3mm (T1) Package Discrete LED
RED, Low Current

3SRDL-X
♦ Industry Standard 3mm (T1) Package
♦ RoHS Compliant
♦ Diffused Lens
♦ Available in Flange (F) and Shouldered (S) Lead Frame styles
♦ 2 mA Low Operating Current
♦ Ideal for Status Indication and Display

Bivar 3mm T1 Package 2 mA Low Current LED is special binned at 2 mA and is ideal for those applications where lower power budget is required such as solar panel or battery-powered portable devices. Bivar offers diffused LED lens for uniform light output. The Flanged LED is ideal for Panel Mount Clip & Ring assemblies. The Shouldered Lead frame LED is ideal for vertical spacer assemblies without lead bends and also has a built-in strain relief feature which is ideal for right angle holder assemblies that require lead bends.

<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>Viewing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>3SRDL-F</td>
<td>GaAlAs/GaAs</td>
<td>RED</td>
<td>645nm</td>
<td>Red Diffused</td>
<td>35°</td>
</tr>
<tr>
<td>3SRDL-S</td>
<td>GaAlAs/GaAs</td>
<td>RED</td>
<td>645nm</td>
<td>Red Diffused</td>
<td>40°</td>
</tr>
</tbody>
</table>

Part Number Designation

3 X X L - X
LED Body, mm
Emitted Color
Lens Appearance
Lead Frame & Body Style i.e. -F, -S
Low Current
3mm (T1) Package Discrete LED
RED, Low Current

Outline Dimensions

Flat Edge
Cathode ID
Ø.150 [Ø.3.8 mm]
Flange Dia.
(F Series)

Φ.118 [Ø.3.0 mm]
Flanged “3XXL-F” LED

Ø.122 [Ø.3.1 mm]
N-Flange Dia.

Ø.118 [Ø.3.0 mm]
Shouldered Lead “3XXL-S” LED

0.209 [5.3 mm]
1.00 [25.4 mm] MIN.
0.04 [1.0 mm] MIN.
0.100 [2.5 mm]

0.020 [0.5 mm] SQ. MIN.
0.032 [0.8 mm]

0.177 [4.5 mm]
1.00 [25.4 mm] MIN.
0.04 [1.0 mm] MIN.
0.100 [2.5 mm]

0.020 [0.5 mm] SQ. MIN.
0.215±0.02

Recommended Mounting
Hole Size = Ø.032+0.003-0.002

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.
3. Tolerance of overall epoxy outline: ±0.020" unless otherwise noted.
4. Epoxy meniscus may extend to 0.060" max.

Bivar reserves the right to make changes at any time without notice.
### Absolute Maximum Ratings

$T_A = 25°C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Dissipation</td>
<td>10 mW</td>
</tr>
<tr>
<td>Forward Current (DC)</td>
<td>7 mA</td>
</tr>
<tr>
<td>Peak Forward Current $^1$</td>
<td>/ mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5 V</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-25 ~ +85°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-30 ~ +100°C</td>
</tr>
<tr>
<td>Lead Soldering Temperature</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

$T_A = 25°C$ & $I_F = 2$ mA unless otherwise noted

<table>
<thead>
<tr>
<th>Part Number</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 Iv (mcd)</th>
<th>Viewing Angle 2 $\Theta$ $\frac{1}{2}$ (deg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN</td>
<td>TYP</td>
<td>MAX</td>
<td>MIN</td>
<td>TYP</td>
<td>MAX</td>
</tr>
<tr>
<td>3SRDL-F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3SRDL-S</td>
<td>/</td>
<td>1.7</td>
<td>2.4</td>
<td>/</td>
<td>2</td>
<td>/</td>
</tr>
</tbody>
</table>

Notes: 1. Tolerance of forward voltage : $\pm0.05V$.  
2. Tolerance of dominant wavelength : $\pm1.0$nm.
Typical Electrical / Optical Characteristics

$T_A = 25^\circ C$ unless otherwise noted

![Fig. 1 Relative Luminous Intensity vs. Wavelength](image1)

![Fig. 2 Directivity Radiation Diagram](image2)

![Fig. 3 Forward Voltage vs. Temperature](image3)

![Fig. 4 Relative Luminous Intensity vs. Temperature](image4)
**Recommended Soldering Conditions**

![Soldering Profile Diagram]

**Recommended Lead Free Wave Soldering Profile**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preheat Temperature</td>
<td>100°C Max.</td>
<td>20 ~ 50 Seconds</td>
</tr>
<tr>
<td>Peak Temperature</td>
<td>260°C Max.</td>
<td></td>
</tr>
<tr>
<td>Preheat Time</td>
<td>20 ~ 50 Seconds</td>
<td></td>
</tr>
<tr>
<td>Solder Time Above</td>
<td>5 Seconds Max.</td>
<td></td>
</tr>
</tbody>
</table>

Note: Turn off top heater at preheat to prevent the lamp body directly exposed to the heat source.

**Packaging and Labeling Plan**

- Anti-Static Poly Bag with Desiccant
  - (500 pcs Max. per Bag)

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