**20mm BIG LAMP**

Part Number: DLC/6EGW
High Efficiency Red Green

**Features**
- 12 pins.
- High luminous intensity.
- Low power consumption.
- Wide viewing angle.
- Categorized for luminous intensity.
- Excellent on/off contrast.
- Easy mounting on P.C. board or sockets.
- Solid state reliability.
- RoHS compliant.

**Description**
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

**Package Dimensions**

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
Selection Guide

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>( I_v , (mcd) ) [2] @ 10mA</th>
<th>View Angle [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLC/6EGW</td>
<td>High Efficiency Red (GaAsP/GaP)</td>
<td>White Diffused</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Green (GaP)</td>
<td></td>
<td>15</td>
<td>32</td>
</tr>
</tbody>
</table>

Notes:
1. \( \theta_{1/2} \) is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.

Electrical / Optical Characteristics at \( TA=25^\circ C \)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Device</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
<th>Test Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda_{peak} )</td>
<td>Peak Wavelength</td>
<td>High Efficiency Red Green</td>
<td>627 nm</td>
<td>565 nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>( \lambda_D ) [1]</td>
<td>Dominant Wavelength</td>
<td>High Efficiency Red Green</td>
<td>625 nm</td>
<td>568 nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>( \Delta\lambda/2 )</td>
<td>Spectral Line Half-width</td>
<td>High Efficiency Red Green</td>
<td>45 nm</td>
<td>30 nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>( C )</td>
<td>Capacitance</td>
<td>High Efficiency Red Green</td>
<td>15 pF</td>
<td>15 pF</td>
<td>V=0V; f=1MHz</td>
<td></td>
</tr>
<tr>
<td>( V_F ) [2]</td>
<td>Forward Voltage</td>
<td>High Efficiency Red Green</td>
<td>2 V</td>
<td>2.2 V</td>
<td>2.5 V</td>
<td>I=20mA</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse Current</td>
<td>High Efficiency Red Green</td>
<td>10 uA</td>
<td>10 uA</td>
<td>V=5V</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

Absolute Maximum Ratings at \( TA=25^\circ C \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>High Efficiency Red</th>
<th>Green</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>75</td>
<td>62.5</td>
<td>mW</td>
</tr>
<tr>
<td>DC Forward Current</td>
<td>30</td>
<td>25</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>160</td>
<td>140</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Operating / Storage Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Solder Temperature [2]</td>
<td>260°C For 3 Seconds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
DLC/6EGW
High Efficiency Red

Graphs showing:
- Forward Current (mA) vs. Forward Voltage
- Luminous Intensity vs. Forward Current
- Forward Current (mA) vs. Ambient Temperature (°C)
- Relative Luminous Intensity vs. Ambient Temperature (°C)
- Spatial Distribution

Graphs indicate performance characteristics of DLC/6EGW High Efficiency Red LED under various conditions.
THROUGH HOLE DISPLAY MOUNTING METHOD

Lead Forming
Do not bend the component leads by hand without proper tools.
The leads should be bent by clinching the upper part of the lead firmly such that the bending force is not exerted on the plastic body.

Installation
1. The installation process should not apply stress to the lead terminals.
2. When inserting for assembly, ensure the terminal pitch matches the substrate board’s hole pitch to prevent spreading or pinching the lead terminals.

DISPLAY SOLDERING CONDITIONS

Wave Soldering Profile for Lead-free Through-hole LED.

NOTES:
1. Recommend the wave temperature 245°C~260°C. The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering, the PCB top-surface temperature should be kept below 105°C.
5. No more than once.
Soldering General Notes:

a. Through-hole displays are incompatible with reflow soldering.

b. If components will undergo multiple soldering processes, or other processes where the components may be subjected to intense heat, please check with Kingbright for compatibility.

CLEANING

1. Mild "no-clean" fluxes are recommended for use in soldering.

2. If cleaning is required, Kingbright recommends to wash components with water only. Do not use harsh organic solvents for cleaning, because they may damage the plastic parts. And the devices should not be washed for more than one minute.

CIRCUIT DESIGN NOTES

1. Protective current-limiting resistors may be necessary to operate the Displays.

2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.