

## SELU2810C–S



- External Shape Type:  $\phi 3$  Round shape type LED
- Color : Amber
- Lens color : Clear
- Material of a chip : AlGaInP
- Application : Home Appliance, Office Appliance(Factory Automation),General display.
- Feature : High Intensity Type,RoHS compliant, Compatible with heat-resistance of lead-free solder.

### ● Absolute Maximum Ratings (Ta=25°C)

| Parameter                | Symbol      | Rated   | Unit  | Remarks                        |
|--------------------------|-------------|---------|-------|--------------------------------|
| Forward current          | IF          | 30      | mA    |                                |
| Forward current derating | $\Delta$ IF | -0.45   | mA/°C | 25°C or more                   |
| Pulse forward current    | IFP         | 100     | mA    | f=1kHz , tw $\leq$ 100 $\mu$ s |
| Reverse voltage          | VR          | 3       | V     |                                |
| Operating temperature    | Topr        | -30~85  | °C    |                                |
| Storage temperature      | Tstg        | -30~100 | °C    |                                |

### ● Electro - optical characteristics (Ta=25°C)

| Parameter           | Symbol          | Condition | MIN | TYP | MAX | Unit    |
|---------------------|-----------------|-----------|-----|-----|-----|---------|
| Forward voltage     | VF              | IF = 20mA |     | 2.0 | 2.5 | V       |
| Reverse current     | IR              | VR=3V     |     |     | 10  | $\mu$ A |
| Luminous intensity  | IV              | IF = 20mA | 282 | 400 |     | mcd     |
| Peak wavelength     | $\lambda_p$     | IF = 20mA |     | 611 |     | nm      |
| Dominant wavelength | $\lambda_d$     | IF = 20mA |     | 605 |     | nm      |
| Spectral bandwidth  | $\Delta\lambda$ | IF = 20mA |     | 17  |     | nm      |
| Directional angle   | $2\theta_{1/2}$ | IF = 20mA |     | 40  |     | deg.    |

### ● Luminous intensity rank (Ta=25°C)

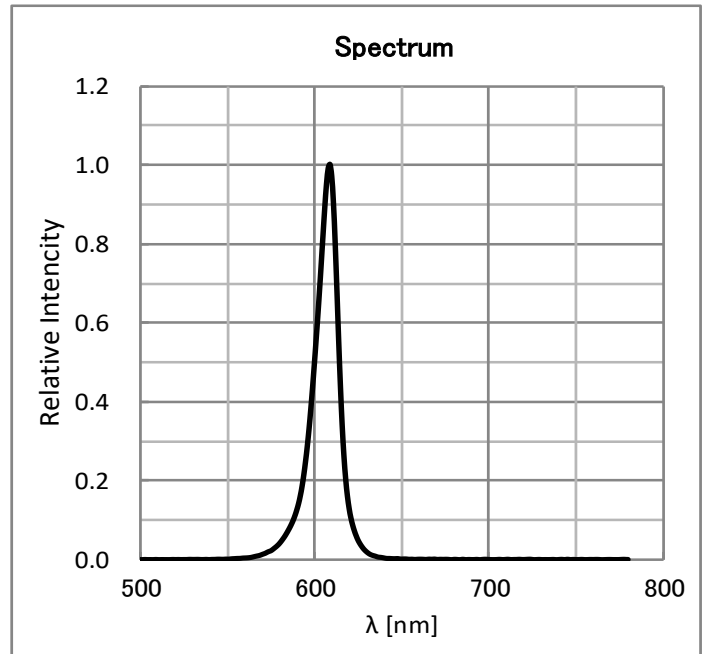
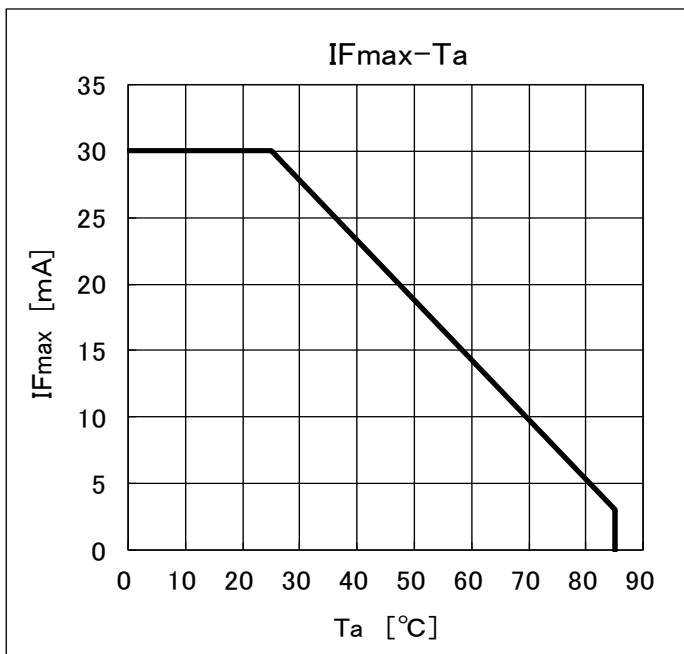
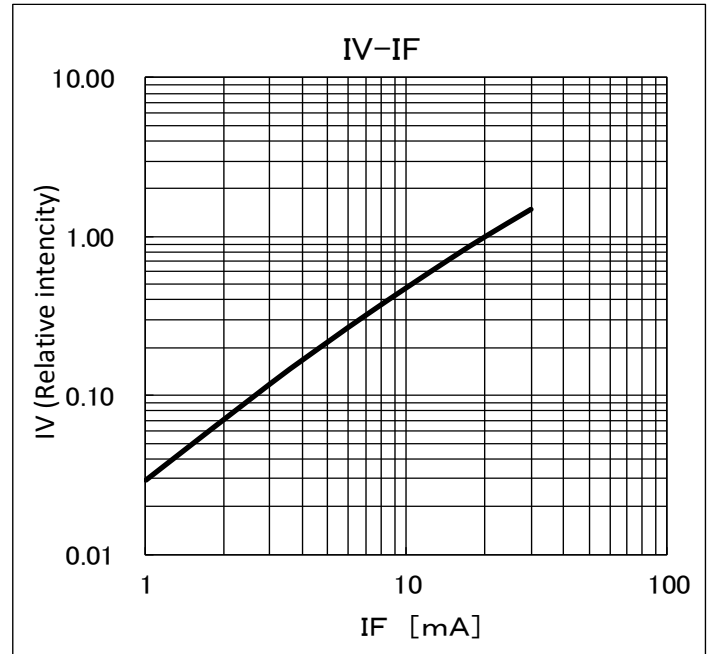
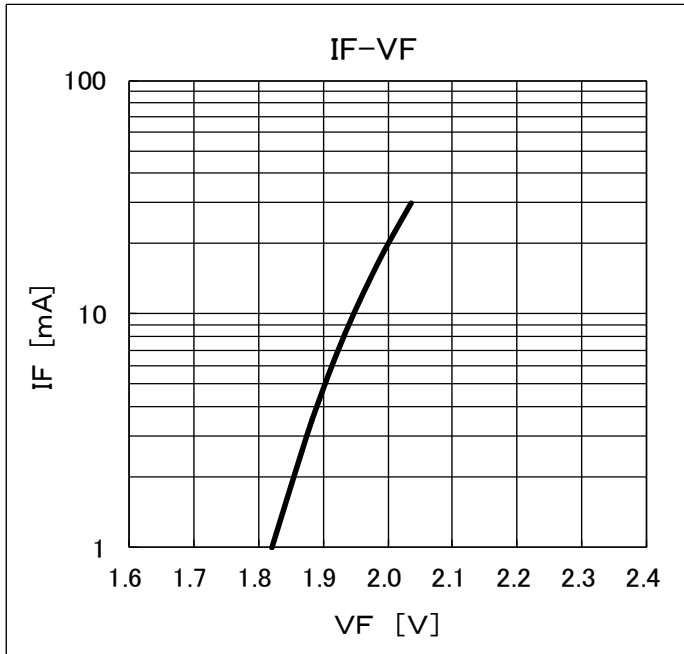
| Rank | Luminous intensity range(mcd) |        |
|------|-------------------------------|--------|
| C    | 282                           | ~ 563  |
| D    | 375                           | ~ 751  |
| E    | 501                           | ~ 1001 |
| F    | 667                           | ~      |

