



**THE DATASHEET OF
CL-SB-23B-01T**



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> <hr/> <p>No. of poles</p> <p>1 : 1 pole 2 : 2 poles</p> <p>No. of positions</p> <p>2 : 2 positions 3 : 3 positions</p> <p>Shape of terminal</p> <p>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</p> <p>T : Taping Blank : Bulk in plastic bag</p> <p>Contact material</p> <p>1 : Silver 2 : Gold</p> <p>Setting position</p> <p>0 : Top setting 1 : Side setting</p> |
|--|---|

※ 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

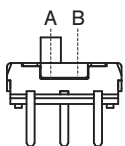
| | |
|-----------------------------|---|
| Operating temperature range | -40 ~ 85 °C |
| Storage temperature range | |
| Sealing | Non- Washable |
| Net weight | 0.21 g (CL-SB-12 ⁺ -0 [*]) 0.21 g (CL-SB-12 ⁺ -1 [*]) 0.22 g (CL-SB-22 ⁺ -0 [*]) 0.23 g (CL-SB-22 ⁺ -1 [*]) 0.26 g (CL-SB-13 ⁺ -0 [*]) 0.27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

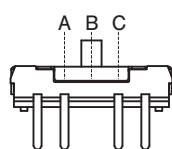
| | |
|-------------------|---|
| No. of positions | 2, 3 |
| Stroke | 2 mm |
| Operation force | 2 Contacts (CL-SB-*2*-**) A ↔ B ※ 1 1.5 ± 1.0 N {0.153 ± 0.102kgf} 3 Contacts (CL-SB-*3*-**) A→B / C→B ※ 2 1.5 ± 1.0 N {0.153 ± 0.102kgf} B→A / B→C 2.5 ± 1.5 N {0.255 ± 0.153kgf} |
| Stop strength | 20 N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



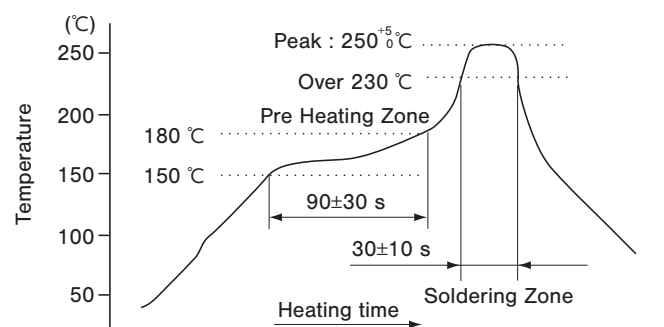
ELECTRICAL CHARACTERISTICS

| | | |
|-----------------------|--------------------------------|---|
| 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



