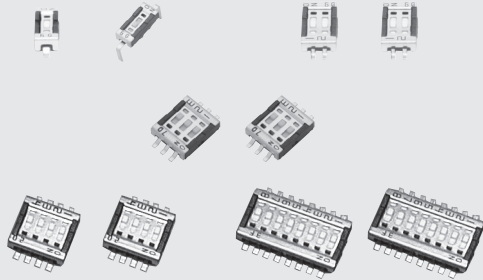


# SLIDE SWITCHES (1 mm PITCH)

# CVS

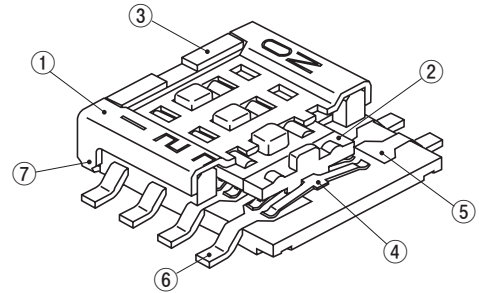
## RoHS compliant



## FEATURES

- RoHS compliant
- Lowest profile design of 1.45 mm
- Fine pitch of 1 mm
- Easy motion with knob height of 0.2 mm

## INTERNAL STRUCTURE



| Part name |                | Material                     | Flammability |
|-----------|----------------|------------------------------|--------------|
| ①         | Cover          | Stainless steel, Gold-plated | —            |
| ②         | Slider         | Polyamide                    | UL94V-0      |
| ③         | Housing        | Polyphenylenesulphide        |              |
| ④         | Slider contact | Stainless steel, Gold-plated | —            |
| ⑤         | Fixed contact  | Copper alloy, Gold-plated    |              |
| ⑥         | Terminal pin   |                              |              |
| ⑦         | Earth terminal | Stainless steel, Gold-plated |              |

## PART NUMBER DESIGNATION

|                            |             |                                                      |
|----------------------------|-------------|------------------------------------------------------|
| <b>C V S - 0 4 T B - 1</b> |             |                                                      |
| Series name                |             | Taping                                               |
|                            |             | 1 : 500 pcs./reel                                    |
|                            |             | Blank : 2000 pcs./reel                               |
| No. of bits                |             | Shape of terminal                                    |
| 01 : 1 bit                 | 04 : 4 bits | B : Gull wing                                        |
| 02 : 2 bits                | 08 : 8 bits | C : Through hole                                     |
| 03 : 3 bits                |             |                                                      |
|                            |             | Form of packaging                                    |
|                            |             | T : Taping (Reel)                                    |
|                            |             | Blank : Bulk in plastic bag (01C : Plastic bag only) |

## LIST OF PART NUMBERS

| No. of bits | Form of packaging | Shape of terminals | (Gull wing) | (Through hole) | Pieces in package |
|-------------|-------------------|--------------------|-------------|----------------|-------------------|
| 1           | Taping            |                    | CVS-01TB-1  |                | 500 pcs./reel     |
|             | Taping            |                    | CVS-01TB    |                | 2000 pcs./reel    |
|             | Plastic bag       |                    | CVS-01B     | CVS-01C        | 100 pcs./pack     |
| 2           | Taping            |                    | CVS-02TB-1  |                | 500 pcs./reel     |
|             | Taping            |                    | CVS-02TB    |                | 2000 pcs./reel    |
|             | Plastic bag       |                    | CVS-02B     |                | 100 pcs./pack     |
| 3           | Taping            |                    | CVS-03TB-1  |                | 500 pcs./reel     |
|             | Taping            |                    | CVS-03TB    |                | 2000 pcs./reel    |
|             | Plastic bag       |                    | CVS-03B     |                | 100 pcs./pack     |

| No. of bits | Form of packaging | Shape of terminals | (Gull wing) | (Through hole) | Pieces in package |
|-------------|-------------------|--------------------|-------------|----------------|-------------------|
| 4           | Taping            |                    | CVS-04TB-1  |                | 500 pcs./reel     |
|             | Taping            |                    | CVS-04TB    |                | 2000 pcs./reel    |
|             | Plastic bag       |                    | CVS-04B     |                | 100 pcs./pack     |
| 8           | Taping            |                    | CVS-08TB-1  |                | 500 pcs./reel     |
|             | Taping            |                    | CVS-08TB    |                | 2000 pcs./reel    |
|             | Plastic bag       |                    | CVS-08B     |                | 100 pcs./pack     |

