

# L200CWRGB2K-4A-IL

Red/Green/Blue

5mm, Flanged Cylindrical, 8.6mm Height

75° viewing angle

DWG BY:

LL / GP

10-22-07

CHK BY:

PL

10-23-07

QA:

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MFG:

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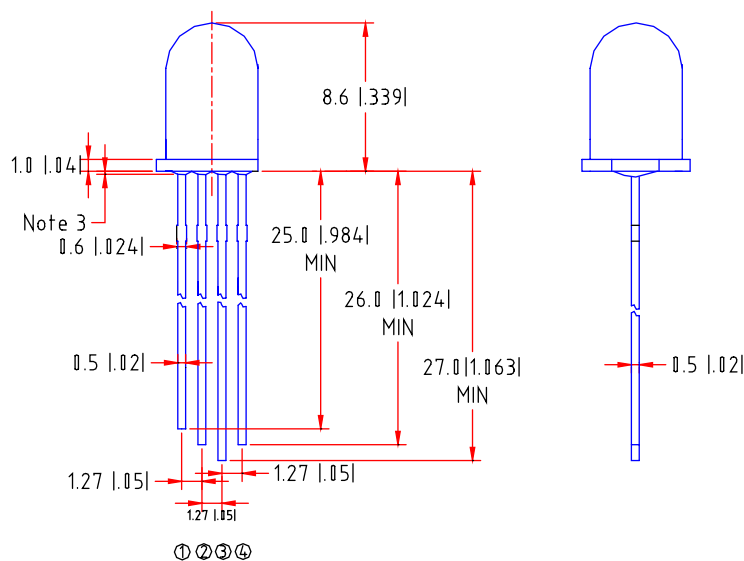
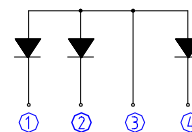
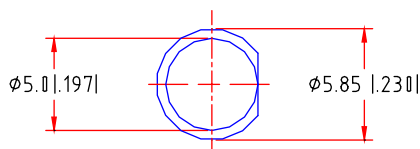
REVISION LTR: -

10-22-07

## Features:

- ◆ High intensity
- ◆ 5mm diameter package
- ◆ Tinned leads
- ◆ Pb-free
- ◆ RoHS compliant

## Package Dimensions:



1. Green Cathode
2. Red Cathode
3. Common Anode
4. Blue Cathode

| Part NO.          | Chip Material |            |       | Lens Color  | Emission Color             |
|-------------------|---------------|------------|-------|-------------|----------------------------|
| L200CWRGB2K-4A-IL | Red           | True Green | Blue  | Water Clear | Red & True Green<br>& Blue |
|                   | AlGaInP       | InGaN      | InGaN |             |                            |

### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm (.04") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.
6. Precautions for ESD: Static electricity and surge can damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

## Absolute Maximum Ratings at Ta=25°C

| Parameter                                                    | MAX.                |    | Unit  |
|--------------------------------------------------------------|---------------------|----|-------|
| Power Dissipation                                            | Red                 | 90 | mW    |
|                                                              | Blue                | 80 |       |
|                                                              | True Green          | 80 |       |
| Peak Forward Current<br>(1/10 Duty Cycle, 0.1ms Pulse Width) | 100                 |    | mA    |
| Continuous Forward Current                                   | Red                 | 35 | mA    |
|                                                              | Blue                | 20 |       |
|                                                              | True Green          | 20 |       |
| Derating Linear From 50°C                                    | 0.4                 |    | mA/°C |
| Reverse Voltage                                              | 5                   |    | V     |
| Electrostatic Discharge (ESD)                                | 600                 |    | V     |
| Operating Temperature Range                                  | -30°C to +80°C      |    |       |
| Storage Temperature Range                                    | -40°C to +100°C     |    |       |
| Lead Soldering Temperature<br>[4mm(.157") From Body]         | 280°C for 5 Seconds |    |       |

### Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2.  $\theta_{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength ( $\lambda_d$ ) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
4. Forward voltage measurement allowance is  $\pm 0.1V$
5. Luminous Intensity Measurement Allowance is  $\pm 10\%$

**Electrical Optical Characteristics at Ta=25°C**

| Parameter                 | Symbol            | Emitting Color | Min. | Typ. | Max. | Unit | Test Condition                 |
|---------------------------|-------------------|----------------|------|------|------|------|--------------------------------|
| Luminous Intensity        | I <sub>V</sub>    | Red            | 690  | 1200 | ---  | mcd  | I <sub>F</sub> =20mA<br>Note 1 |
|                           |                   | True Green     | 1500 | 3500 | ---  |      |                                |
|                           |                   | Blue           | 310  | 900  | ---  |      |                                |
| Viewing Angle             | 2θ <sub>1/2</sub> | Red            | ---  | 75   | ---  | Deg  | Note 2                         |
|                           |                   | True Green     | ---  | 75   | ---  |      |                                |
|                           |                   | Blue           | ---  | 75   | ---  |      |                                |
| Peak Emission Wavelength  | λ <sub>p</sub>    | Red            | ---  | 635  | ---  | nm   | Measurement<br>@Peak           |
|                           |                   | True Green     | ---  | 520  | ---  |      |                                |
|                           |                   | Blue           | ---  | 465  | ---  |      |                                |
| Dominant Wavelength       | λ <sub>d</sub>    | Red            | ---  | 625  | ---  | nm   | Note 3                         |
|                           |                   | True Green     | ---  | 525  | ---  |      |                                |
|                           |                   | Blue           | ---  | 470  | ---  |      |                                |
| Spectral Line Half-Width  | λ                 | Red            | ---  | 17   | ---  | nm   |                                |
|                           |                   | True Green     | ---  | 32   | ---  |      |                                |
|                           |                   | Blue           | ---  | 26   | ---  |      |                                |
| Forward Voltage           | V <sub>F</sub>    | Red            | ---  | 2.0  | 2.5  | V    | I <sub>F</sub> =20mA           |
|                           |                   | True Green     | ---  | 3.2  | 4.0  |      |                                |
|                           |                   | Blue           | ---  | 3.2  | 4.0  |      |                                |
| Reverse Current           | I <sub>R</sub>    | Red            | ---  | ---  | 10   | μA   | V <sub>R</sub> =5V             |
|                           |                   | True Green     |      |      |      |      |                                |
|                           |                   | Blue           |      |      |      |      |                                |
| Chromaticity Coordinaytes | X                 | Red            | ---  | 0.69 | ---  |      | I <sub>F</sub> =20mA           |
|                           | Y                 |                | ---  | 0.30 | ---  |      |                                |
| Chromaticity Coordinaytes | X                 | True Green     | ---  | 0.16 | ---  |      | I <sub>F</sub> =20mA           |
|                           | Y                 |                | ---  | 0.73 | ---  |      |                                |
| Chromaticity Coordinaytes | X                 | Blue           | ---  | 0.13 | ---  |      | I <sub>F</sub> =20mA           |
|                           | Y                 |                | ---  | 0.05 | ---  |      |                                |

## Typical Electrical / Optical Characteristics Curves (25°C Ambient Temperature unless Otherwise Noted)

