# SELU2610C-S

- Extenal Shape Type: φ3 Round shape type LED
- Color : Deep Red
- 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℃)

| Parameter | Symbol | Ratings | Unit | Remarks |
|---|---|---|---|---|
| Forward current | IF | 30 | mA | |
| Foward current derating | ⊿IF | -0.45 | mA/℃ | 25℃ or more |
| Pulse forward current | IFP | 100 | mA | f=1kHz , tw≦100μs |
| Reverse voltage | VR | 3 | V | |
| Operating temperature | Topr | −30～ 85 | ℃ | |
| Storage temperature | Tstg | −30～100 | ℃ | |

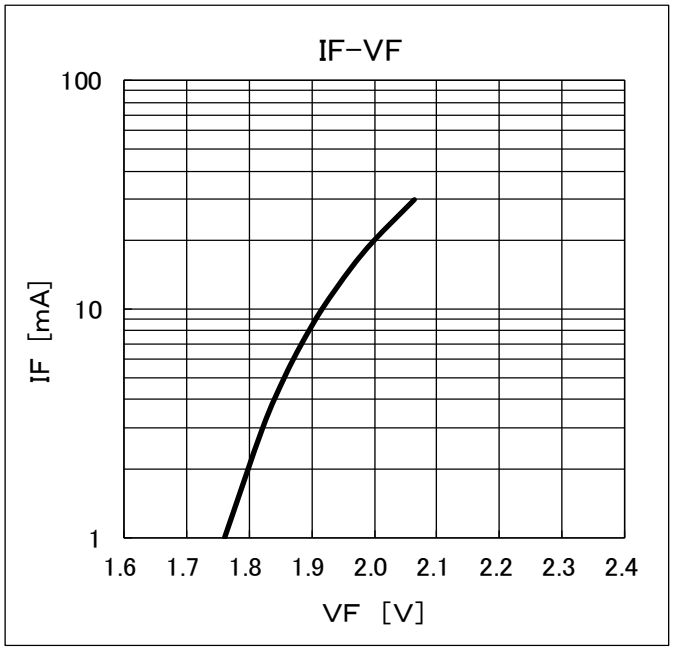
- Electro - optical characteristics (Ta=25℃)

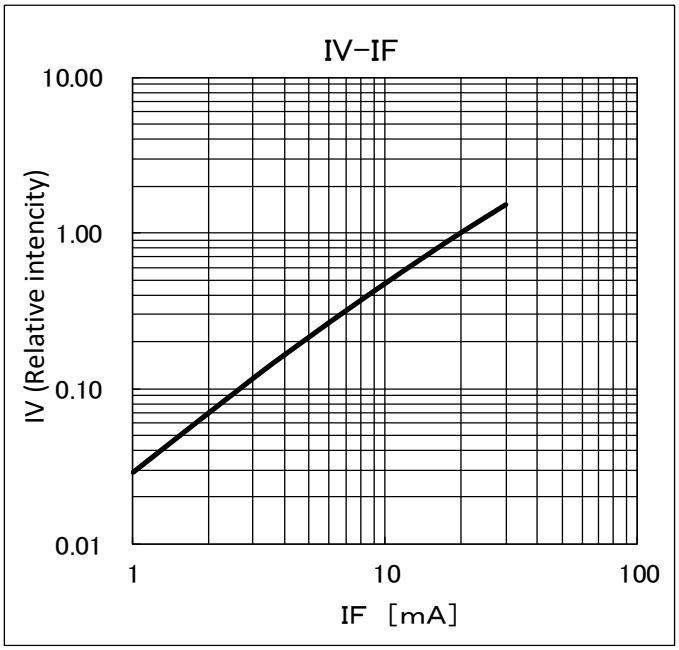
| Parameter | Symbol | Condition | MIN | TYP | MAX | Unit |
|---|---|---|---|---|---|---|
| Forward voltage | VF | IF = 20mA | | 2.0 | 2.5 | V |
| Reverse current | IR | VR=3V | | | 10 | μA |
| Luminous intensity | IV | IF = 20mA | 182 | 300 | | mcd |
| Peak wavelength | λp | IF = 20mA | | 650 | | nm |
| Dominant wavelength | λd | IF = 20mA | | 639 | | nm |
| Spectral bandwidth | ⊿λ | IF = 20mA | | 20 | | nm |
| Directional angle | $2\theta_{1/2}$ | IF = 20mA | | 40 | | deg. |

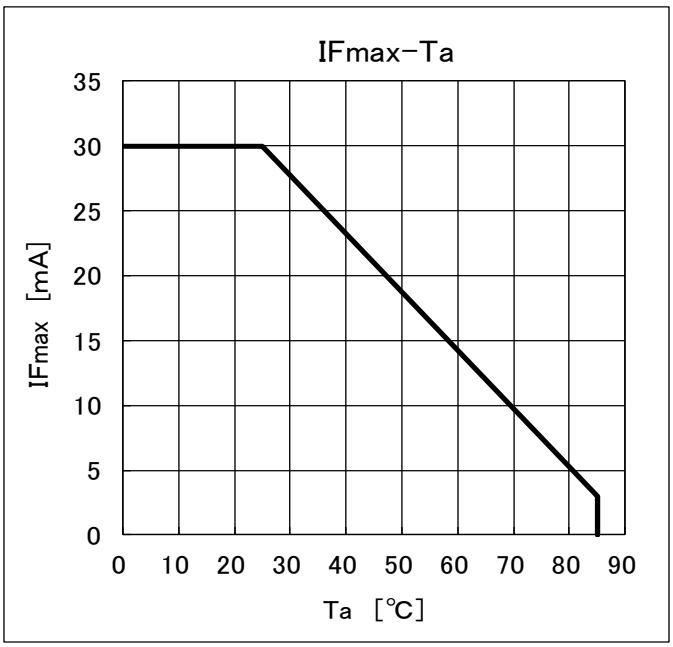
- Luminous intensity rank (Ta=25℃)