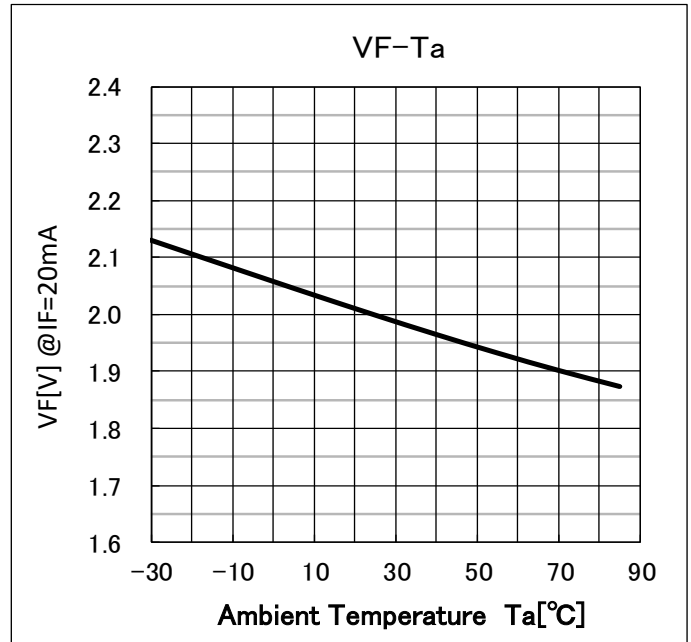
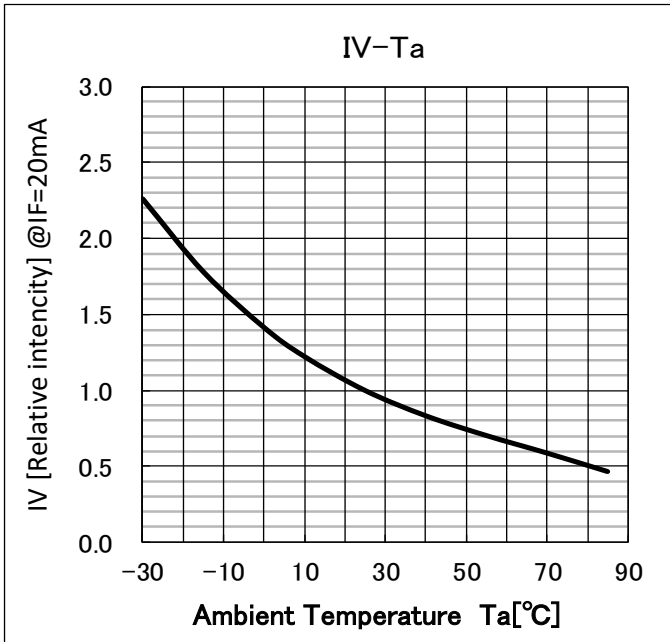
### ● Dominant wavelength rank(Ta=25°C)

| Rank | Dominant wavelength range |       |
|------|---------------------------|-------|
| Y    | 600                       | ~ 605 |
| R    | 605                       | ~ 610 |

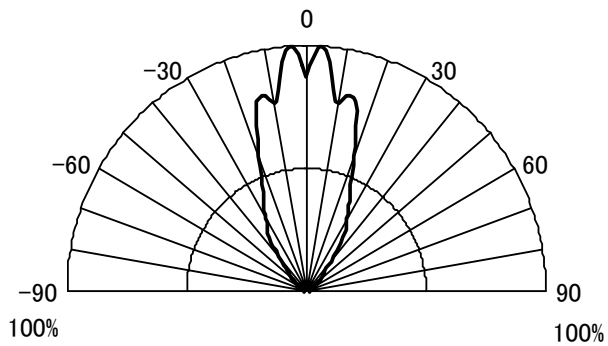
(Tolerance:  $\pm 2$ nm)

