

SE-1206T-SRC

### PACKAGE DIMENSION

◇ **Package Dimensions of Device**

UNIT: mm

◇ **Tape Specification: 3,000pcs per reel**

| Packing Size |       |       |       |       |       |       |      |       |       |       |       |       |        |
|--------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|--------|
| Item         | W     | P1    | E     | F     | D     | D1    | Po   | 10Po  | P2    | Ao    | Bo    | Ko    | t      |
| Spec.        | 8.00  | 4.00  | 1.75  | 3.50  | 1.55  | 1.0   | 4.00 | 40.00 | 2.00  | 1.78  | 3.40  | 1.04  | 0.229  |
| Tolerance    | ±0.20 | ±0.10 | ±0.10 | ±0.05 | ±0.05 | +0.25 | ±0.1 | ±0.20 | ±0.05 | ±0.10 | ±0.10 | ±0.10 | ±0.013 |

◇ **Package Dimensions of Reel**

◇ **Recommended Soldering Pad Dimensions**

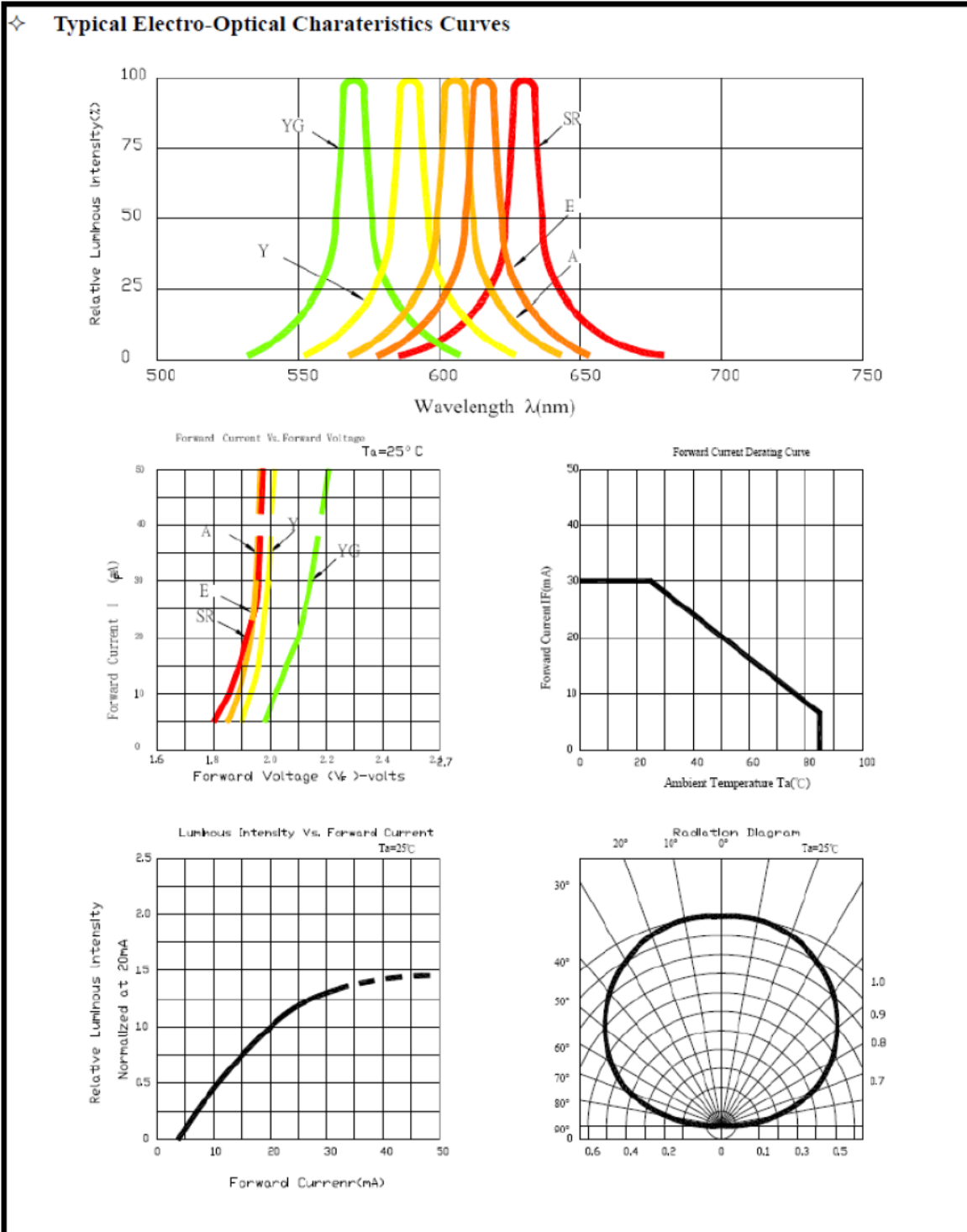
**NOTES:**

- All dimensions are in millimeter(inch);
- Tolerance is ±0.1mm(0.004") especially other specified;
- Specifications are subject to change without notice.

