**Features:**
1. Package: 3.5*2.8*1.9mm (TOP view white LED)
2. Emitted Color: White
3. Mono-color type
4. Soldering methods: All SMT assembly methods
5. Comply ROHS standard.

**Applications:**
1. LCD back light.
2. Mobile phones: LCD,
4. General use.

**Package Outline Dimension:**

![Package Diagram]

**NOTES:**
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.10mm unless otherwise specified.
3. Specifications are subject to change without notice.
Absolute Maximum Ratings (Ta=25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Dissipation</td>
<td>Pd</td>
<td>100</td>
<td>mW</td>
</tr>
<tr>
<td>Forward Current</td>
<td>IF</td>
<td>20</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current *1</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>Soldering Temperature</td>
<td>Tsol</td>
<td>260 (for 5 seconds)</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Topr</td>
<td>-30°C~85°C</td>
<td>-</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td>-40°C~85°C</td>
<td>-</td>
</tr>
<tr>
<td>Electrostatic discharge</td>
<td>ESD</td>
<td>2000</td>
<td>V</td>
</tr>
</tbody>
</table>

*1 IFP condition: pulse of 1/10 duty and 0.1ms width.

Electrical-optical characteristics (Ta=25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage</td>
<td>Vf</td>
<td>3.0</td>
<td>3.2</td>
<td>3.4</td>
<td>V</td>
<td>I_F=20mA</td>
</tr>
<tr>
<td>Luminous Intensity</td>
<td>Lm</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>lm</td>
<td></td>
</tr>
<tr>
<td>Luminous Intensity</td>
<td>Iv</td>
<td>1500</td>
<td>2000</td>
<td>mcd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>2θ_{1/2}</td>
<td>120</td>
<td></td>
<td>deg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reverse Current</td>
<td>IR</td>
<td></td>
<td>5</td>
<td>μA</td>
<td>VR=5V</td>
<td></td>
</tr>
</tbody>
</table>

Note: 1. Tolerance of luminous intensity is ±10%
2. Tolerance of forward voltage is ±0.05V

Typical Electro-Optical Characteristics Curves
**Judgment criteria of failure for the reliability**

- **Iv**: Below 50% of initial values
- **Vf**: Over 20% of upper limit value
- **IR**: Over 2 times of upper limit value

Note: Measurement shall be taken between 2 hours and after the test LED have been returned to normal ambient conditions after completion of each test.

**Precautions for use:**

1. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.
2. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit.
3. **Storage:**
   - 3.1 Don’t open the moisture proof bag before ready to use the LEDs.
   - 3.2 The LEDs should be kept at 30°C or less and 60%RH or less before opening the package. The max. storage period before opening the package is 1 year.
   - 3.3 After opening the package, the LEDs should be kept at 30°C/35%RH or less, and it should be used within 7 days.
   - 3.4 If the LEDs be kept over the conditions of 3.4, baking is required before mounting. Baking condition as below: 60 ± 5°C for 12 hrs.
4. **Soldering condition:**
   - 4.1 Manual of soldering: The temp. of the iron should be lower than 280°C and soldering within 3sec per solder-pad is to be observed.
   - 4.2 Pb-free solder temp. –time profile

4.3 DIP soldering (Wave Soldering) temp. -time profile:
Note: 

a) Reflow soldering should not be done more than two times.

b) Don’t put stress on the LEDs when soldering.

c) Don’t warp the circuit board before it have been returned to normal ambient conditions after soldering.

Loaded quantity: 2000 pcs/reel

※ Package Method:(unit:mm)