● Characteristic data

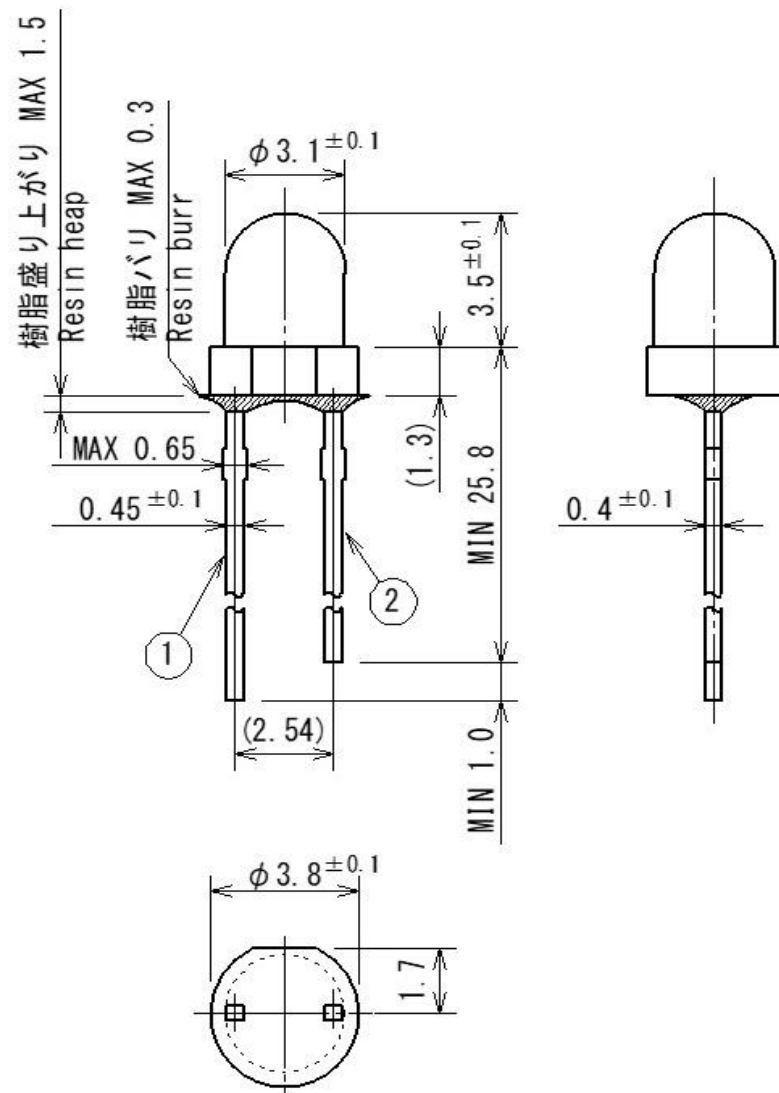




Directional angle



- SEL2010 Series
- Outline dimensions



(Unit:mm)

Terminal: ①Anode  
②Cathode

Tolerance: ±0.3

### Material & Finish of leads

|          |                        |
|----------|------------------------|
| Material | Fe + Under Plating     |
| Finish   | Solder(Sn-3.0Ag-0.5Cu) |

### Material of resin

|          |       |
|----------|-------|
| Material | Epoxy |
|----------|-------|

● Note

Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature.

The glass transition temperature of epoxy resin used for the LED is approximately 120 ~ 130°C. At a temperature exceeding this limit, the coefficient of linear expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.

If external force or stress is applied at that time, the terminal will move and it may cause a wire rupture.

Please be careful about the following when soldering.

After soldering, avoid applying external force, stress, and excessive vibration during cooling process until the LEDs cool down to normal temperature. (Same for products with terminal leads)

① Soldering measurements:

Distance between melted solder side to bottom of resin shall be 5.5 mm or longer .

② Solder dip: Preheat: 90°C max. (Backside of PCB), Within 120 seconds

Solder bath: 250°C max. (Solder temperature), Within 5 seconds

③ Soldering iron: 350°C max. (Temperature of soldering iron tip), Within 3 seconds

When SMD components are used on the same PCB, mount the LED after adhesive baking process since the resin used for the LED has a low heat resistance.

In case the adhesive baking is operated after the LED is mounted for a manufacturing process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

Baking temperature: 120°C max. Baking time: Within 60 seconds

When operating sequential soldering after the adhesive baking, perform the soldering after the LED cools down to normal temperature.

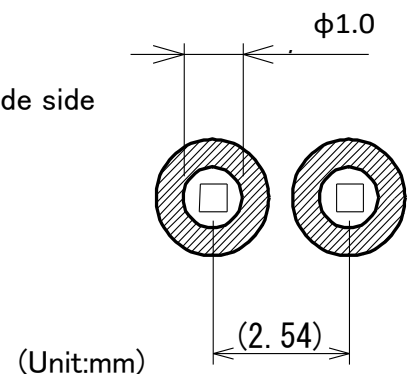
Pitch of the LED leads and pitch of mounting holes need to be the same.

Recommend following PCB for contact mount LEDs.

Recommended PCB : Single-faced PCBs with thickness 1.6mm & holes diameter  $\phi$  0.9 to 1.0mm

Do not use through holes type when using double-faced PCBs.

When doing the automatic insertion, maximize the clinch angle on the anode side of the LED so excessive remain force won't happen.



● Reliability test

|                      | Test Items                  | EIAJ ED-4701                | Test Conditions   |
|----------------------|-----------------------------|-----------------------------|---|
| Life Tests           | Steady state operating life | –                           | Ta=RT , Ifmax<br>t=1000h                                  |
| Environ-mental Tests | Hight temperature storage   | 201                         | Ta=Tstgmax<br>t=1000h                                     |
|                      | Low temperature storage     | 202                         | Ta=Tstgmin<br>t=1000h                                     |
|                      | Moisture Resistance         | 103                         | Ta=60±5°C , RH=90±5%<br>t=1000h                           |
|                      | Temperature cycle           | 105                         | Tstgmin(30min)~Tstgmax(30min)<br>100cycles                |
|                      | Soldering heat              | 301/302                     | T=260±5°C , t=10s , 1time                                 |
|                      | Solderraibility             | 303                         | T=245±5°C , t=5±1s,1time<br>Using flux for Pb free solder |
|                      | Terminal strength(pull)     | 401                         | Loading weight 5N<br>t=10s                                |
|                      | Terminal strength(bend)     | 401                         | Loading weight 2.5N<br>0 → 90° → 0                        |
| Drop                 | –                           | H=1m ,Drop on maple board . |   |

● Measurement Item and Criterion Judge Failure

| No | Measurement Item   | Mark | Criterion Judge Failure          |
|----|--------------------|------|----------------------------------|
| 1  | Forward Voltage    | VF   | $OK \leq V.F.S. \times \pm 20\%$ |
| 2  | Reverse Current    | IR   | $OK \geq U.S.L. \times 2.0$      |
| 3  | Luminous Intensity | Iv   | $OK \geq I.V.S. \times 0.5$      |

\*Solderability … The Lead shall be covered by solder at least 95%.