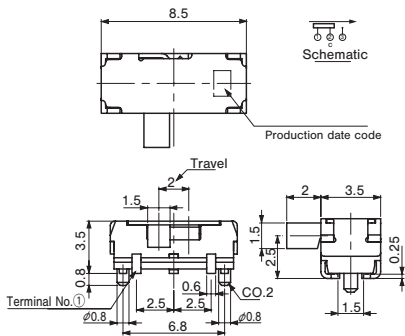
- CL-SB-12B-01
- CL-SB-12B-02



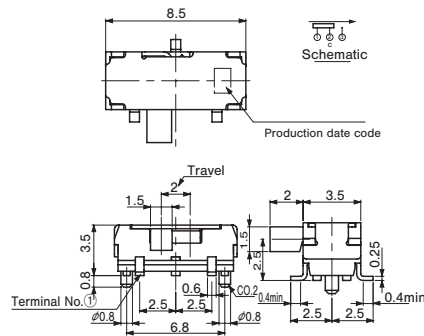
- CL-SB-12C-01
- CL-SB-12C-02



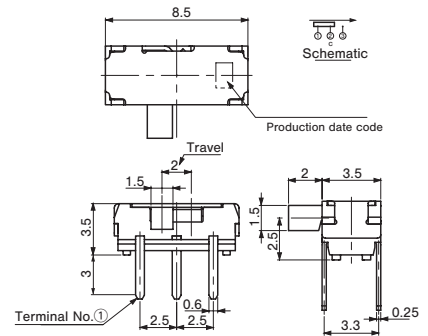
- CL-SB-12A-11
- CL-SB-12A-12



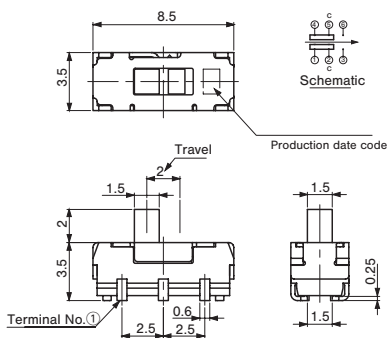
- CL-SB-12B-11
- CL-SB-12B-12



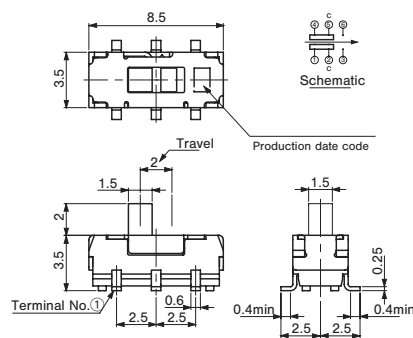
- CL-SB-12C-11
- CL-SB-12C-12



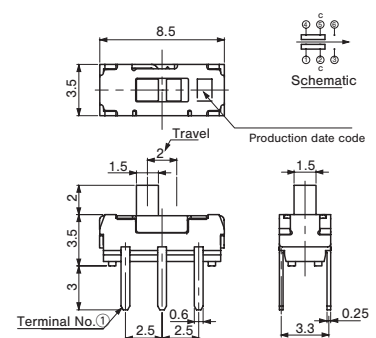
- CL-SB-22A-01
- CL-SB-22A-02



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



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



CL-SB

SLIDE SWITCHES

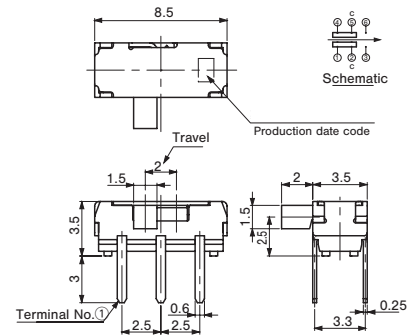
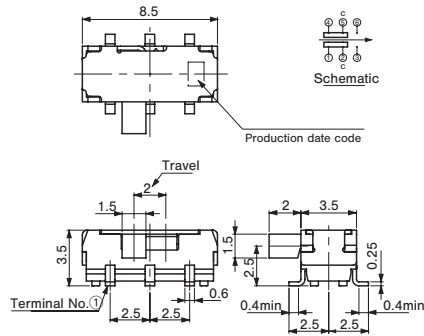
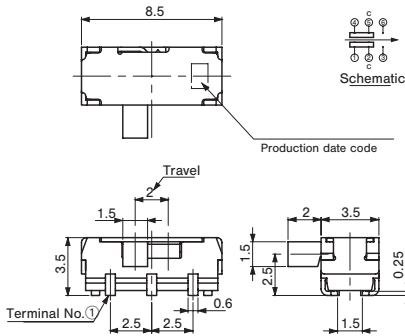
OUTLINE DIMENSIONS

