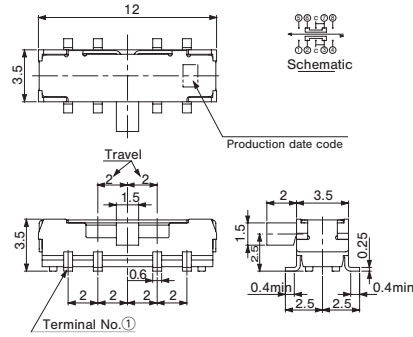
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● CL-SB-23A-12



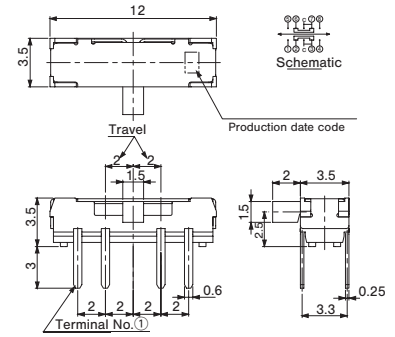
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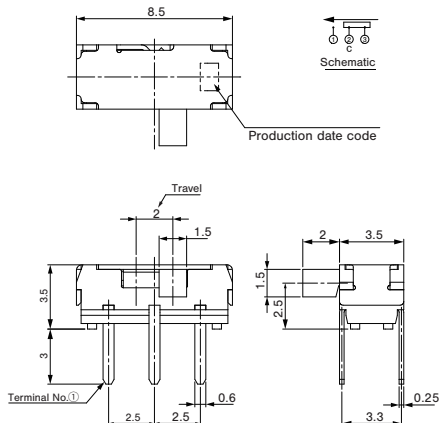


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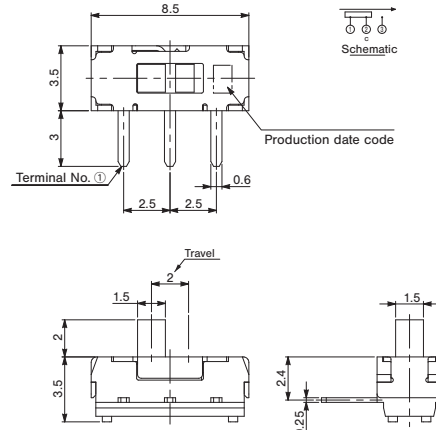
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● CL-SB-12C1-11



● CL-SB-12C4-11



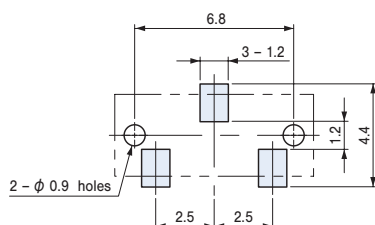
CL-SB

SLIDE SWITCHES

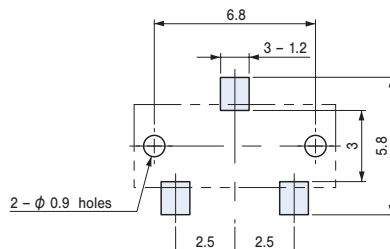
RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit:mm)

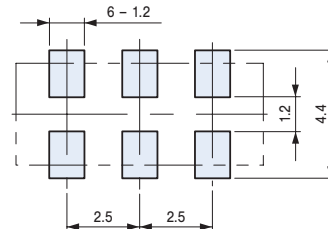
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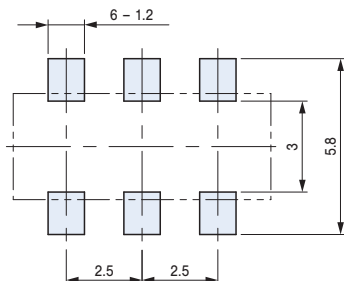
CL-SB-12B-□□