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| <p>✧ <b>Features:</b></p> <ul style="list-style-type: none"> <li>➤ Dice Material: AlGaInP</li> <li>➤ Light Color: Super Bright Red</li> <li>➤ Lens Color: Water Clear</li> <li>➤ Package in 8mm tape on 7" diameter reel</li> <li>➤ Compatible with automatic placement equipment</li> <li>➤ Compatible with reflow solder process</li> </ul>   | <p>✧ <b>Applications:</b></p> <ul style="list-style-type: none"> <li>➤ Automotive: backlighting in dashboard switch</li> <li>➤ Indicators</li> <li>➤ LCD Back-lights</li> <li>➤ Illuminations</li> </ul> |            |         |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
|---|--|------------|---------|-----------|------|-------------------|------|------|-----------------|----------------------------|---------|------|------|--|-----|--------------------|----|-----------------|------|------|----|---------------------------|--------------------------|-----|---------|-----------------------------|------|------------|----|---------------------------|------|------------|-----|-----|-----|----|---------------|-----|---------|----|-----|----|-----|-----------------|----|-------|----|----|----|----|
| <p>✧ <b>Absolute Maximum Ratings(Ta=25°C°)</b></p> <table border="1"> <thead> <tr> <th>Item</th> <th>Symbol</th> <th>Maximum</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Power Dissipation</td> <td>PD</td> <td>78</td> <td>mW</td> </tr> <tr> <td>Continuous Forward Current</td> <td>IFmax</td> <td>20</td> <td>mA</td> </tr> <tr> <td>Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)</td> <td>IFP</td> <td>100</td> <td>mA</td> </tr> <tr> <td>Reverse Voltage</td> <td>VR</td> <td>5</td> <td>V</td> </tr> <tr> <td>Derating Linear From 25°C</td> <td></td> <td>0.3</td> <td>mA / °C</td> </tr> <tr> <td>Operating Temperature Range</td> <td>Topr</td> <td>-30 to +80</td> <td>°C</td> </tr> <tr> <td>Storage Temperature Range</td> <td>Tstg</td> <td>-40 to +90</td> <td>°C</td> </tr> </tbody> </table>   |  | Item       | Symbol  | Maximum   | Unit | Power Dissipation | PD   | 78   | mW              | Continuous Forward Current | IFmax   | 20   | mA   | Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width) | IFP | 100                | mA | Reverse Voltage | VR   | 5    | V  | Derating Linear From 25°C |                          | 0.3 | mA / °C | Operating Temperature Range | Topr | -30 to +80 | °C | Storage Temperature Range | Tstg | -40 to +90 | °C  |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Item  | Symbol   | Maximum    | Unit    |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Power Dissipation   | PD   | 78         | mW      |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Continuous Forward Current  | IFmax  | 20         | mA      |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)  | IFP  | 100        | mA      |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Reverse Voltage   | VR   | 5          | V       |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Derating Linear From 25°C   |  | 0.3        | mA / °C |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Operating Temperature Range   | Topr   | -30 to +80 | °C      |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Storage Temperature Range   | Tstg   | -40 to +90 | °C      |           |      |                   |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| <p>✧ <b>Electrical / Optical Characteristics(Ta=25°C°)</b></p> <table border="1"> <thead> <tr> <th>Item</th> <th>Symbol</th> <th>Condition</th> <th>Min.</th> <th>Typ.</th> <th>Max.</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Forward Voltage</td> <td>VF</td> <td>IF=20mA</td> <td>1.80</td> <td>2.00</td> <td>2.40</td> <td>V</td> </tr> <tr> <td>Luminous Intensity</td> <td>Iv</td> <td>IF=20mA</td> <td>28.0</td> <td>40.0</td> <td>--</td> <td>mcd</td> </tr> <tr> <td>Peak Emission Wavelength</td> <td>λP</td> <td>IF=20mA</td> <td>--</td> <td>635</td> <td>--</td> <td>nm</td> </tr> <tr> <td>Dominant Wavelength</td> <td>λD</td> <td>IF=20mA</td> <td>635</td> <td>640</td> <td>645</td> <td>nm</td> </tr> <tr> <td>Viewing Angle</td> <td>2θ½</td> <td>IF=20mA</td> <td>--</td> <td>130</td> <td>--</td> <td>deg</td> </tr> <tr> <td>Reverse Current</td> <td>IR</td> <td>VR=5V</td> <td>--</td> <td>--</td> <td>10</td> <td>uA</td> </tr> </tbody> </table> <p><b>The measuring tolerance: Luminous intensity ±15%; Wavelength(λD) ±2nm</b></p> |  | Item       | Symbol  | Condition | Min. | Typ.              | Max. | Unit | Forward Voltage | VF                         | IF=20mA | 1.80 | 2.00 | 2.40   | V   | Luminous Intensity | Iv | IF=20mA         | 28.0 | 40.0 | -- | mcd                       | Peak Emission Wavelength | λP  | IF=20mA | --                          | 635  | --         | nm | Dominant Wavelength       | λD   | IF=20mA    | 635 | 640 | 645 | nm | Viewing Angle | 2θ½ | IF=20mA | -- | 130 | -- | deg | Reverse Current | IR | VR=5V | -- | -- | 10 | uA |
| Item  | Symbol   | Condition  | Min.    | Typ.      | Max. | Unit              |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Forward Voltage   | VF   | IF=20mA    | 1.80    | 2.00      | 2.40 | V                 |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Luminous Intensity  | Iv   | IF=20mA    | 28.0    | 40.0      | --   | mcd               |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Peak Emission Wavelength  | λP   | IF=20mA    | --      | 635       | --   | nm                |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Dominant Wavelength   | λD   | IF=20mA    | 635     | 640       | 645  | nm                |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Viewing Angle   | 2θ½  | IF=20mA    | --      | 130       | --   | deg               |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |
| Reverse Current   | IR   | VR=5V      | --      | --        | 10   | uA                |      |      |                 |                            |         |      |      |  |     |                    |    |                 |      |      |    |                           |                          |     |         |                             |      |            |    |                           |      |            |     |     |     |    |               |     |         |    |     |    |     |                 |    |       |    |    |    |    |