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

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

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

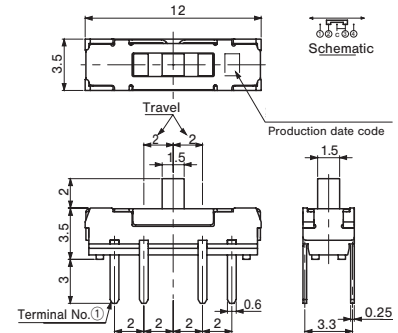
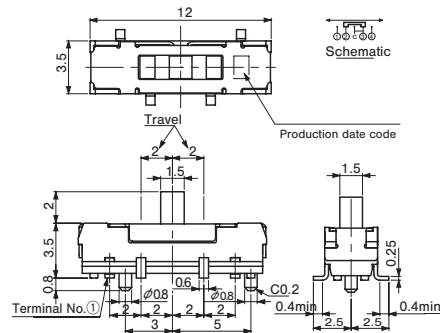
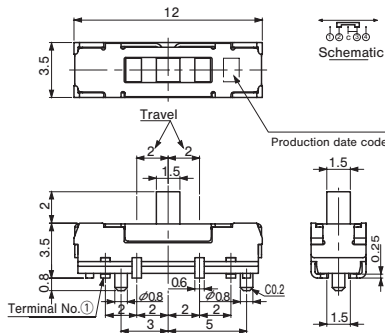
- CL-SB-22C-11
- CL-SB-22C-12



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

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

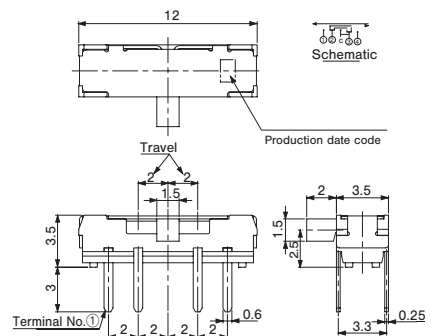
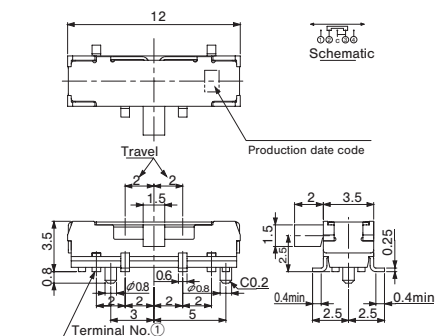
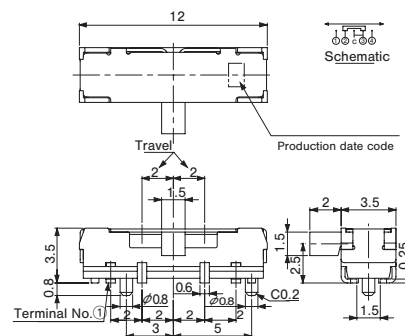
- CL-SB-13C-01
- CL-SB-13C-02



- 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



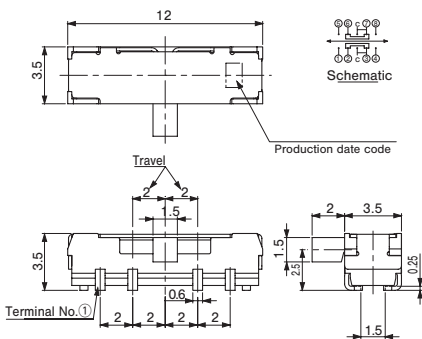
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- CL-SB-23B-02



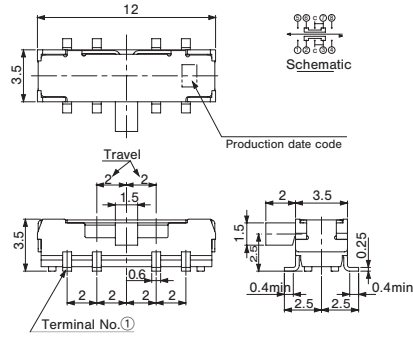
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- CL-SB-23C-02