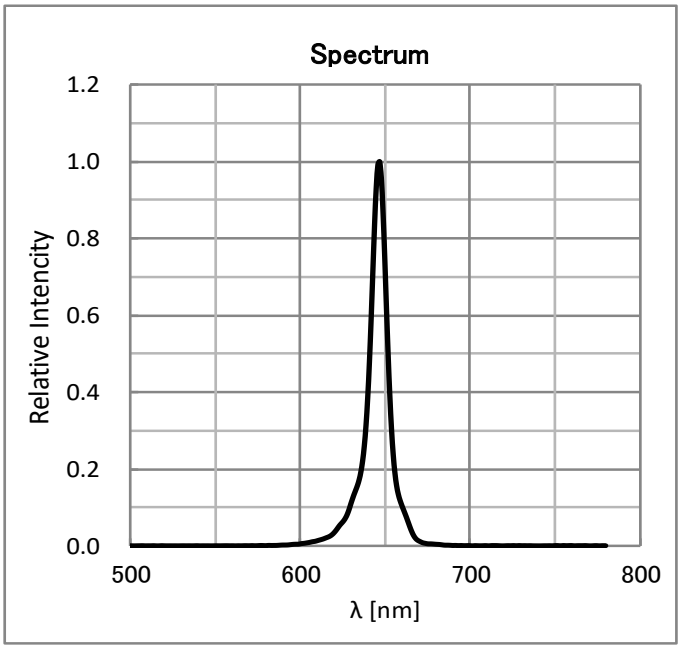
| Rank | Luminous intensity range(mcd) | | |
|---|---|---|---|
| D | 182 | ～ | 363 |
| E | 242 | ～ | 485 |
| F | 323 | ～ | 646 |
| G | 430 | ～ | |