Measurement cnditions is based on specifications.

Tstgmax and Tstgmin is abosolute maximum ratings.

IFmax and IFPmax is absolute maximum ratings,

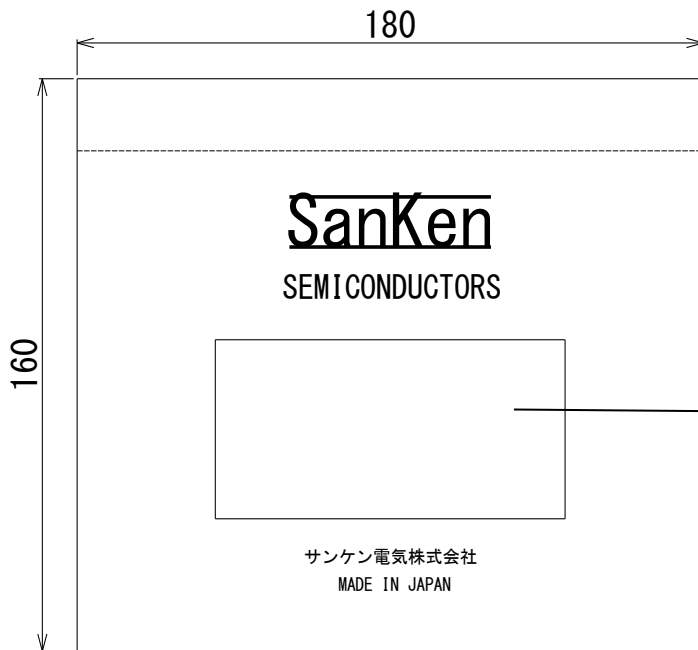
U.S.L. is upper limit of standard.

V.F.S. is Initial data of VF.

I.V.S. is Initial data of Luminous Intensity.

● Packing specifications

Smallest packing

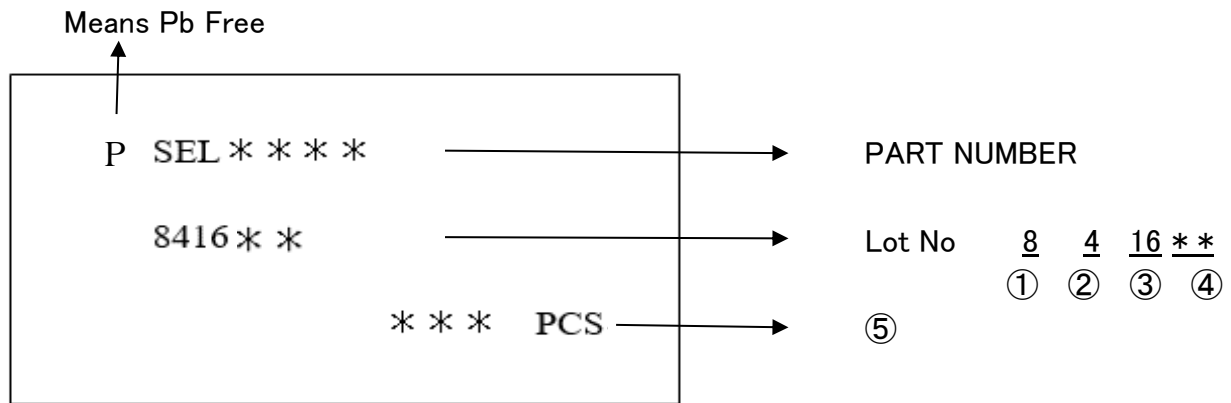


Packing material : Individual vinyl bag  
Quantity(Minimum Order Quantity) : 500pcs

Label : Label of below in the bag

(Unit:mm)

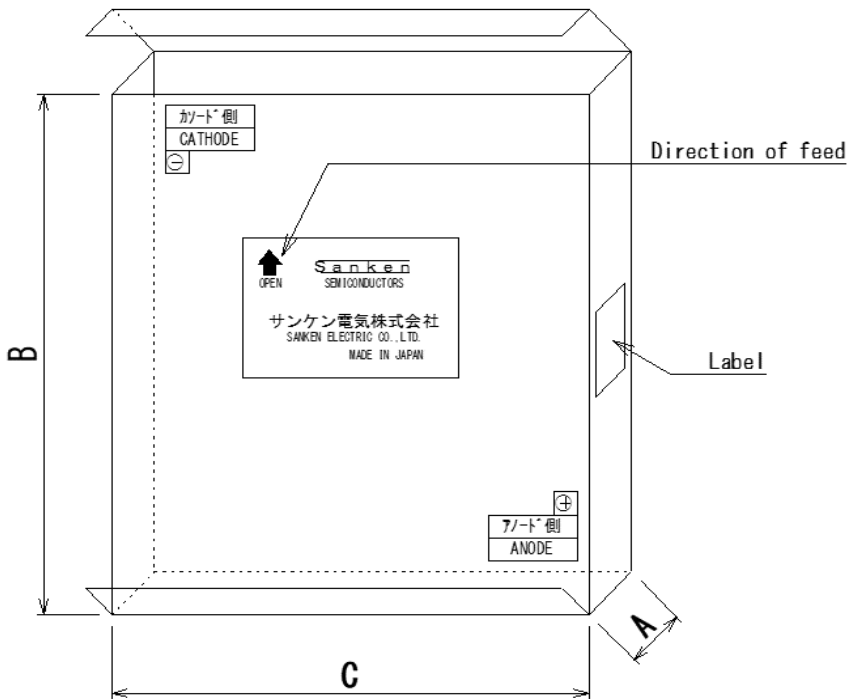
Label



- ① Last digit of year
- ② Month  
January ~ September → Arabic Numeral  
October → O, November → N, December → D
- ③ Day
- ④ Luminous intensity rank / Chromaticity rank
- ⑤ Quantity(Minimum Order Quantity) : 500pcs

● Taping specification for taped parts

Perforation and part number identification shall be placed as shown in the below.  
As to the direction of feed, cathode shall come first.