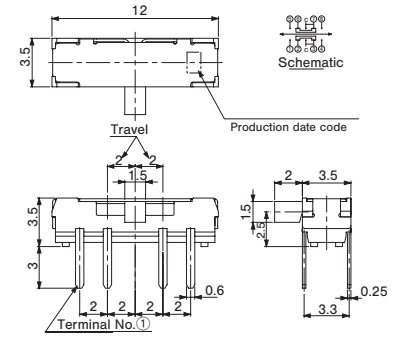
- CL-SB-23A-11
- CL-SB-23A-12



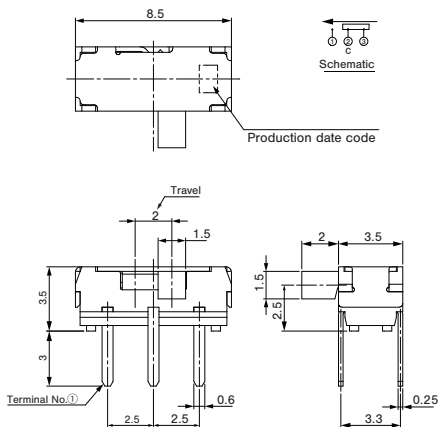
- CL-SB-23B-11
- CL-SB-23B-12



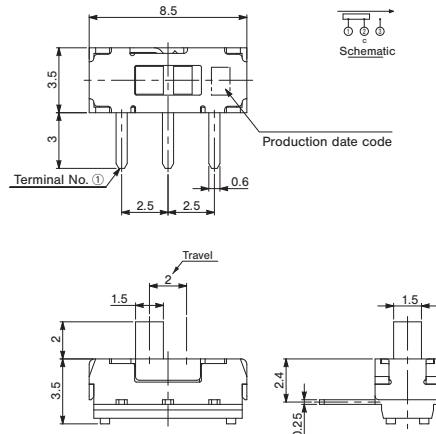
- CL-SB-23C-11
- CL-SB-23C-12



- 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-□□



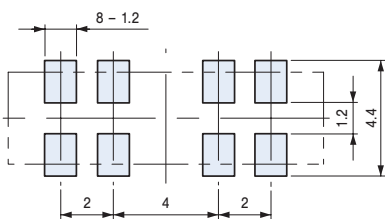
CL-SB-13A-□□



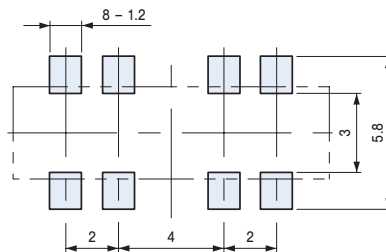
CL-SB-13B-□□



CL-SB-23A-□□



CL-SB-23B-□□



SIZE OF P.C.B. PROCESSING

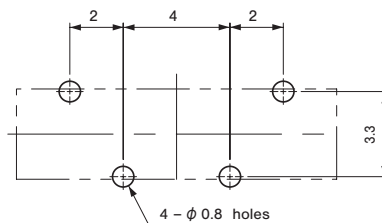
(Unit: mm)

CL-SB-12C-□□

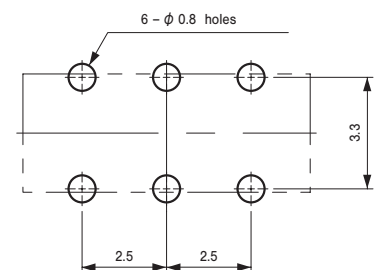
CL-SB-12C1-11



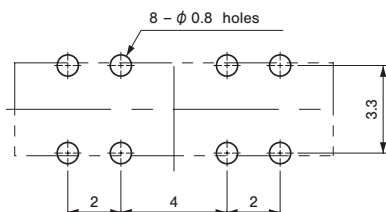
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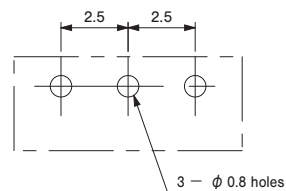
CL-SB-22C-□□