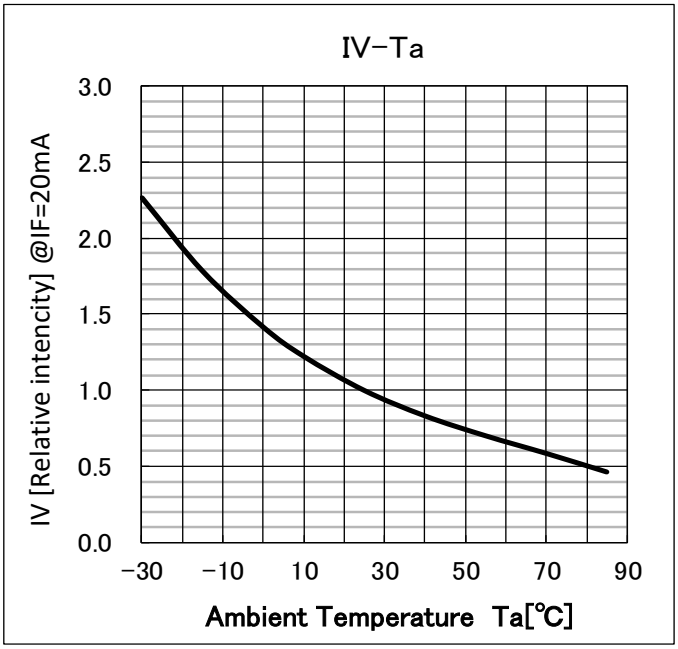
● Characteristic data

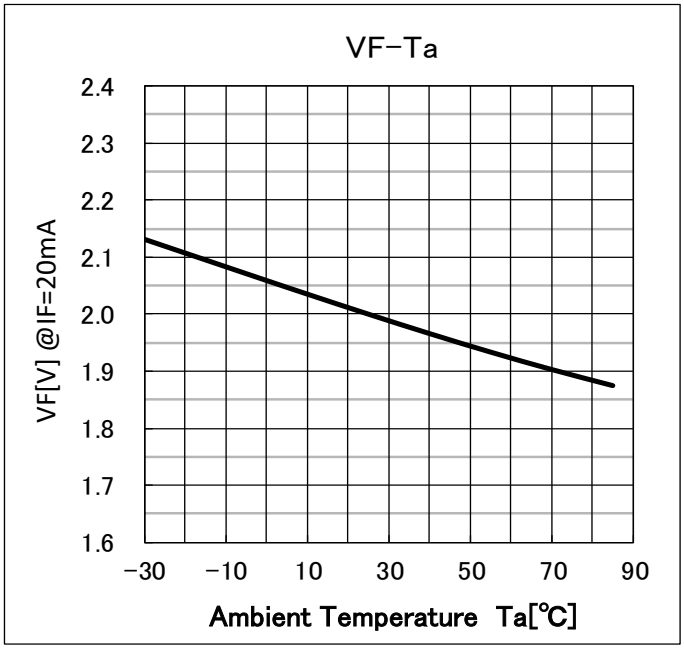


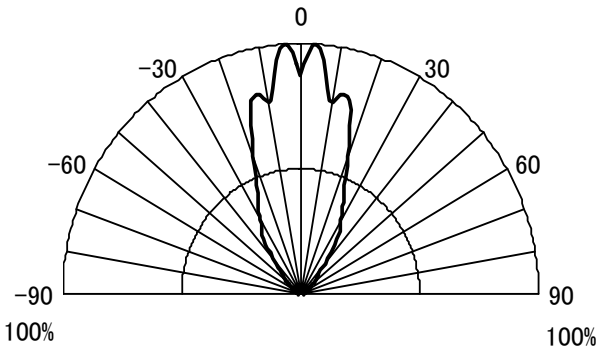





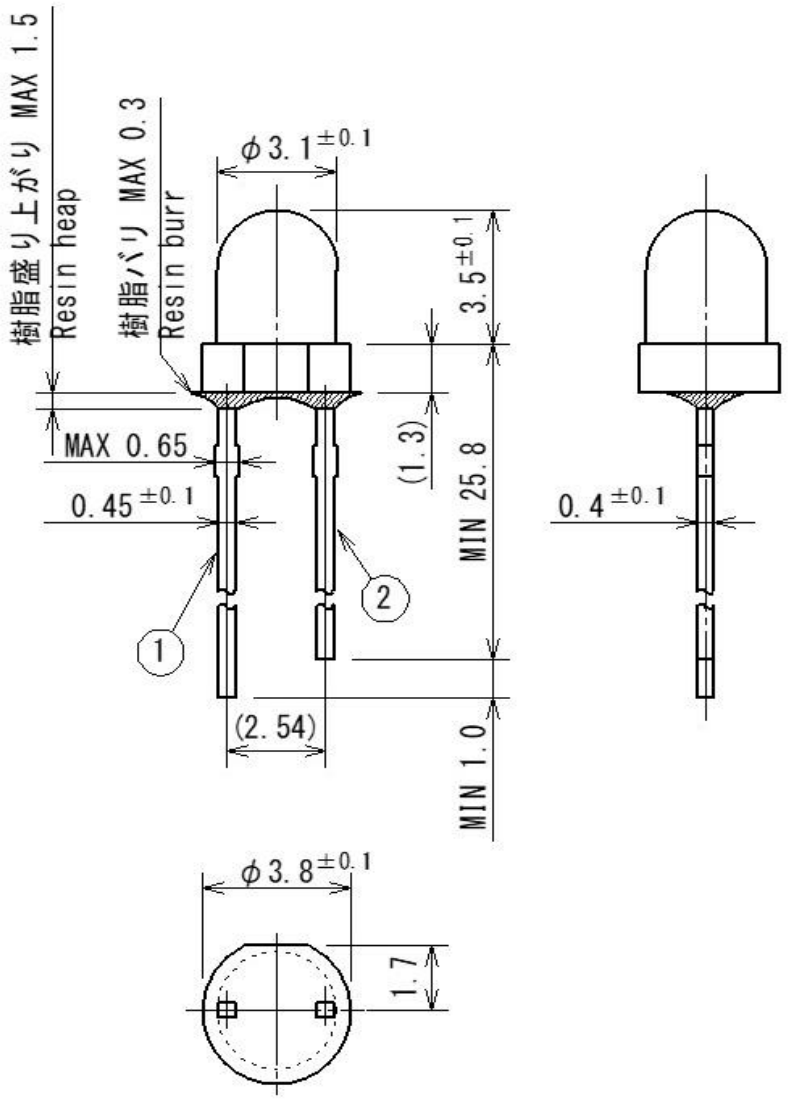




Directional angle



● 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℃.
At a temperature exceeding this limit, the coefficient of linear expansion of the resin doubles or more comparedto 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)

①Soldering measurements:
Distance between melted solder side to bottom of resin shall be 5.5 mm or longer .

②Solder dip: Preheat: 90℃ max. (Backside of PCB), Within 120 seconds
Solder bath: 250℃ max. (Solder temperature), Within 5 seconds

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

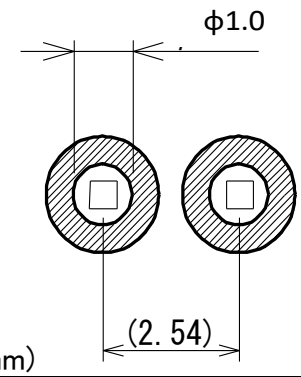
When SMD components are used on the same PCB, mount the LED after adhesive baking process since theresin used for the LED has a low heat resistance.
In case the adhesive baking is operated after the LED is mounted for a manufacturing process reason, make surenot to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

Baking temperature: 120℃ 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 φ0.9 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'thappen.




(Unit:mm)

● 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℃ , RH=90±5%<br>t=1000h |
| | Temperature cycle | 105 | Tstgmin(30min)～Tstgmax(30min)<br>100cycles |
| | Soldering heat | 301/302 | T=260±5℃ , t=10s , 1time |
| | Solderraibirity | 303 | T=245±5℃ , 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 . |

● Mesurement Item and Criterion Judge Failure

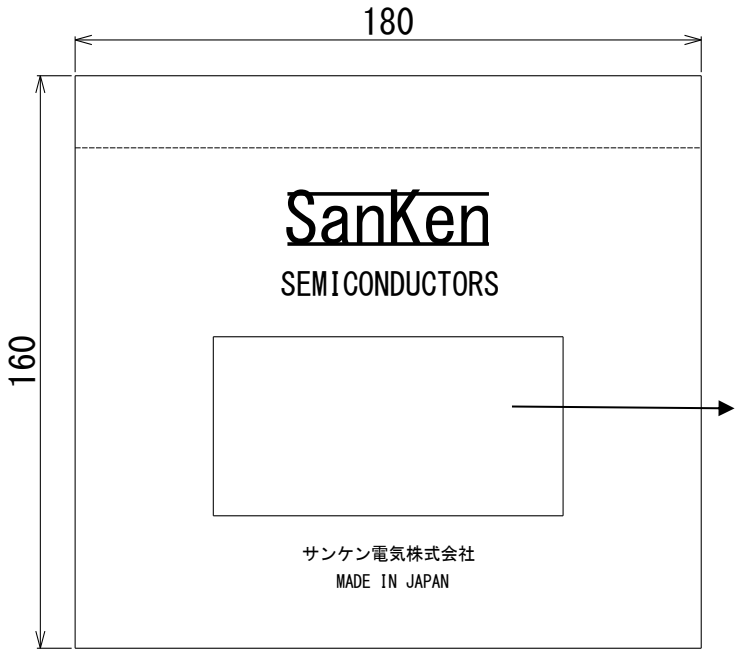
| No | Measurement Item | Mark | Criterion Judge Failure |
|---|---|---|---|
| 1 | Forward Voltage | VF | OK≦V.F.S.×±20% |
| 2 | Reverse Current | IR | OK≧U.S.L.×2.0 |
| 3 | Luminous Intensity | Iv | OK≧I.V.S.×0.5 |

