Octa-Beam AlGaAs Laser Diode

SLD266ZS

Description

SLD266ZS is a common-anode 8beam AlGaAs laser diode for printers.
(Application : Laser printer)

Features

8beam array (beam pitch 30μm)

Applications

◆ Digital copier
◆ Laser beam printer

Recommended Operating Optical Power Output

10 mW
Absolute Maximum Ratings

- Optical power output  \( P_{\text{omax}} \): 15 mW
- Reverse voltage  \( V_R \): 2 V
- Operating temperature  \( \text{Topr} \): \(-10\degree\text{C} \) to \(+60\degree\text{C} \)
- Storage temperature  \( \text{Tstg} \): \(-40\degree\text{C} \) to \(+85\degree\text{C} \)

Connection diagram

Pin configuration
## Electrical and Optical Characteristics

(Tc = 25 °C unless otherwise noted  Tc : Case temperature)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Diff.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold current</td>
<td>Ith</td>
<td></td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>mA</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td>Po = 10 mW</td>
<td>—</td>
<td>20</td>
<td>35</td>
<td>—</td>
<td>mA</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>Po = 10 mW</td>
<td>1.6</td>
<td>1.8</td>
<td>2.3</td>
<td>—</td>
<td>V</td>
</tr>
<tr>
<td>Differential efficiency</td>
<td>η</td>
<td>8mW/(I(10mW)-I(2mW))</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
<td>—</td>
<td>mW/mA</td>
</tr>
<tr>
<td>Monitor current</td>
<td>Im</td>
<td>Po = 10mW, Vr = 5V</td>
<td>0.50</td>
<td>0.8</td>
<td>1.20</td>
<td>20%</td>
<td>mA</td>
</tr>
<tr>
<td>Radiation angle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>θ/</td>
<td>Po = 10 mW</td>
<td>9</td>
<td>12</td>
<td>16</td>
<td>2</td>
<td>deg</td>
</tr>
<tr>
<td>Perpendicular</td>
<td>θ⊥</td>
<td></td>
<td>23</td>
<td>27</td>
<td>31</td>
<td>3</td>
<td>deg</td>
</tr>
<tr>
<td></td>
<td>θ/ + θ⊥</td>
<td></td>
<td>36</td>
<td>39</td>
<td>43.5</td>
<td>—</td>
<td>deg</td>
</tr>
<tr>
<td>Deviation angle</td>
<td>Δθ/</td>
<td></td>
<td>—</td>
<td>—</td>
<td>±2</td>
<td>—</td>
<td>deg</td>
</tr>
<tr>
<td></td>
<td>Δθ⊥</td>
<td></td>
<td>—</td>
<td>—</td>
<td>±3</td>
<td>—</td>
<td>deg</td>
</tr>
<tr>
<td>Polarization</td>
<td>Pol</td>
<td></td>
<td>-10</td>
<td>—</td>
<td>10</td>
<td>10</td>
<td>deg</td>
</tr>
<tr>
<td>Emitting points</td>
<td>ΔX,ΔY</td>
<td>Center among beams</td>
<td>—</td>
<td>—</td>
<td>±50</td>
<td>—</td>
<td>μm</td>
</tr>
<tr>
<td>Position accuracy</td>
<td>ΔZ</td>
<td></td>
<td>—</td>
<td>—</td>
<td>±50</td>
<td>3</td>
<td>μm</td>
</tr>
<tr>
<td>Wavelength</td>
<td>λp</td>
<td>Po = 10 mW</td>
<td>785</td>
<td>790</td>
<td>800</td>
<td>1.5</td>
<td>nm</td>
</tr>
</tbody>
</table>
Notes on Operation

Care should be taken for the following points when using this product.

1. This product corresponds to a Class 3B product under IEC 60825-1.

2. Eye protection against laser beams
   Take care not to allow laser beams to enter your eyes under any circumstances.
   For observing laser beams always use safety goggles that block laser beams. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.

3. Gallium Arsenide
   This product uses gallium arsenide (GaAs). This is not a problem for normal use, but GaAs vapors may be potentially hazardous to the human body. Therefore, never crush, heat to the maximum storage temperature or higher, or place the product in your mouth.
   In addition, the following disposal methods are recommended when disposing of this product.
   (1) Engaging the services of a contractor certified in the collection, transport and intermediate treatment of items containing arsenic.
   (2) Managing the product through to final disposal as specially managed industrial waste which is handled separately from general industrial waste and household waste.

4. Prevention of surge current and electrostatic discharge
   Laser diodes are most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode for even an extremely short time, the strong light emitted from the laser diode promotes deterioration and then destruction of the laser diode. Therefore, note that surge current should not flow to the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destroyed instantly because electrostatic discharge is easily applied by a human body. Therefore, be extremely careful about over current and electrostatic discharge.
   Also, use the power supply that was designed not to exceed the optical power output specified at the absolute maximum ratings.

5. Use for special applications
   This product is not designed or manufactured for use in equipment used under circumstances where failure may pose a risk to life and limb, or result in significant material damage, etc.
   Consult your Sony sales representative when investigating use for medical, vehicle, nuclear power control or other special applications.

6. “Environment-related Substances to be Controlled”
   No substances classified at Level 1 (immediate ban) of Sony Technical Standard, SS-00259, “Management regulations for the Environment-related Substances to be Controlled”. The excerpt from SS-00259 is introduced on following URL:
   http://www.sony.net/SonyInfo/procurementinfo/ss00259/
Package outline

(Unit: mm)