Bivar Surface Mount 1210 package RGB LED combines three chips in a single package. They are ideal for small scale applications where multiple signals need to be displayed. Wide variety of colors can be created by simply mixing the three chips in different combinations. Bivar offers water clear LED lens for high luminous intensity and wide viewing angles making them suitable for lighting and display applications. The SM1210 RGB LED is packaged in standard tape and reels for pick and place assemblies.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Material</th>
<th>Emitted Color</th>
<th>Peak Wavelength λp(nm) TYP.</th>
<th>Lens Appearance</th>
<th>Luminous Intensity (mcd) TYP.</th>
<th>Viewing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM1210RGB</td>
<td>AlGaInP</td>
<td>RED</td>
<td>645</td>
<td>Water Clear</td>
<td>72</td>
<td>130°</td>
</tr>
<tr>
<td></td>
<td>InGaN</td>
<td>BLUE</td>
<td>468</td>
<td></td>
<td>72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GaN</td>
<td>GREEN</td>
<td>523</td>
<td></td>
<td>285</td>
<td></td>
</tr>
</tbody>
</table>

Outline Dimensions:

- Industry Standard Package
- RoHS Compliant
- Three Chips in One Package
- Water Clear Lens
- Wide Viewing Angle
- Ideal for Status Indication and Lighting

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.
**Absolute Maximum Ratings**

\(T_A = 25^\circ C\) unless otherwise noted

<table>
<thead>
<tr>
<th></th>
<th>Power Dissipation</th>
<th>Red - 78 mW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Blue, Green - 84 mW</td>
</tr>
<tr>
<td>Forward Current (DC)</td>
<td></td>
<td>25 mA</td>
</tr>
<tr>
<td>Peak Forward Current (^1)</td>
<td></td>
<td>100 mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td></td>
<td>5 V</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td></td>
<td>-30 ~ +80°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td></td>
<td>-40 ~ +85°C</td>
</tr>
<tr>
<td>Lead Soldering Temperature (3 mm from the base of the epoxy bulb) (^2)</td>
<td></td>
<td>260°C</td>
</tr>
</tbody>
</table>

Notes: 1. 10% Duty Cycle, Pulse Width \(\leq 0.1\) msec.  
2. Solder time less than 5 seconds at temperature extreme.

**Electrical / Optical Characteristics**

\(T_A = 25^\circ C\) & \(I_F = 20\) mA unless otherwise noted

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Emitted color</th>
<th>Forward Voltage (V) (^1)</th>
<th>Recommend Forward Current (mA)</th>
<th>Reverse Current ((\mu A))</th>
<th>Dominant Wavelength (nm) (^2)</th>
<th>Luminous Intensity (I_v) (mcd)</th>
<th>Viewing Angle 2 (\Theta) (\frac{1}{2}) (^\circ) (deg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM1210RGB</td>
<td>RED</td>
<td>/</td>
<td>2.1</td>
<td>2.6</td>
<td>/</td>
<td>20</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>BLUE</td>
<td>/</td>
<td>2.9</td>
<td>4.2</td>
<td>/</td>
<td>20</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>GREEN</td>
<td>/</td>
<td>3.1</td>
<td>4.2</td>
<td>/</td>
<td>20</td>
<td>/</td>
</tr>
</tbody>
</table>

Notes: 1. Tolerance of forward voltage : \(\pm 0.05V\).  
2. Tolerance of dominant wavelength : \(\pm 1.0\)nm.
Typical Electrical / Optical Characteristics

\[ T_A = 25^\circ C \] unless otherwise noted
Recommended Soldering Conditions

Tape and Reel Dimensions
Note: 3000 pcs/Reel

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.
Packaging and Labeling Plan
Note: 1 Reel / Bag

Sealed ESD and Moisture Barrier Bag

Humidity Indicator Card
Desiccant

Bivar Standard Packaging Label

Internal Quality Control Label

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance unless otherwise noted: X.XXX ± 0.010"
   X.X ± 0.1"

Part No. XXXX-XXX-XXX
Prod. No. XXXX-XXX-XXX
PO No. XXXX
Lot No. XXXXXXXXXX
Q'ty: X.XXX PCS
Q.C. XXX BIN
Date: 20XX.XX.XX

Bivar, Inc.
4 Thomas, Irvine, CA 92618-2593
LOT: XXXXXXXXXX

Part: XXXX-XXX-XXX
Quantity: X.XXX
RoHS Compliant