# CVS

## SLIDE SWITCHES (1 mm PITCH)

### STANDARD SPECIFICATIONS

|                       |                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temp. range | - 40 ~ 85 °C                                                                                                                                                         |
| Storage temp. range   |                                                                                                                                                                      |
| Sealing               | Non-washable                                                                                                                                                         |
| Net weight            | Approx. 0.028g (CVS-01B)<br>Approx. 0.031g (CVS-01C)<br>Approx. 0.041g (CVS-02B)<br>Approx. 0.054g (CVS-03B)<br>Approx. 0.067g (CVS-04B)<br>Approx. 0.13 g (CVS-08B) |

### ELECTRICAL CHARACTERISTICS

|                                                         |                                                              |
|---------------------------------------------------------|--------------------------------------------------------------|
| Contact rating<br>Non-switching<br>Switching<br>Minimum | DC50 V 100 mA<br>DC6 V, 100 mA DC24 V, 25 mA<br>DC20 mV 1 µA |
| Contact resistance                                      | 200 mΩ maximum                                               |
| Insulation resistance                                   | 100 MΩ (DC100 V) minimum                                     |
| Dielectric strength                                     | AC250 V, 60 s                                                |

### MECHANICAL CHARACTERISTICS

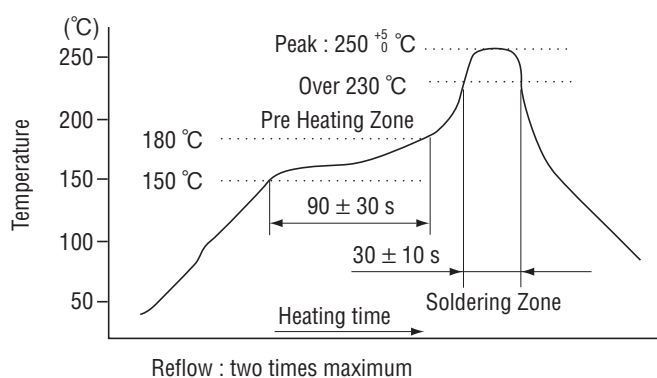
|                   |                                                                           |
|-------------------|---------------------------------------------------------------------------|
| Operating force   | 3 N {0.306 kgf} maximum                                                   |
| Stop strength     | 6 N {0.61 kgf}, 60 s                                                      |
| Solderability     | 245 ± 3 °C, 2 ~ 3 s                                                       |
| Soldering heat    | Reflow : 255 °C (Peak temperature)<br>(Please refer to the profile below) |
|                   | Manual soldering : 350 ± 10 °C, 3 ~ 4 s                                   |
| Shear (Adhesion)  | 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} 10 s                                                       |

{ } : Reference only

### ENVIRONMENTAL CHARACTERISTICS

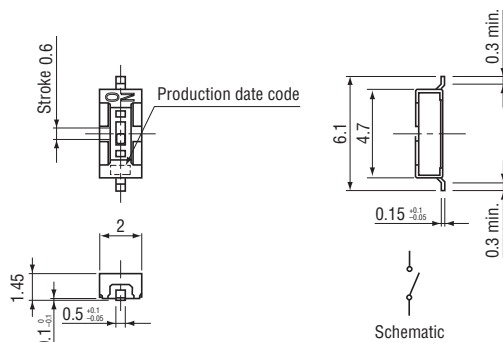
|                     |                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------|
| Vibration           | (Amplitude) 1.5 mm or<br>(Acceleration) 98 m/s <sup>2</sup> ,<br>10-500 Hz, 3 directions for 10 cycles each |
| Shock               | 490 m/s <sup>2</sup> , 11 ms<br>6 directions for 3 times each                                               |
| Load life           | Continuous load 1000 cycles,<br>DC6 ± 0.5 V, 100 ± 10 mA                                                    |
| Humidity            | -10 ~ 65 °C,<br>Relative humidity 0 ~ 96 %,<br>24 h for 10 cycles                                           |
| High temp. exposure | 85 °C, 96 h                                                                                                 |
| Low temp. exposure  | - 40 °C, 96 h                                                                                               |
| Thermal shock       | - 40 (0.5 h) ~ 85 °C (0.5 h), 5 cycles                                                                      |