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

Mesurement 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



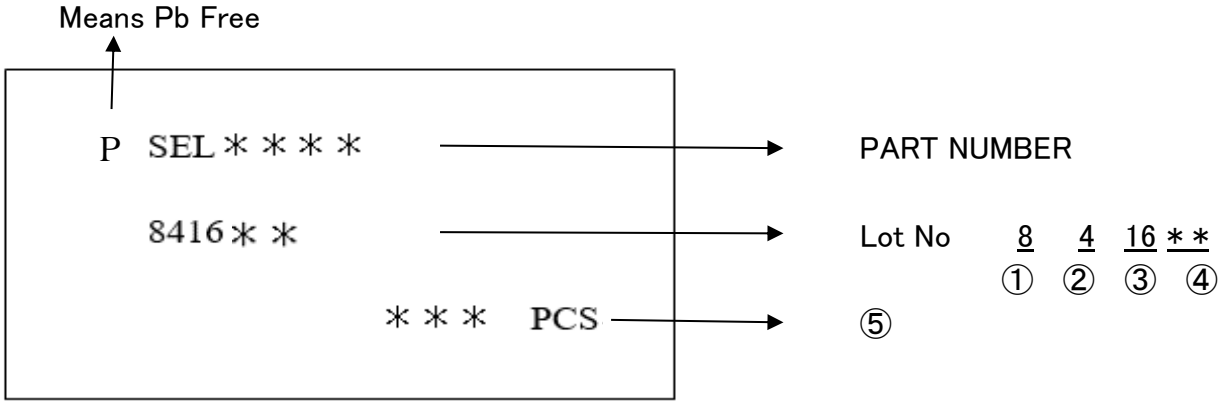

Packing material : Individual vinyl bag

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

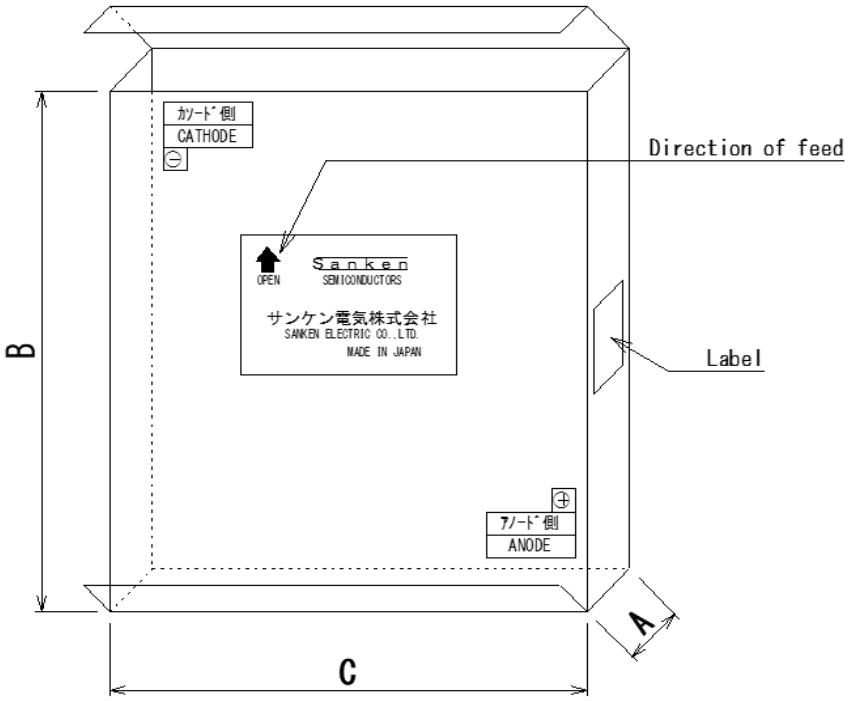
③ Day

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

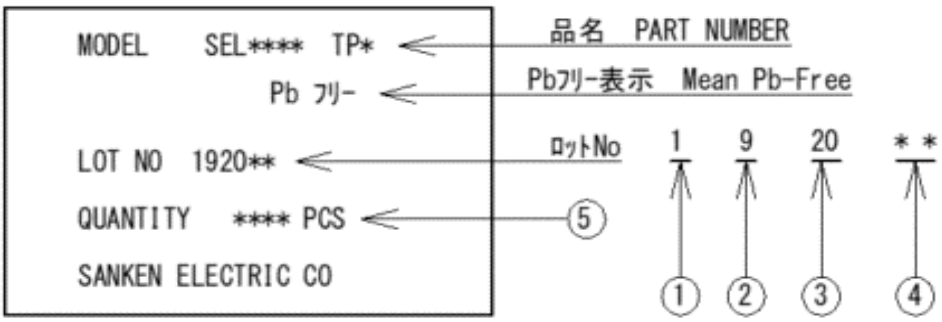
Dimensions

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

(Unit:mm)

Quantity(Minimum Order Quantity)
: 4000pcs

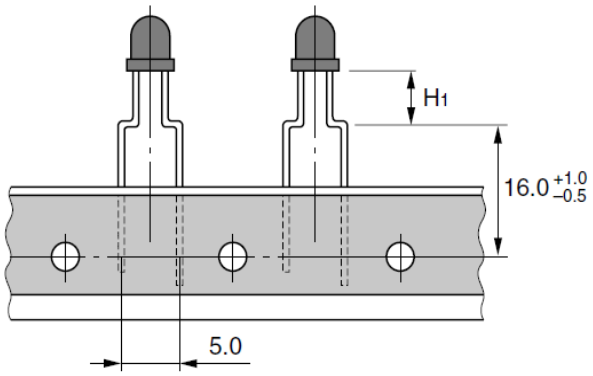
Label : Label of below in the bag



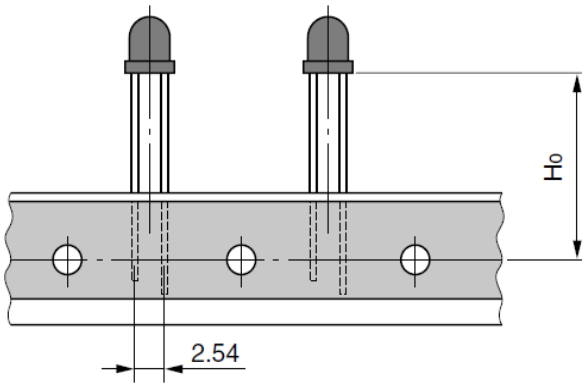

① Last digit of year
② Month
January～September→Arabic Numeral
October →O、November→N、December→D
③ Day
④ Luminous intensity rank / Chromaticity rank
⑤ Quantity(Minimum Order Quantity) :4000pcs

