

**Features**

- 3.2mmx1.6mm SMD LED, 0.75mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Moisture sensitivity level: level 3.
- RoHS compliant.

**Description**

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

**Package Dimensions**

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2(0.008") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.
Selection Guide

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>IV (mcd) [2] @ 20mA</th>
<th>Viewing Angle [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>APT3216EC</td>
<td>High Efficiency Red (GaAsP/GaP)</td>
<td>Water Clear</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*3</td>
<td>*8</td>
</tr>
</tbody>
</table>

Notes:
1. θ 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%.
* Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°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>λpeak</td>
<td>Peak Wavelength</td>
<td>High Efficiency Red</td>
<td>627</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>λD [1]</td>
<td>Dominant Wavelength</td>
<td>High Efficiency Red</td>
<td>617</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>Δλ1/2</td>
<td>Spectral Line Half-width</td>
<td>High Efficiency Red</td>
<td>45</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>High Efficiency Red</td>
<td>15</td>
<td>pF</td>
<td>V=0V,f=1MHz</td>
<td></td>
</tr>
<tr>
<td>VF [2]</td>
<td>Forward Voltage</td>
<td>High Efficiency Red</td>
<td>2</td>
<td>2.5V</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>IR</td>
<td>Reverse Current</td>
<td>High Efficiency Red</td>
<td>10</td>
<td>μA</td>
<td>V=5V</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>High Efficiency Red</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>75</td>
<td>mW</td>
</tr>
<tr>
<td>DC Forward Current</td>
<td>30</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>160</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
High Efficiency Red APT3216EC

**Graphs:**
- **Relative Radiant Intensity vs. Wavelength**
- **Forward Current (mA) vs. Forward Voltage**
- **Luminous Intensity (lm) vs. Forward Current**
- **Forward Current (mA) vs. Ambient Temperature**
- **Relative Luminous Intensity vs. Ambient Temperature**
- **Spatial Distribution**
Reflow soldering is recommended and the soldering profile is shown below. Other soldering methods are not recommended as they might cause damage to the product.

Recommended Soldering Pattern
(Units : mm; Tolerance: ± 0.1)

Reel Dimension

Tape Dimensions
(Units : mm)
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