Outline drawing

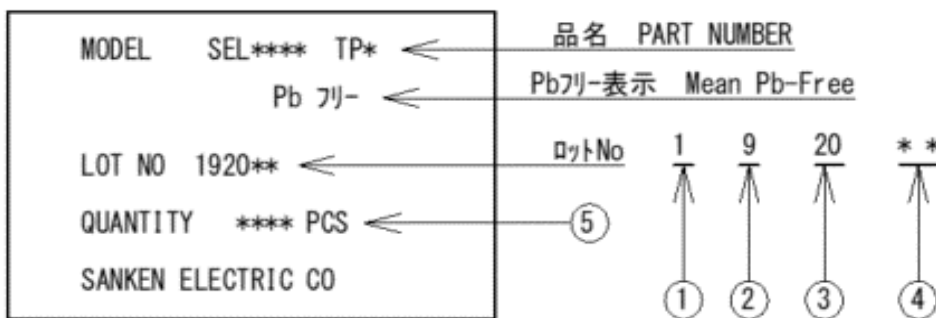
Dimensions

|           |      |
|-----------|------|
| A         | 54.5 |
| B         | 365  |
| C         | 335  |
| Thickness | 3.0  |

(Unit:mm)

Quantity(Minimum Order Quantity)  
: 4000pcs

Label : Label of below in the bag

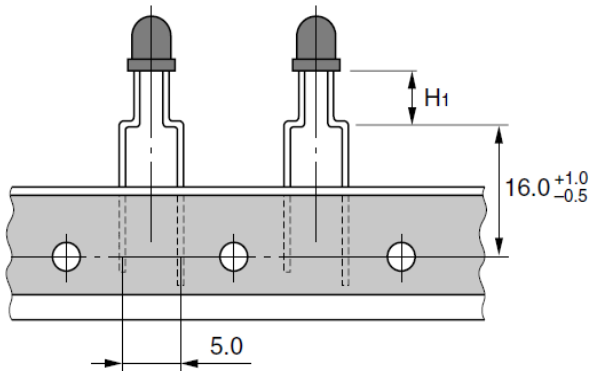


- ① Last digit of year
- ② Month  
January ~ September → Arabic Numeral  
October → O、November → N、December → D
- ③ Day
- ④ Luminous intensity rank / Chromaticity rank
- ⑤ Quantity(Minimum Order Quantity) : 4000pcs

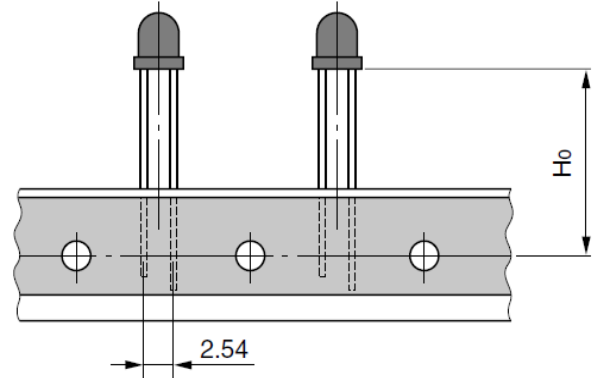


● Taping specification

1. Forming type



2. Straight type



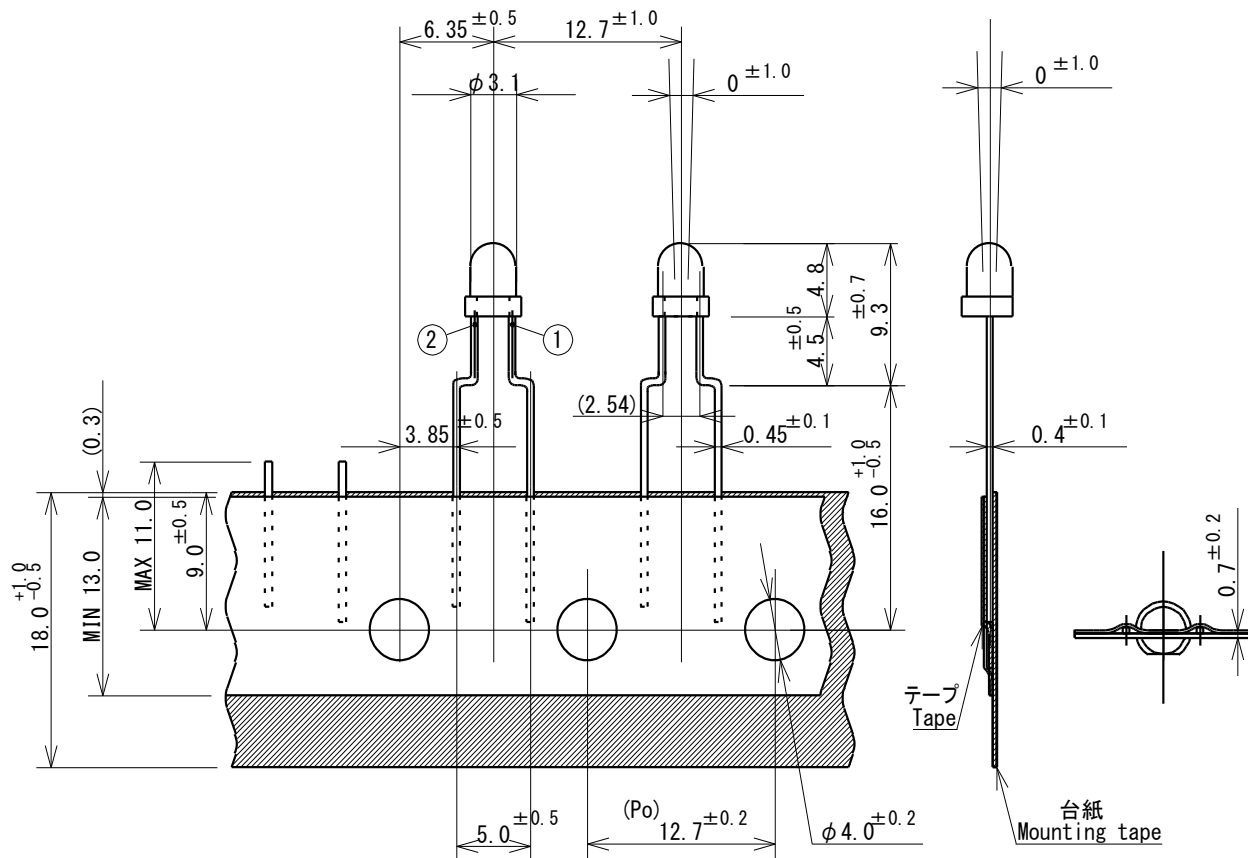
(Unit:mm)

| Series      | Forming type |     |     |     |     |     |
|-------------|--------------|-----|-----|-----|-----|-----|
| Taping name | TP1          | TP2 | TP3 | TP6 | TP7 | TP8 |
| Size H1     | 4.5          | 7.5 | 6.0 | 3.5 | 5.0 | 9.0 |
| SELU2810C–S | ○            | ○   | ○   | ○   | ○   | ○   |

| Series      | Straight type |      |      |      |      |      |
|-------------|---------------|------|------|------|------|------|
| Taping name | TP4           | TP5  | TP15 | TP16 | TP17 | TP18 |
| Size H0     | 17.0          | 20.5 | 20.0 | 19.0 | 23.5 | 25.0 |
| SELU2810C–S | ×             | ×    | ×    | ×    | ×    | ×    |