● Taping specification

1.Forming type




2. Straight type

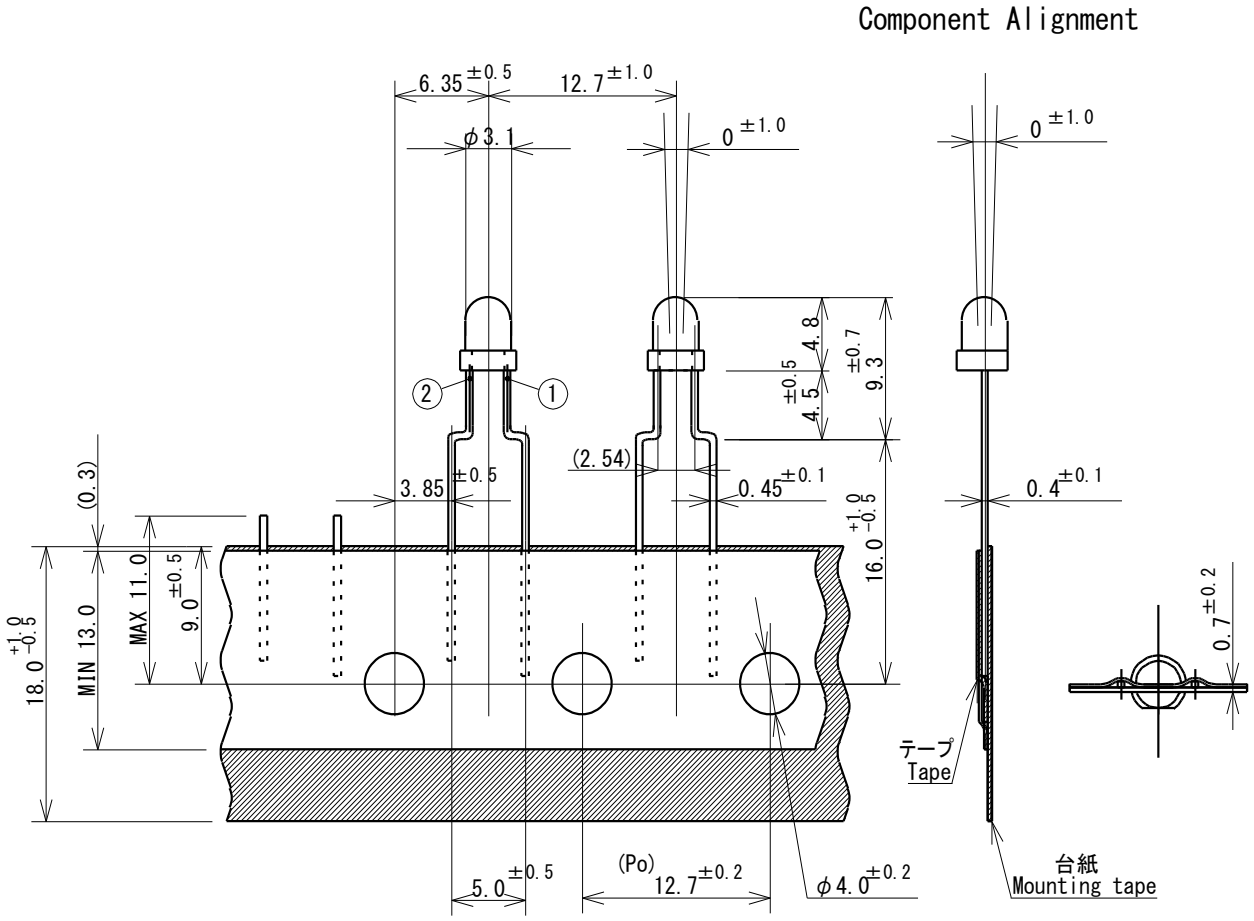



(Unit:mm)

| 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 |
| SELU2610C-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 |
| SELU2610C-S | × | × | × | × | × | × |

● TP1 Outline dimensions




(Unit:mm)

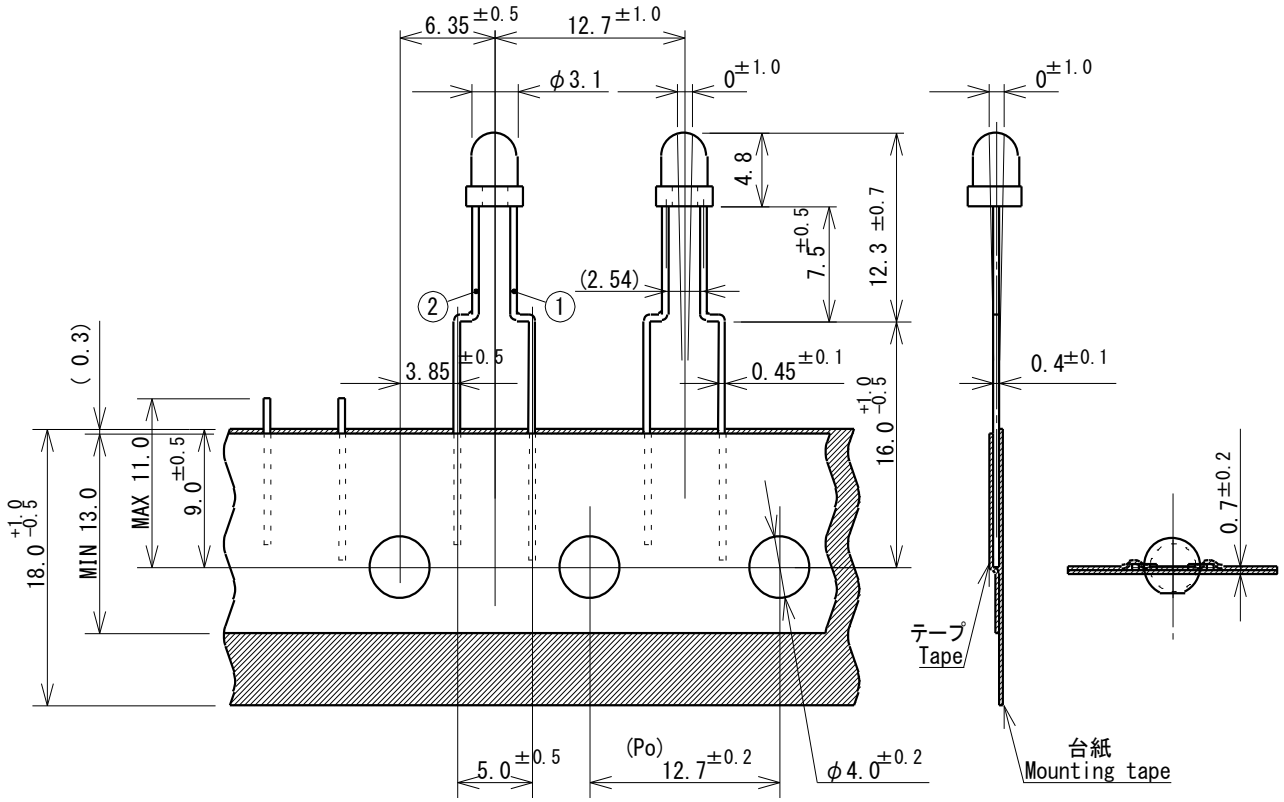
(Po):Comulative pitch tolerance shall not exceed ±1.0mm over 20 consecutive pitches.