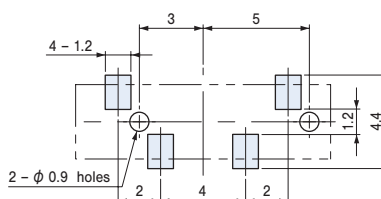
CL-SB-22A-□□



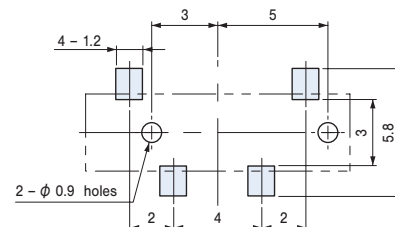
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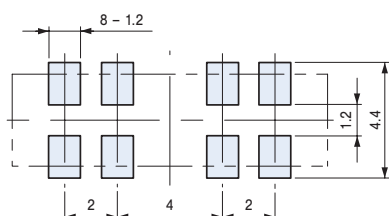
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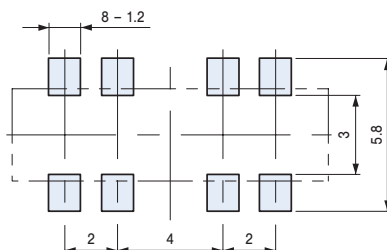
CL-SB-13B-□□



CL-SB-23A-□□



CL-SB-23B-□□

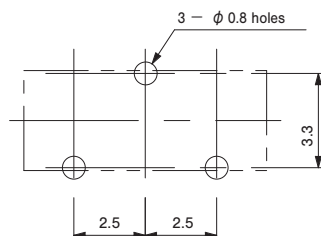


SIZE OF P.C.B. PROCESSING

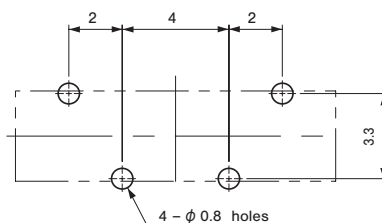
(Unit: mm)

CL-SB-12C-□□

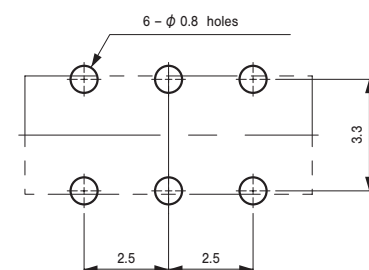
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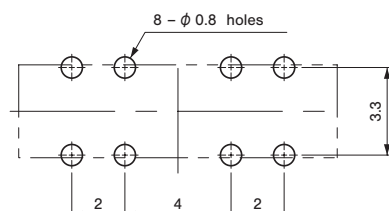
CL-SB-13C-□□



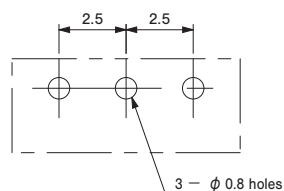
CL-SB-22C-□□



CL-SB-23C-□□



CL-SB-12C4-11



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Boxing of bulk in a plastic bag is performed with 50 pcs. (standard 100 pcs.) per box.

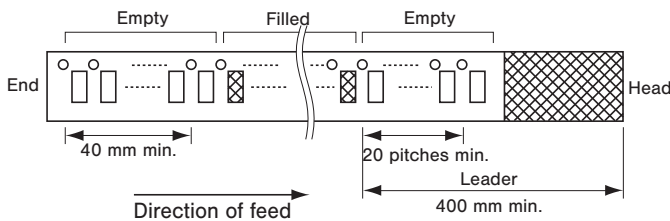
<Taping packaging specifications>

- 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:

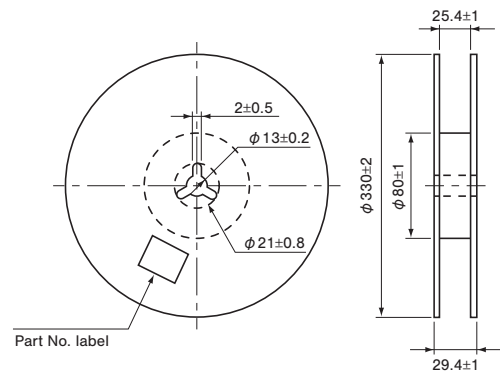
● Embossed tape dimensions



● Reel dimensions

(Unit: mm)

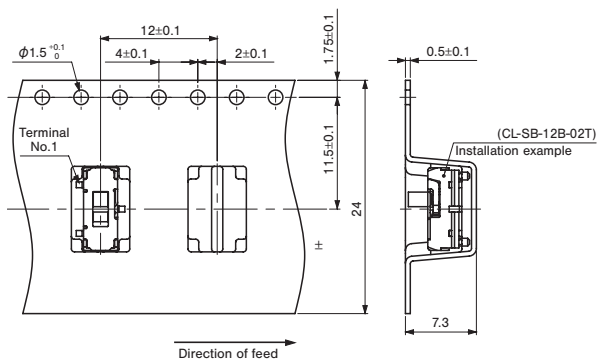
(Conforms to JIS C 0806-3)
(In accordance with EIAJ ET-7200A)