● TP1 Outline dimensions

Component Alignment



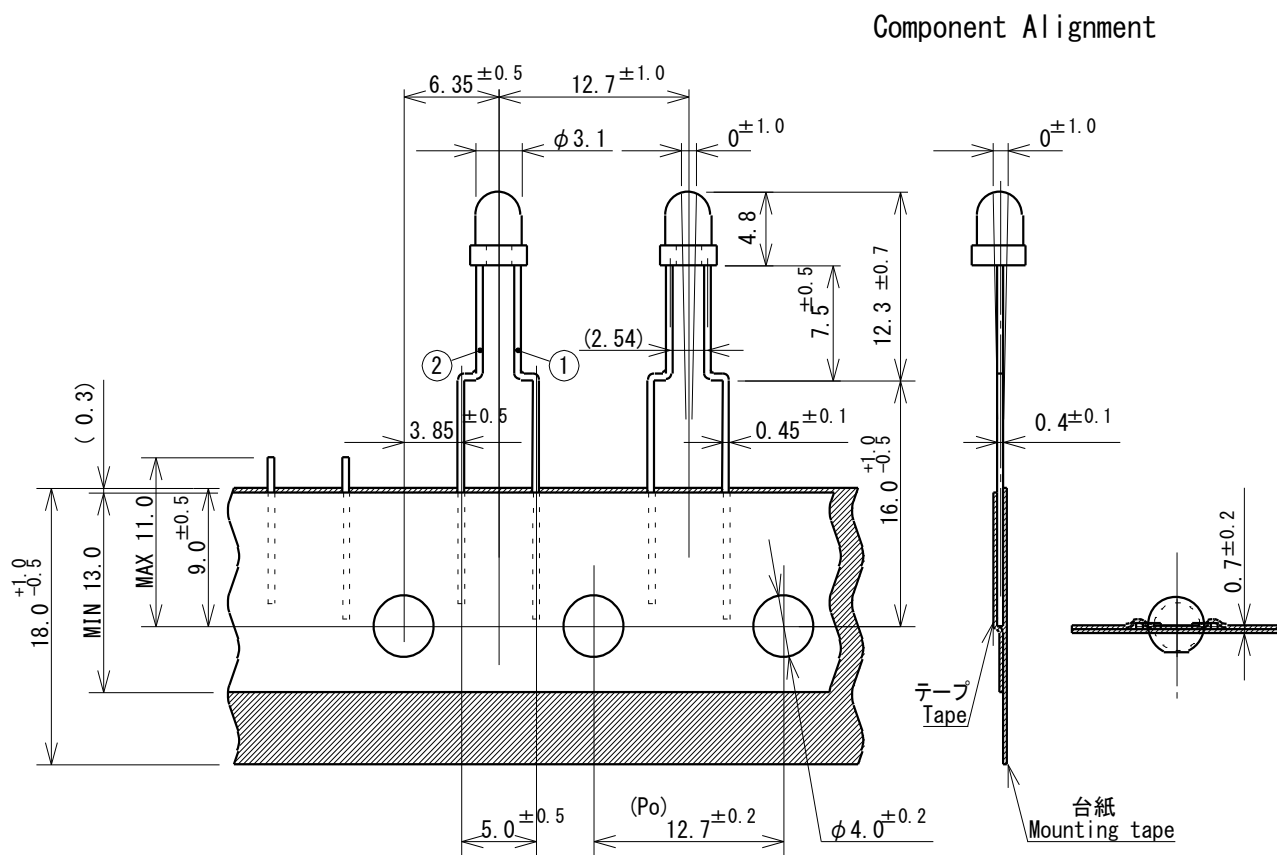
(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $±1.0$ mm over 20 consecutive pitches.

Terminal: ①Anode  
②Cathode

Tolerance:  $±0.3$

● TP2 Outline dimensions



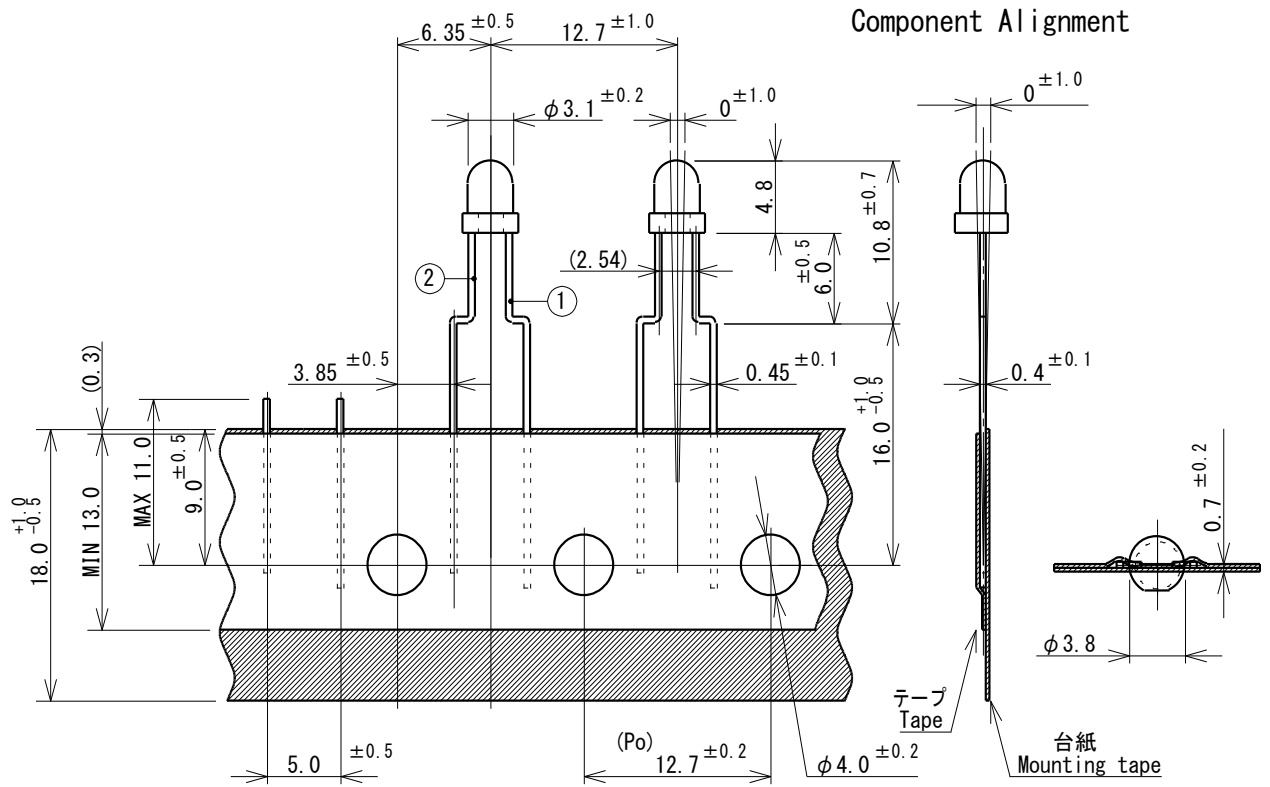
(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $\pm 1.0$ mm over 20 consecutive pitches.