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

● TP2 Outline dimensions

Component Alignment



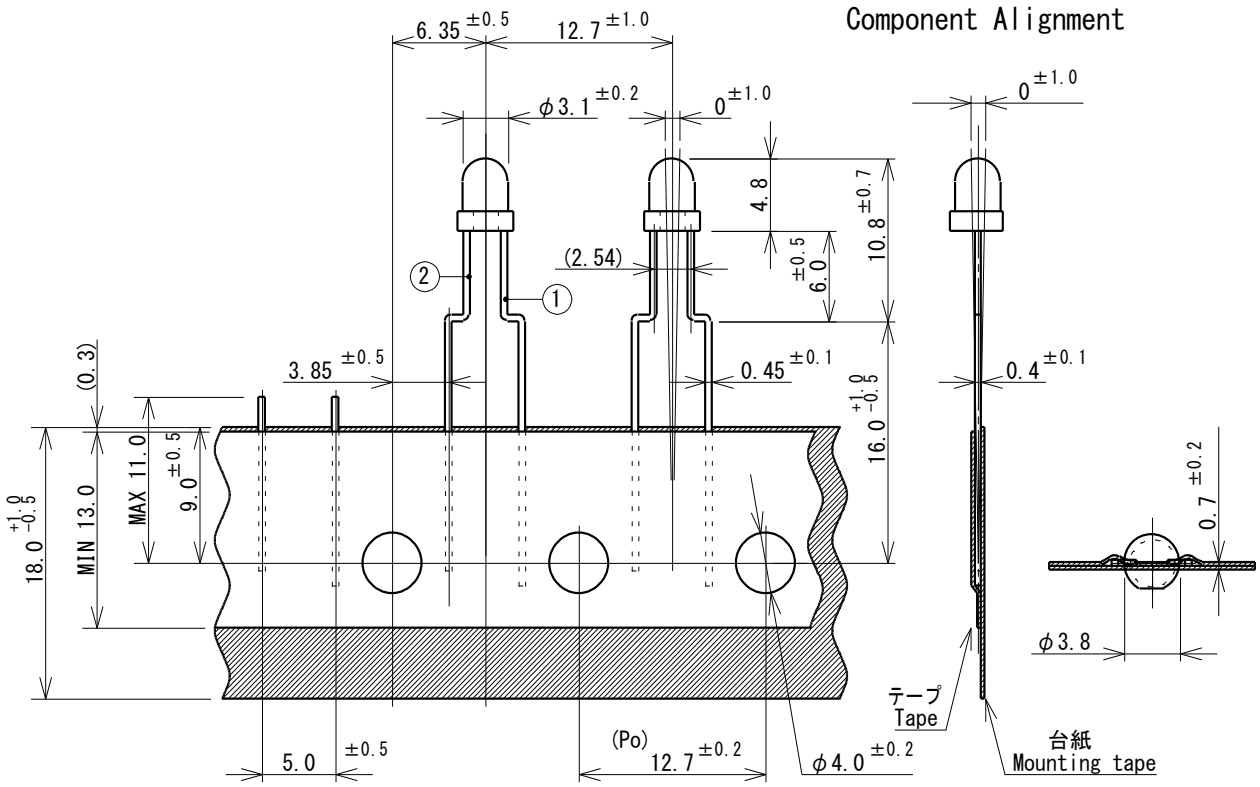

(Unit:mm)

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

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

● TP3 Outline dimensions



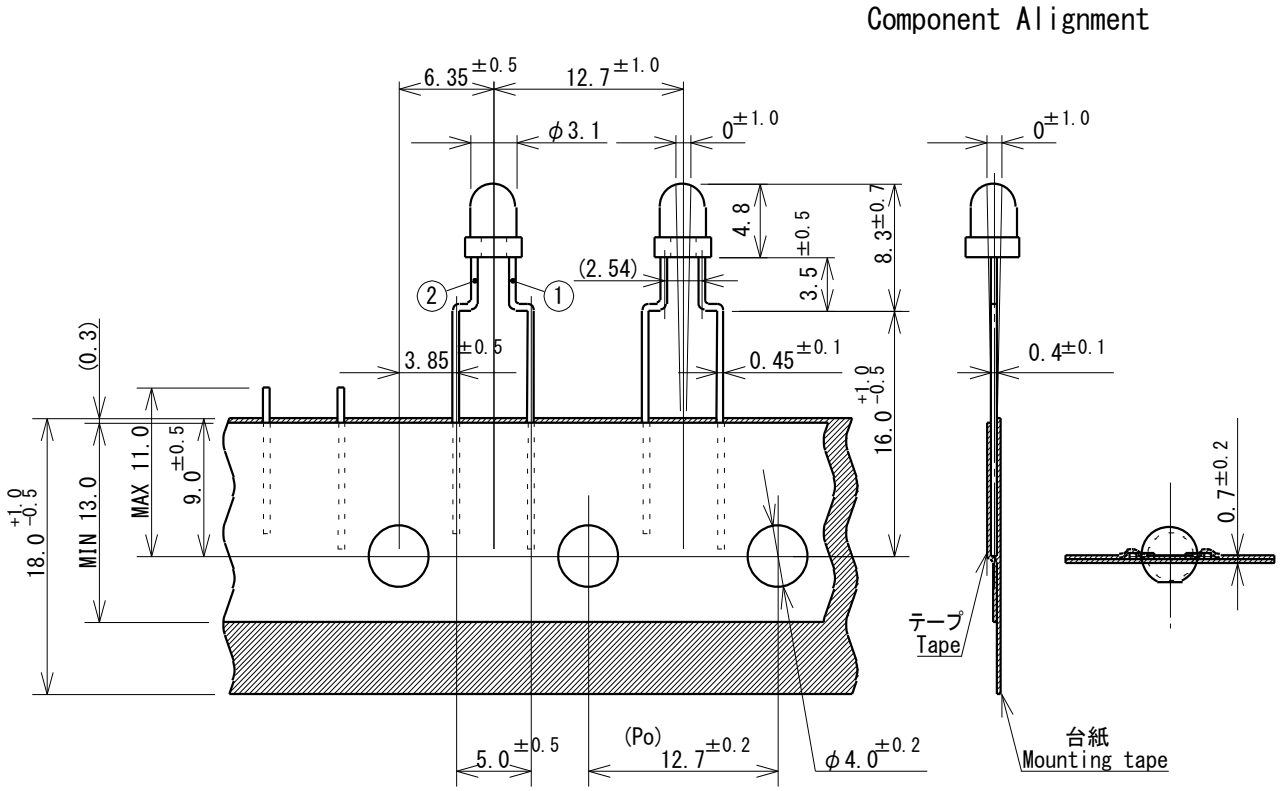

(Unit:mm)

