**NLD453500G**

- Blue Light Emission Source
- 450 nm, 3.5 W
- Multi-Mode
- RoHS Compliant
- without Photodiode

**Description**

*NLD453500G* is a blue multi-mode laser diode, typically emitting at 450 nm, with rated output power of 3.5 W. *NLD453500G* comes in 9mm TO-Can package without monitor diode, and is RoHS compliant.

**Maximum Rating** (\(T_{\text{CASE}} = 25^\circ\text{C}\))

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Values</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Current ((T_A=25^\circ\text{C}))</td>
<td>(I_F)</td>
<td>2.8</td>
<td>A</td>
</tr>
<tr>
<td>Allowable Reverse Current</td>
<td>(I_R)</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>(T_{\text{STG}})</td>
<td>-20</td>
<td>+80</td>
</tr>
<tr>
<td>Operating Case Temperature</td>
<td>(T_C)</td>
<td>0</td>
<td>+50</td>
</tr>
</tbody>
</table>

**Electro-Optical Characteristics** (\(T_{\text{CASE}} = 25^\circ\text{C}\), \(I_F = 2.3\) A)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Values</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant Wavelength</td>
<td>(\lambda_P)</td>
<td>440</td>
<td>450</td>
</tr>
<tr>
<td>Radiated Power</td>
<td>(P_O)</td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>Forward Voltage</td>
<td>(V_F)</td>
<td>4.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Threshold Current</td>
<td>(I_{\text{TH}})</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Slope Efficiency</td>
<td>(\eta)</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Beam Divergence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>(\Theta_{</td>
<td></td>
<td>})</td>
</tr>
<tr>
<td>Perpendicular</td>
<td>(\Theta_{\perp})</td>
<td>37</td>
<td>45</td>
</tr>
<tr>
<td>Beam Pointing Accuracy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perpendicular</td>
<td>(\Delta\Theta_{\perp})</td>
<td>-3</td>
<td>3</td>
</tr>
</tbody>
</table>
Outline Dimensions

9mm TO-Can

**Bottom View:**

All dimensions in mm

### Electrical Layout

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1</td>
<td>LD Anode</td>
</tr>
<tr>
<td>Pin 2</td>
<td>LD Cathode</td>
</tr>
</tbody>
</table>
Precautions

Static Electricity:

Laser diodes are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these diodes. Surge voltage or electrostatic discharge can result in complete failure of the device.

Safety of Laser light:

During operation this laser diode does emit highly concentrated blue light, which is hazardous to human skin and eyes. Skin and Eyes must not be exposed to direct or indirect laser light at any time. Protective safety glasses are recommended.

This laser diode is classified Class 4 according to IEC60825-1 and 21 Part 1040.10 Safety Standards. It is advised to attach a warning label on products/systems that do utilize this laser diode:

Operation:

Do only operate this laser diode with a current source.

Running these laser diode from a voltage source will result in complete failure of the device.

Current of a laser diode is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.

Laser diode must be cooled !!