NTE3001
Light Emitting Diode
Miniature, Diffused Red

Description:
The NTE3001 is a deep red source color device made with a diffused Gallium Aluminum Indium Phosphide (AlGaInP) Red Light Emitting Diode mounted in a two lead epoxy package with a red diffused lens.

The NTE3001 is intended for high volume indicator light applications where low cost, high reliability, and top performance are required. Major usage is in applications such as diagnostic lights on printed circuit boards and panel lights. This device can be used to displace subminiature lamps as small as T3/4 size.

Features:
- Subminiature Package
- Wide Viewing Angle
- Long Life Solid State Reliability
- Low Package Profile

Applications:
- Small Indicator for Indoor Applications
- Flat Backlight for LCD, Switches and Symbols
- Indicator and Backlight in Office Equipment
- Indicator and Backlight for Battery Driven Devices
- Indicator and Backlight for Audio and Video Equipment
- Automotive: Backlighting in Dashboards and Switches
- Telecommunication: Indicator and Backlighting in Telephone and FAX

Absolute Maximum Ratings: \( T_A = +25^\circ \text{C} \) unless otherwise specified

- Reverse Voltage, \( V_R \) ................................................................. 5V
- Forward Current, \( I_F \) ................................................................. 25mA
- Peak Forward Current (Duty 1/10 @ 1kHz), \( I_{FP} \) .............................. 60mA
- Power Dissipation, \( P_d \) ................................................................. 60mW
- Electrostatic Discharge (HBM), ESD ........................................... 2000V
- Operating Temperature Range, \( T_{opr} \) ......................................... \(-40^\circ \text{C} \) to \(+85^\circ \text{C}\)
- Storage Temperature Range, \( T_{stg} \) ............................................. \(-40^\circ \text{C} \) to \(+100^\circ \text{C}\)
- Lead Temperature, \( T_L \)  
  (Reflow soldering, 10sec) .......................................................... +260^\circ \text{C}
  (Hand soldering, 3sec) .......................................................... +350^\circ \text{C}

Rev. 3–14
## Electrical/Optical Characteristics: \( T_A = +25^\circ C \) unless otherwise specified

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luminous Intensity</td>
<td>( I_V )</td>
<td>( I_F = 20\text{mA} )</td>
<td>63</td>
<td>125</td>
<td>–</td>
<td>mcd</td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>( 2\theta/2 )</td>
<td>( I_F = 20\text{mA} )</td>
<td>–</td>
<td>45</td>
<td>–</td>
<td>degrees</td>
</tr>
<tr>
<td>Peak Wavelength</td>
<td>( \lambda_p )</td>
<td>( I_F = 20\text{mA} )</td>
<td>–</td>
<td>650</td>
<td>–</td>
<td>nm</td>
</tr>
<tr>
<td>Dominate Wavelength</td>
<td>( \lambda_d )</td>
<td>( I_F = 20\text{mA} )</td>
<td>–</td>
<td>639</td>
<td>–</td>
<td>nm</td>
</tr>
<tr>
<td>Spectral Radiation Bandwidth</td>
<td>( \Delta\lambda )</td>
<td>( I_F = 20\text{mA} )</td>
<td>–</td>
<td>20</td>
<td>–</td>
<td>nm</td>
</tr>
<tr>
<td>Forward Voltage</td>
<td>( V_F )</td>
<td>( I_F = 20\text{mA} )</td>
<td>1.7</td>
<td>2.0</td>
<td>2.4</td>
<td>V</td>
</tr>
<tr>
<td>Reverse Current</td>
<td>( I_R )</td>
<td>( V_R = 5\text{V} )</td>
<td>–</td>
<td>–</td>
<td>10</td>
<td>( \mu\text{A} )</td>
</tr>
</tbody>
</table>

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![Diagram showing the dimensions of a LED:](image-url)