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

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

● TP6 Outline dimensions



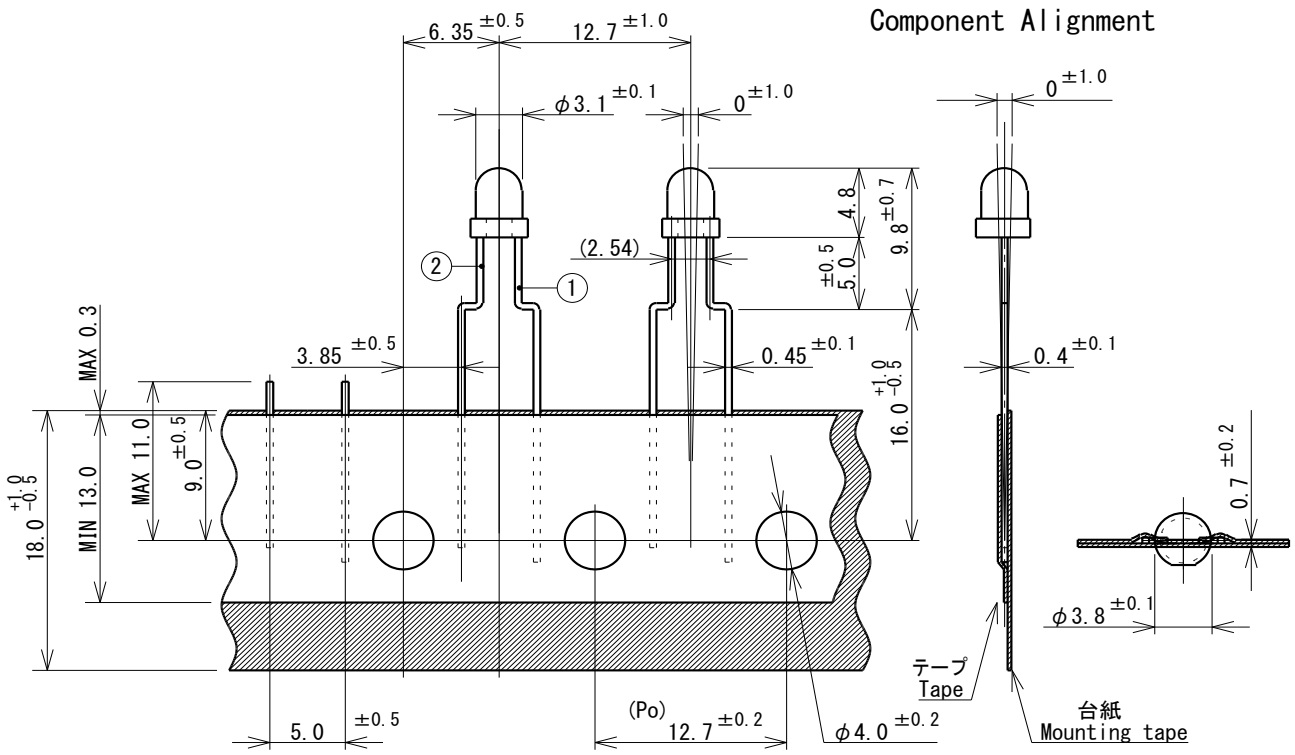

(Unit:mm)