Terminal: ①Anode  
②Cathode

Tolerance:  $\pm 0.3$

● TP3 Outline dimensions



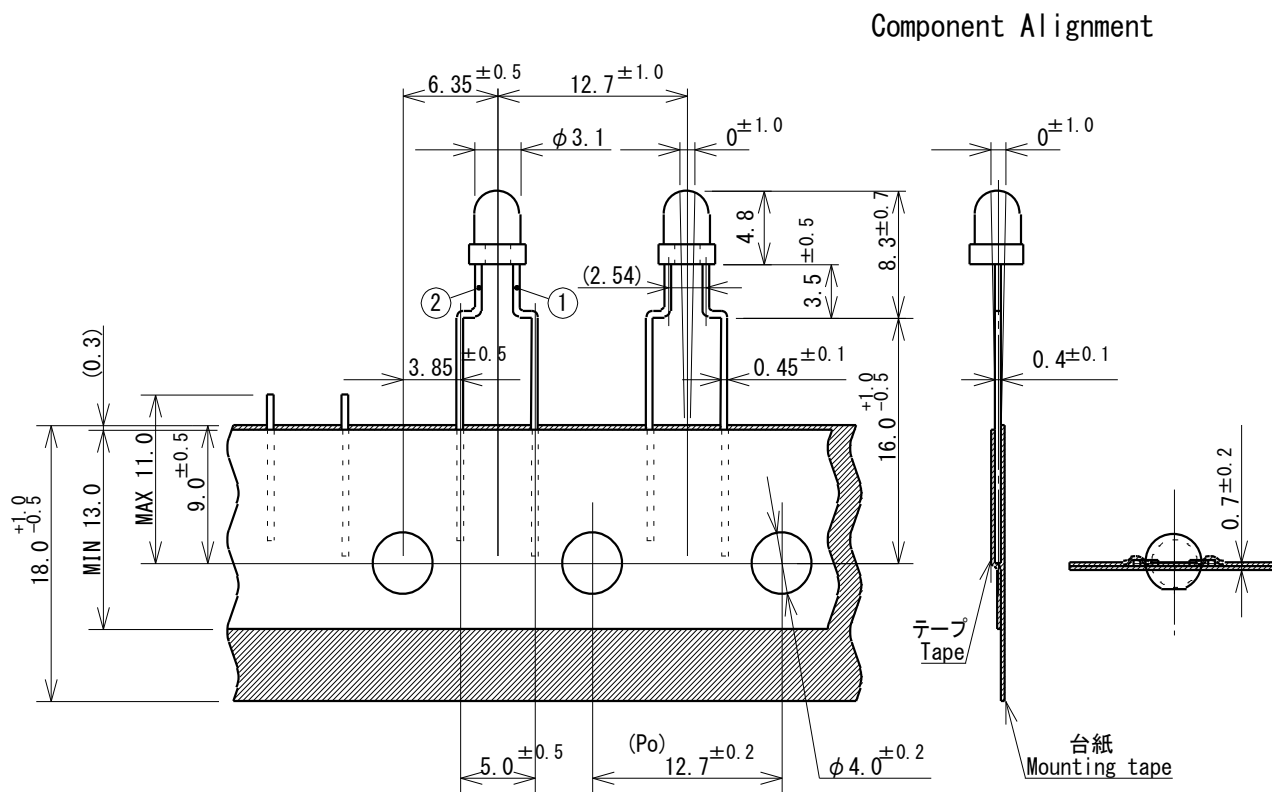
(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $\pm 1.0\text{mm}$  over 20 consecutive pitches.