### Reflow profile for soldering heat evaluation>

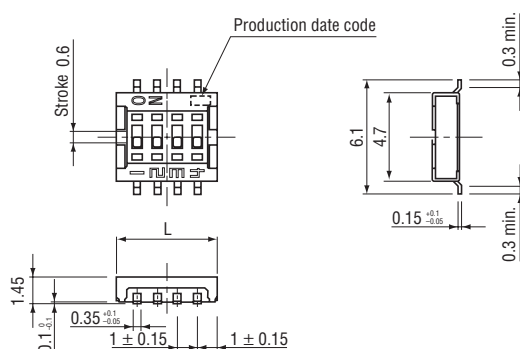


## ■ OUTLINE DIMENSIONS

● CVS-01B

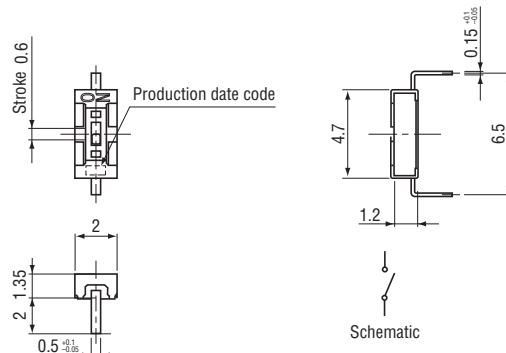


● CVS-   B



Unless otherwise specified, tolerance :  $\pm 0.3$  (Unit : mm)

● CVS-01C

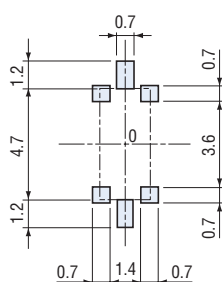


| Part number | Schematic                                                                             | No. of bits. | L dimension |
|-------------|---------------------------------------------------------------------------------------|--------------|-------------|
| CVS-02      |    | 2            | 3           |
| CVS-03      |    | 3            | 4           |
| CVS-04      |   | 4            | 5           |
| CVS-08      |  | 8            | 9           |

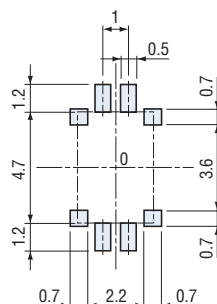
## RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

(Unit : mm)