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

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

● TP7 Outline dimensions



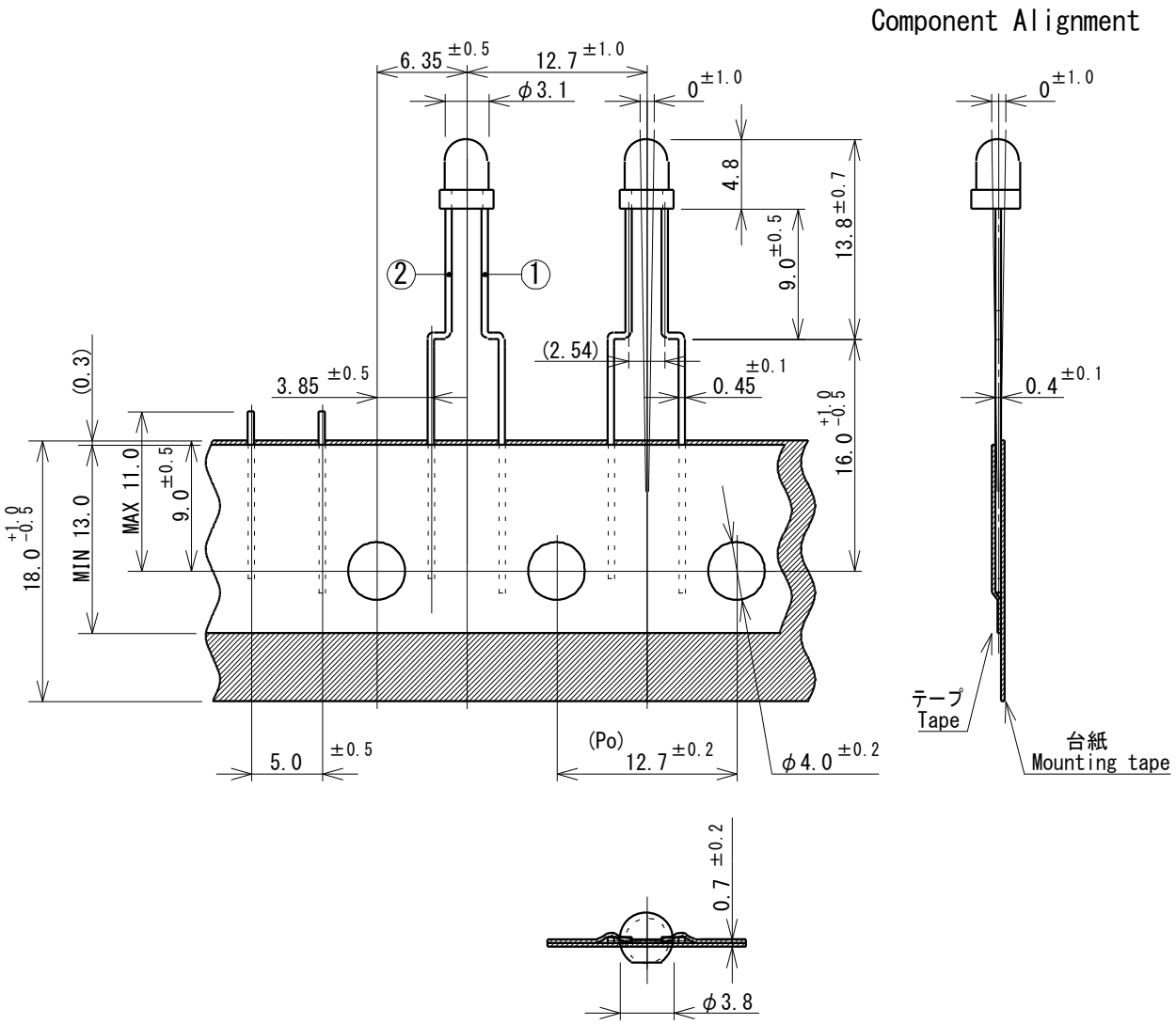

(Unit:mm)

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

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

● TP8 Outline dimensions




(Unit:mm)

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

Terminal: ①Anode
②Cathode

Tolerance: ±0.3

## Important Notes

- All data, illustrations, graphs, tables and any other information included in this document as to Sanken's products listed herein (the "Sanken Products") are current as of the date this document is issued. All contents in this document are subject to any change without notice due to improvement of the Sanken Products, etc. Please make sure to confirm with a Sanken sales representative that the contents set forth in this document reflect the latest revisions before use.
- The Sanken Products are intended for use as components of electronic equipment or apparatus (transportation equipment and its control systems, home appliances, office equipment, telecommunication equipment, measuring equipment, etc.). Prior to use of the Sanken Products, please put your signature, or affix your name and seal, on the specification documents of the Sanken Products and return them to Sanken. If considering use of the Sanken Products for any applications that require higher reliability (traffic signal control systems or equipment, disaster/crime alarm systems, etc.), you must contact a Sanken sales representative to discuss the suitability of such use and put your signature, or affix your name and seal, on the specification documents of the Sanken Products and return them to Sanken, prior to the use of the Sanken Products. The Sanken Products are not intended for use in any applications that require extremely high reliability such as: aerospace equipment; nuclear power control systems; and medical equipment or systems, whose failure or malfunction may result in death or serious injury to people, i.e., medical devices in Class III or a higher class as defined by relevant laws of Japan (collectively, the "Specific Applications"). Sanken assumes no liability or responsibility whatsoever for any and all damages and losses that may be suffered by you, users or any third party, resulting from the use of the Sanken Products in the Specific Applications or in manner not in compliance with the instructions set forth herein.
- In the event of using the Sanken Products by either (i) combining other products or materials therewith or (ii) physically, chemically or otherwise processing or treating the same, you must duly consider all possible risks that may result from all such uses in advance and proceed therewith at your own responsibility.
- Although Sanken is making efforts to enhance the quality and reliability of its products, it is impossible to completely avoid the occurrence of any failure or defect in semiconductor products at a certain rate. You must take, at your own responsibility, preventative measures including using a sufficient safety design and confirming safety of any equipment or systems in/for which the Sanken Products are used, upon due consideration of a failure occurrence rate or derating, etc., in order not to cause any human injury or death fire accident or social harm which may result from any failure or malfunction of the Sanken Products.
- No anti-radioactive ray design has been adopted for the Sanken Products.
- Gallium arsenic is used in some of the products listed in this document. These products are dangerous if they are burned or smashed in the process of disposal. It is also dangerous to drink the liquid or inhale the gas generated by such products when chemically disposed.
- No contents in this document can be transcribed or copied without Sanken's prior written consent.
- The circuit constant, operation examples, circuit examples, pattern layout examples, design examples, recommended examples, all information and evaluation results based thereon, etc., described in this document are presented for the sole purpose of reference of use of the Sanken Products and Sanken assumes no responsibility whatsoever for any and all damages and losses that may be suffered by you, users or any third party, or any possible infringement of any and all property rights including intellectual property rights and any other rights of you, users or any third party, resulting from the foregoing.
- All technical information described in this document (the "Technical Information") is presented for the sole purpose of reference of use of the Sanken Products and no license, express, implied or otherwise, is granted hereby under any intellectual property rights or any other rights of Sanken.
- Unless otherwise agreed in writing between Sanken and you, Sanken makes no warranty of any kind, whether express or implied, including, without limitation, any warranty (i) as to the quality or performance of the Sanken Products (such as implied warranty of merchantability, or implied warranty of fitness for a particular purpose or special environment), (ii) that any Sanken Product is delivered free of claims of third parties by way of infringement or the like, (iii) that may arise from course of performance, course of dealing or usage of trade, and (iv) as to any information contained in this document (including its accuracy, usefulness, or reliability).
- In the event of using the Sanken Products, you must use the same after carefully examining all applicable environmental laws and regulations that regulate the inclusion or use of any particular controlled substances, including, but not limited to, the EU RoHS Directive, so as to be in strict compliance with such applicable laws and regulations.
- You must not use the Sanken Products or the Technical Information for the purpose of any military applications or use, including but not limited to the development of weapons of mass destruction. In the event of exporting the Sanken Products or the Technical Information, or providing them for non-residents, you must comply with all applicable export control laws and regulations in each country including the U.S. Export Administration Regulations (EAR) and the Foreign Exchange and Foreign Trade Act of Japan, and follow the procedures required by such applicable laws and regulations.
- Sanken assumes no responsibility for any troubles, which may occur during the transportation of the Sanken Products including the falling thereof, out of Sanken's distribution network.
- Although Sanken has prepared this document with its due care to pursue the accuracy thereof, Sanken does not warrant that it is error free and Sanken assumes no liability whatsoever for any and all damages and losses which may be suffered by you resulting from any possible errors or omissions in connection with the contents included herein.
- Please refer to the relevant specification documents in relation to particular precautions when using the Sanken Products.
- All rights and title in and to any specific trademark or tradename belong to Sanken or such original right holder(s).