SMT1550
High Performance NIR LED

SMT1550 consists of an InGaAsP LED mounted on the lead frame as Top LED package, and is sealed with epoxy resin. It emits a spectral band of radiation at 1550nm.

<Specifications>
1. Product Name: Top NIR LED
2. Type Number: SMT1550
3. Chip:
   - Material: InGaAsP
   - Peak Wavelength: 1550nm typ.
4. Package
5. Lead Frame Die: Siliver Plated
6. Resin Material: PA6T
7. Lens: Epoxy Resin

Absolute Maximum Ratings [Tc=25°C]

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Dissipation</td>
<td>PD</td>
<td>130</td>
<td>mW</td>
</tr>
<tr>
<td>Forward Current</td>
<td>IF</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Pulse Forward Current*</td>
<td>IFP</td>
<td>1000</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>VR</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>Rthja</td>
<td>80</td>
<td>K/W</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>Tj</td>
<td>120</td>
<td>°C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>TOPR</td>
<td>-40~+100</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>TSTG</td>
<td>-40~+100</td>
<td>°C</td>
</tr>
<tr>
<td>Soldering Temperature**</td>
<td>TSOL</td>
<td>250</td>
<td>°C</td>
</tr>
</tbody>
</table>

* Duty=1% and Pulse Width=10us.
** Soldering condition must be completed within 5 seconds at 250℃.

Electro-Optical Characteristics [Tc=25°C]

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Condition</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage</td>
<td>VF</td>
<td>IF=50mA</td>
<td>0.9</td>
<td>1.3</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>VFP</td>
<td>IPF=1A</td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Radiated Power*</td>
<td>PO</td>
<td>IF=50mA</td>
<td>1.8</td>
<td></td>
<td></td>
<td>mW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPF=1A</td>
<td>7.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiant Intensity**</td>
<td>IE</td>
<td>IF=50mA</td>
<td>2.2</td>
<td></td>
<td>9.6</td>
<td>mW/sr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPF=1A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Wavelength</td>
<td>λP</td>
<td>IF=50mA</td>
<td>1500</td>
<td></td>
<td>1600</td>
<td>nm</td>
</tr>
<tr>
<td>Half Width</td>
<td>Δλ</td>
<td>IF=50mA</td>
<td>125</td>
<td></td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>Viewing Half Angle</td>
<td>θ1/2</td>
<td>IF=50mA</td>
<td>±64</td>
<td></td>
<td></td>
<td>deg</td>
</tr>
<tr>
<td>Rise Time</td>
<td>tr</td>
<td>IF=50mA</td>
<td>80</td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Fall Time</td>
<td>tf</td>
<td>IF=50mA</td>
<td>30</td>
<td></td>
<td></td>
<td>ns</td>
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</tbody>
</table>

* Measured by G8370-85.
** Measured by Ando Optical Meter AQ2140 & AQ2742.
Typical Characteristic Curves

Forward Current - Forward Voltage

Relative Radiant Intensity - Forward Current

Forward Current - Pulse Duration

Allowable Forward Current - Ambient Temperature

Forward Voltage (V)

Forward Current (mA)

Relative Radiant Intensity (A.U.)

Allowable Forward Current (mA)

Rthja=80K/W

Forward Current - Pulse Duration

Forward Current Ifp [mA]

Duration tw [µs]

Ambient Temperature (°C)
Forward Voltage - Ambient Temperature

- If=50mA

Relative Radiant Intensity - Ambient Temperature

- If=50mA

Peak Wavelength - Ambient Temperature

- If=50mA
Wrapping
Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

SMD LED storage and handling precautions

Storage Conditions before Opening a Moisture-Barrier Aluminum Bag
- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH.
- Please note that the maximum shelf life is 12 months under these conditions.

Storage Conditions after Opening a Moisture-Barrier Aluminum Bag
- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.
- The 72-hour long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag. However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag

Notes about Re-sealing a Moisture-Barrier Aluminum Bag
- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag
- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.
Disclaimer

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

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