

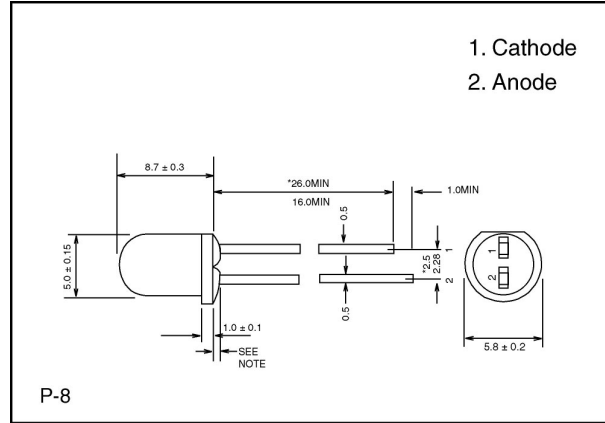


## CLL-50□31 SERIES

### LED Lamps TECHNICAL SPECIFICATION

**Features:**

- Round type LED lamps (5.0mm)
- Lens Color: Colored Diffused
- Lead spacing is measured where the leads emerge from the package
- Protruded resin under flange 1.5mm (0.59") max.



**ABSOLUTE MAXIMUM RATINGS: (Ta = 25°C)**

| Characteristic   | Symbols              | Bright Red         | Hi-Eff Red | Orange | Yellow | Green | Unit |
|--|----------------------|--------------------|------------|--------|--------|-------|------|
| Forward Direct Current                                   | I <sub>FM</sub>      | 20                 | 25         | 25     | 25     | 25    | mA   |
| Reverse Voltage (I <sub>R</sub> = 10μA)                  | V <sub>R</sub>       | 5.0                | 5.0        | 5.0    | 5.0    | 5.0   | V    |
| Peak Forward Current (Duty 1/10,cycle 0.1ms pulse width) | I <sub>F(Peak)</sub> | 60                 | 120        | 120    | 80     | 120   | mA   |
| Operating Temperature Range                              | T <sub>OPR</sub>     | (-40 to +80)       |            |        |        |       | °C   |
| Storage Temperature                                      | T <sub>STG</sub>     | (-40 to +100)      |            |        |        |       | °C   |
| Lead Soldering Temperature (1.6mm (1/16 inch) from body) |                      | 260° for 5 seconds |            |        |        |       |      |

**ELECTRICAL AND OPTICAL CHARACTERISTIC(Ta = 25°C)**

| Characteristic               | Symbol         | Condition             |      | Bright Red | Hi-Eff Red | Orange    | Yellow    | Green     | Unit |
|------------------------------|----------------|-----------------------|------|------------|------------|-----------|-----------|-----------|------|
|                              |                |                       |      | CLL-50231  | CLL-50331  | CLL-50431 | CLL-50531 | CLL-50631 |      |
| Forward Voltage              | V <sub>F</sub> | I <sub>F</sub> = 20mA | TYP  | 2.35       | 2.1        | 2.1       | 2.2       | 2.35      | V    |
|                              |                |                       | Max. | 2.7        | 2.5        | 2.5       | 2.6       | 2.7       |      |
| Luminous Intensity           | I <sub>V</sub> | I <sub>F</sub> = 20mA | TYP  | 3.5        | 16.0       | 16.0      | 16.0      | 16.0      | mcd  |
|                              |                |                       | Max. | 1.8        | 8.0        | 8.0       | 8.0       | 8.0       |      |
| Peak Emission Wavelength     | λ <sub>p</sub> | I <sub>F</sub> = 20mA |      | 700        | 640        | 635       | 585       | 565       | nm   |
| Spectrum Radiation Bandwidth | Δ λ            | I <sub>F</sub> = 20mA |      | 90         | 30         | 30        | 35        | 30        | nm   |
| Reverse Current              | I <sub>R</sub> | V <sub>R</sub> = 5V   | TYP  | 0.1        | 0.1        | 0.1       | 0.1       | 0.1       | μ A  |
|                              |                |                       | Max. | 50         | 50         | 50        | 50        | 50        |      |
| Viewing Half Angle           | θ 1/2          | I <sub>F</sub> = 20mA |      | 18°        | 18°        | 18°       | 18°       | 18°       | deg  |