Terminal: ① Anode  
② Cathode

Tolerance:  $\pm 0.3$

● TP6 Outline dimensions



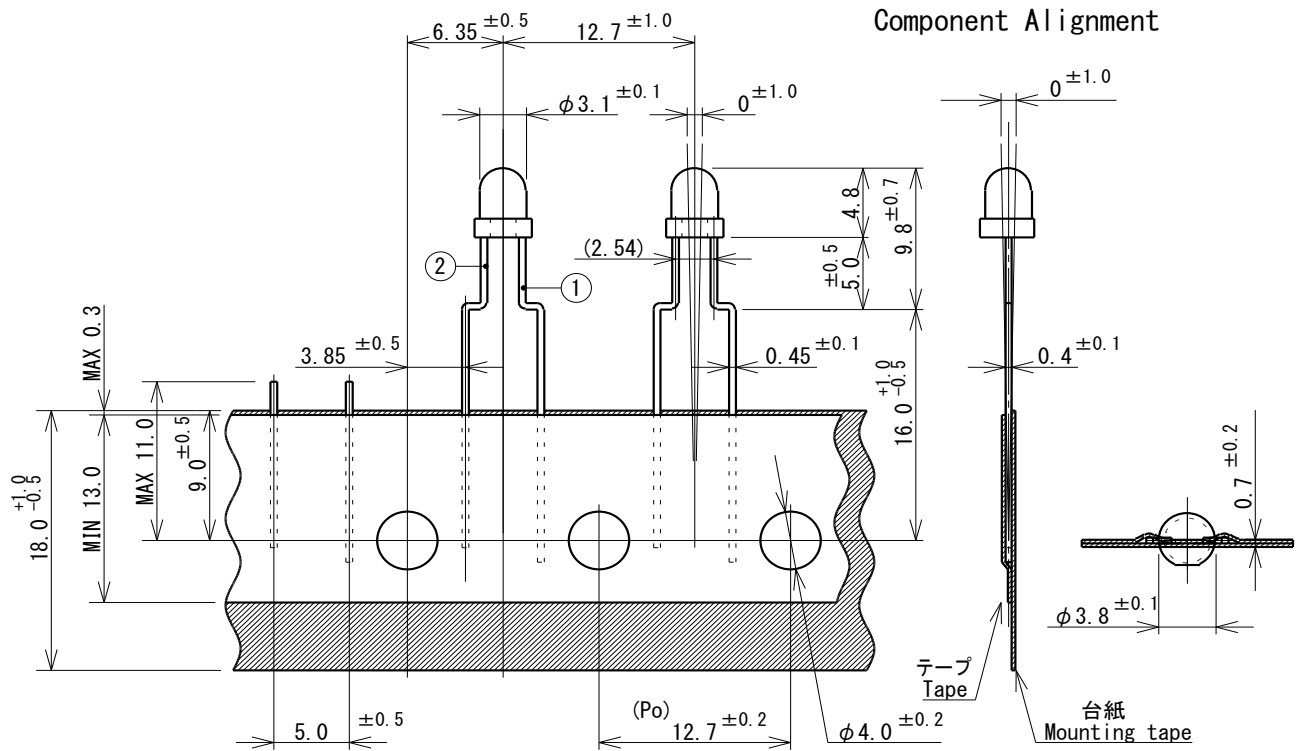
(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $\pm 1.0$ mm over 20 consecutive pitches.

Terminal: ① Anode  
② Cathode

Tolerance:  $\pm 0.3$

● TP7 Outline dimensions



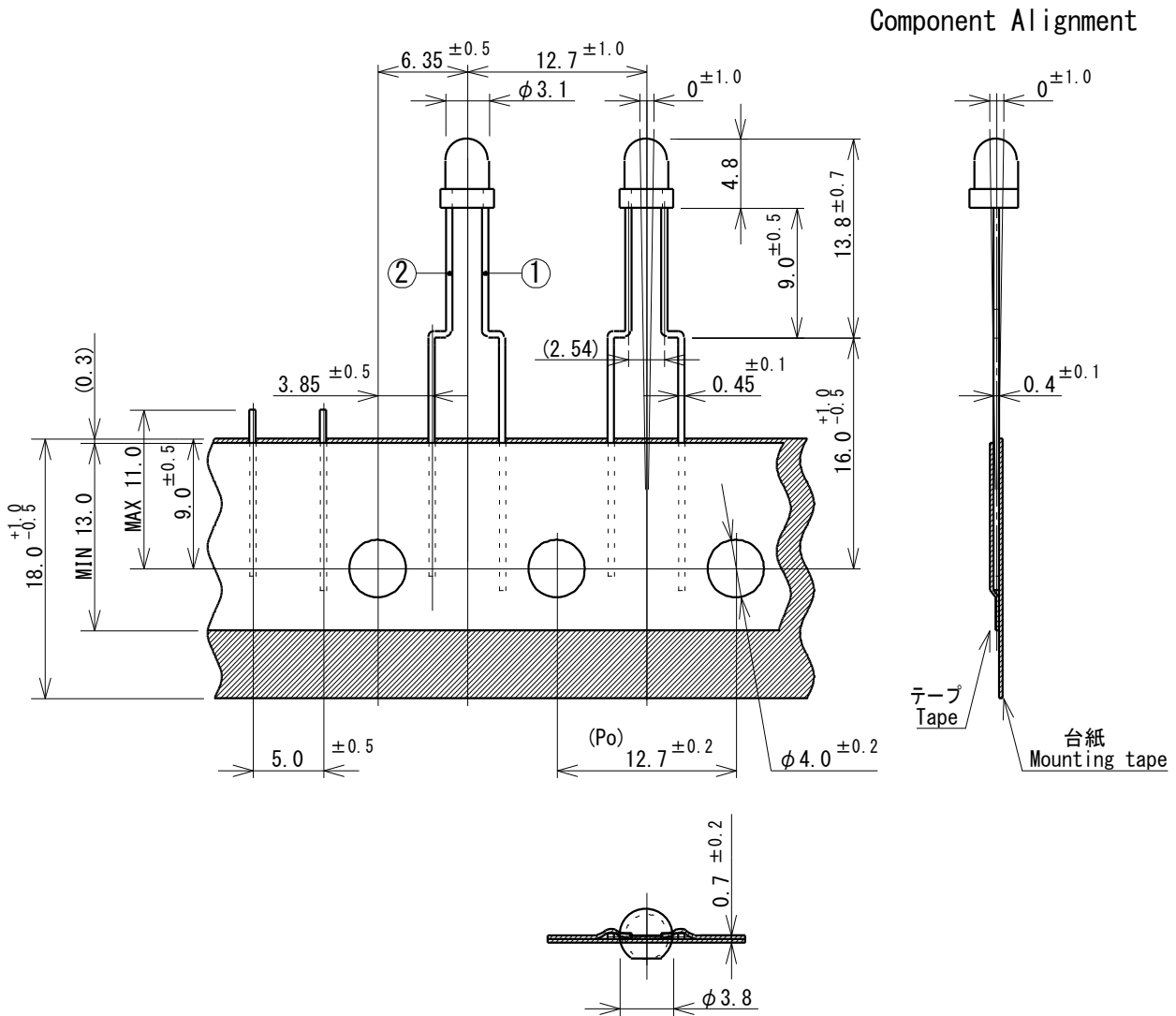
(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $\pm 1.0\text{mm}$  over 20 consecutive pitches.

Terminal: ①Anode  
②Cathode

Tolerance:  $\pm 0.3$

● TP8 Outline dimensions



Component Alignment

(Unit:mm)

(Po):Cumulative pitch tolerance shall not exceed  $\pm 1.0\text{mm}$  over 20 consecutive pitches.

Terminal: ① Anode  
② Cathode

Tolerance:  $\pm 0.3$

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