CL-SB-23C-□□



CL-SB-12C4-11



CL-SB

SLIDE SWITCHES

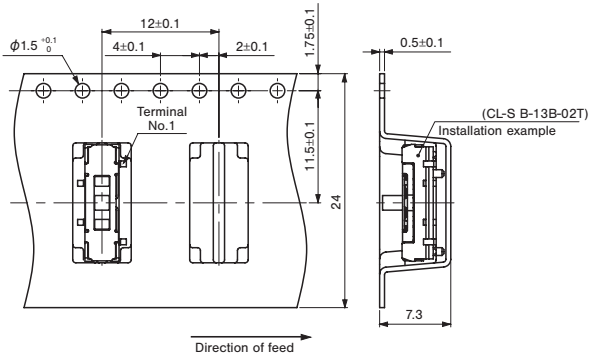
<Tape dimensions>

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

● CL-SB-13A/13B-0□T

● CL-SB-23A/23B-0□T

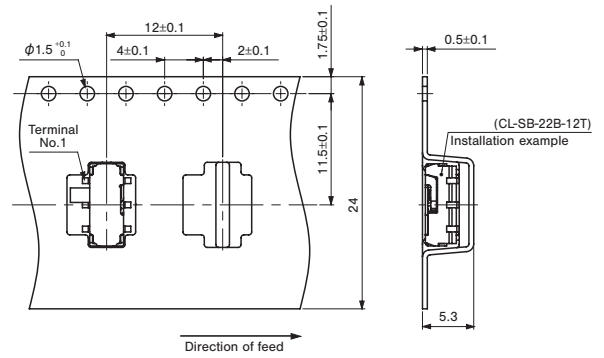
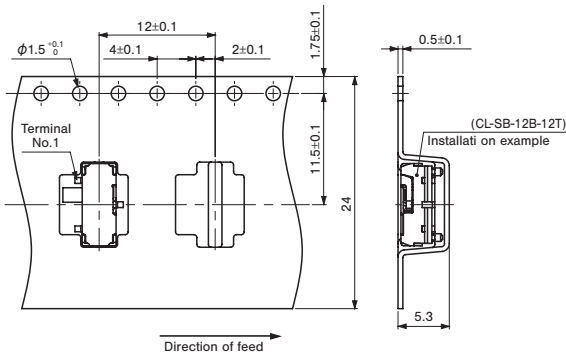
(Conforms to JIS C 0806)



● CL-SB-12A/12B-1□T

● CL-SB-22A/22B-1□T

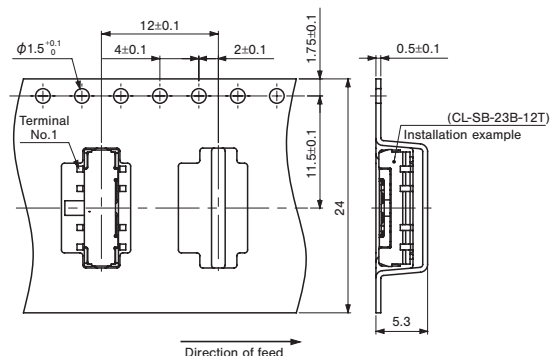
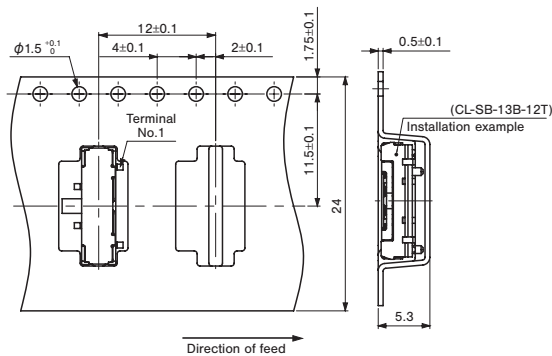
(Conforms to JIS C 0806)



● CL-SB-13A/13B-1□T

● CL-SB-23A/23B-1□T

(Conforms to JIS C 0806)



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- ✓ Excess Inventory Management