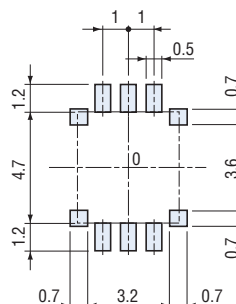
● CVS-01B



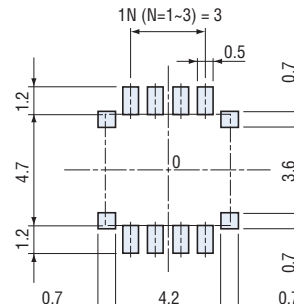
● CVS-02B



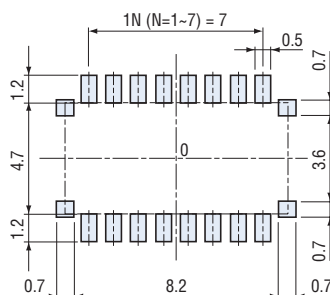
● CVS-03B



● CVS-04B

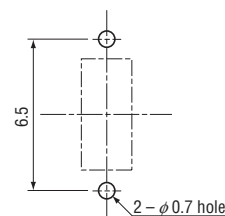


● CVS-08B



## ■ SIZE OF P.C.B. PROCESSING (Unit : mm)

● CVS-01C



### PACKAGING SPECIFICATIONS

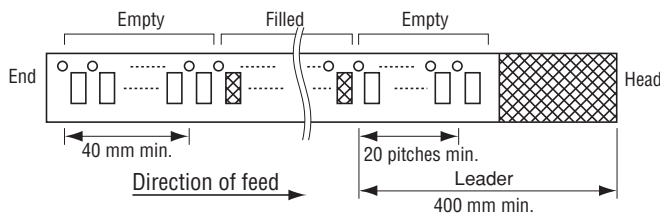
#### <Taping packaging specifications>

- Taping version is packaged in 2000 pcs. or 500 pcs. per reel. Orders will be accepted for units of 2000 pcs., i.e., 2000, 4000, 6000 pcs., etc. or for units of 500 pcs., i.e., 500, 1000, 1500 pcs., etc.

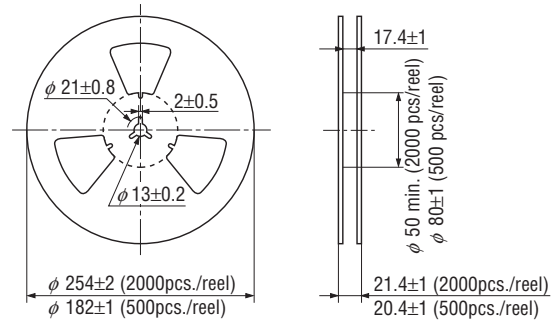
- Taping version is boxed with two reels.  
Maximum number of consecutive missing pieces = 2  
Leader length and reel dimension are shown in the diagrams below:

#### ● Embossed tape dimensions

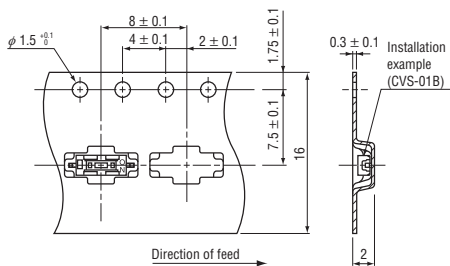
(Unit: mm)



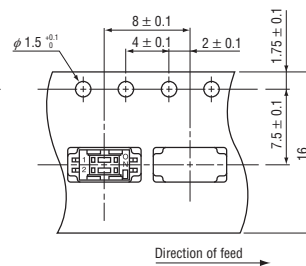
#### ● Reel dimensions (Conforms to JIS C 0806-3) (In accordance with EIAJ ET-7200A)



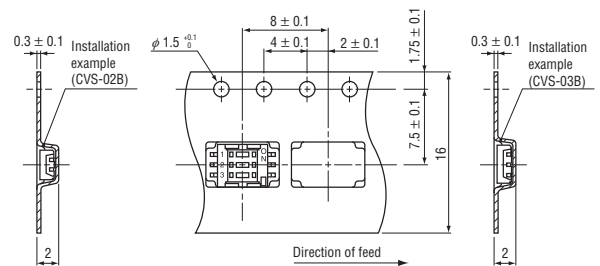
#### ● 1 bit



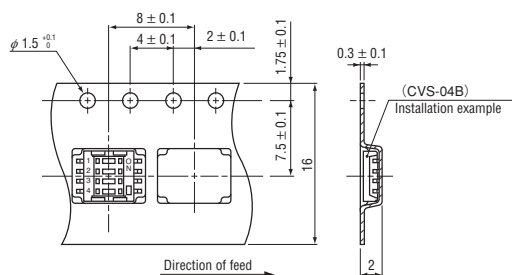
#### ● 2 bits



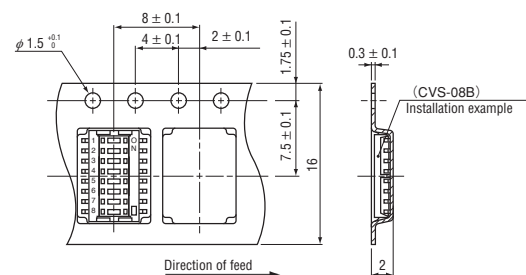
#### ● 3 bits



#### ● 4 bits



#### ● 8 bits



#### <Bulk pack specifications>

- The smallest unit of bulk pack in a 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 100 pcs. (standard 500 pcs.) per box.