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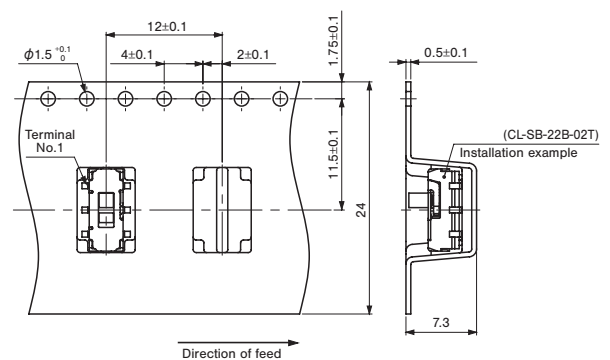
Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

● CL-SB-12A/12B-0□T



● CL-SB-22A/22B-0□T

(Conforms to JIS C 0806)



CL-SB

SLIDE SWITCHES

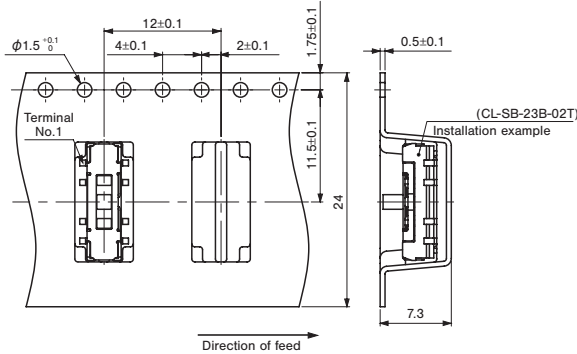
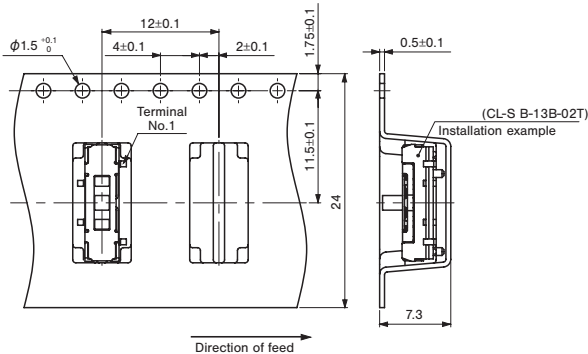
<Tape dimensions>

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

CL-SB-13A/13B-0□T

CL-SB-23A/23B-0□T

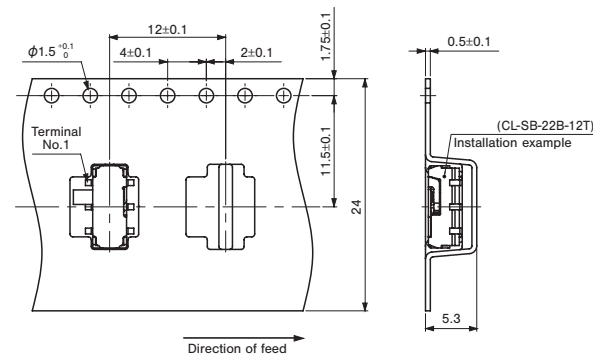
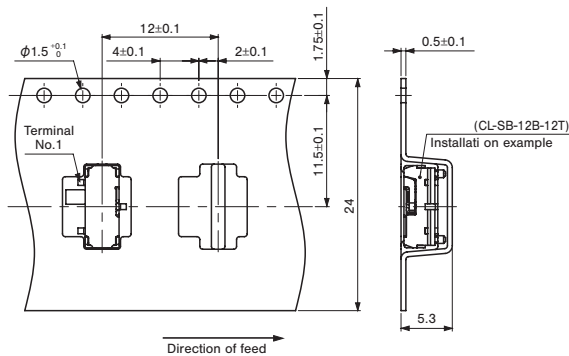
(Conforms to JIS C 0806)



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

(Conforms to JIS C 0806)