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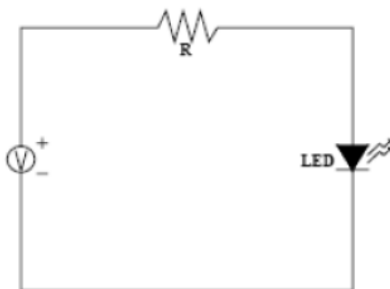
❖ **Descriptions**

- The Chip-LED Taping is much smaller than lead frame type components. Thus enable smaller board size, higher density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

❖ **Reliability Test Items And Condititions**

| NO. | Item                     | Test Condition                       | Test Hr/cycle/time | Sample Q'ty |
|-----|--------------------------|--------------------------------------|--------------------|-------------|
| 1   | Solder Heat              | TEMP:260°C±5°C                       | 5sec               | 48pcs       |
| 2   | Temperature Cycle        | 90°C~25°C~30°C~25°C<br>30m 5m 30m 5m | 300 cycles         | 48pcs       |
| 3   | Thermal Shock            | 100°C~55°C<br>10m 10m                | 100 cycles         | 48pcs       |
| 4   | Operating Life           | IF=20mA                              | 1000 hrs           | 48pcs       |
| 5   | High Temperature Storage | TEMP: +90°C                          | 1000 hrs           | 48pcs       |
| 6   | Low Temperature Storage  | TEMP: -30°C                          | 1000 hrs           | 48pcs       |
| 7   | 80°C                     | 1000 hrs                             | 48pcs              |             |
| 8   | High Humidity            | 80%R.H.                              | 1000 hrs           | 48pcs       |

❖ **Test Circuit**



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❖ **Precautions For Use**

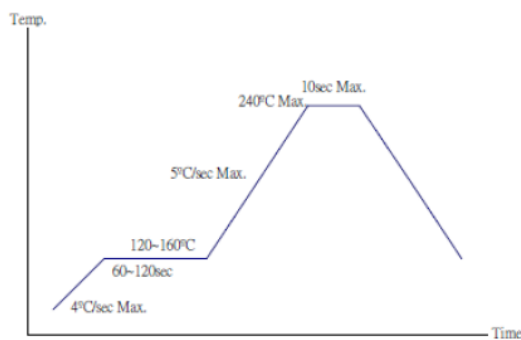
➤ **Overdrive current proof**

Customer must apply resistors for protection; otherwise slight voltage shift will cause current change with great deal. (Burn out will happen)

➤ **Storage**

- The operation of temperature and R.H. are: 5°C ~30°C, 60%R.H> Max.
- Once the packing is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccant. Considering the tape life, we suggest our customers to use our products within 1.5 year (from production date).
- It's recommended to bake before soldering when the package is unsealed more than 72hrs. The condition is: 60°C±5°C for 15hrs.

❖ **Reflow Temp. / Time**



❖ **Hand Soldering Iron**

- Temperature at tip of iron: 400°C Max. (35W Max.)
- Soldering time: 3±1sec

❖ **Soldering Heat Reliability**

- Please refer to the following figure:

