

# Kingbright®

## 5.6x4.9mm TRIANGULAR LED LAMPS

L-323H BRIGHT RED

L-323G GREEN

L-323I HIGH EFFICIENCY RED

L-323Y YELLOW

L-323E ORANGE

### Features

- LOW POWER CONSUMPTION.
- RELIABLE AND RUGGED.
- SUITABLE FOR DIRECTION INDICATOR.
- I.C. COMPATIBLE.

### Description

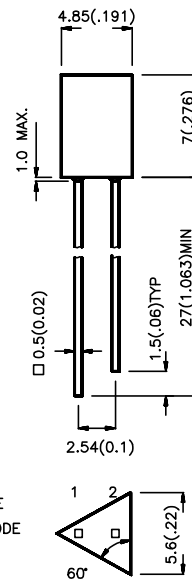
The Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The High Efficiency Red and Orange source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

### Package Dimensions



- Notes:
1. All dimensions are in millimeters (inches).
  2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
  3. Lead spacing is measured where the lead emerge package.
  4. Specifications are subjected to change without notice.

### Selection Guide

| Part No. | Dice                            | Lens Type       | Iv (mcd)<br>@ 10 mA |      | Viewing<br>Angle |
|----------|---------------------------------|-----------------|---------------------|------|------------------|
|          |                                 |                 | Min.                | Max. | $2\theta_{1/2}$  |
| L-323HD  | BRIGHT RED (GaP)                | RED DIFFUSED    | 0.5                 | 0.8  | 100°             |
| L-323ID  | HIGH EFFICIENCY RED (GaAsP/GaP) | RED DIFFUSED    | 5                   | 12.5 | 100°             |
| L-323ED  | ORANGE (GaAsP/GaP)              | ORANGE DIFFUSED | 5                   | 12.5 | 100°             |
| L-323GD  | GREEN (GaP)                     | GREEN DIFFUSED  | 2                   | 8    | 100°             |
| L-323YD  | YELLOW (GaAsP/GaP)              | YELLOW DIFFUSED | 2                   | 5    | 100°             |

Note:  
1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

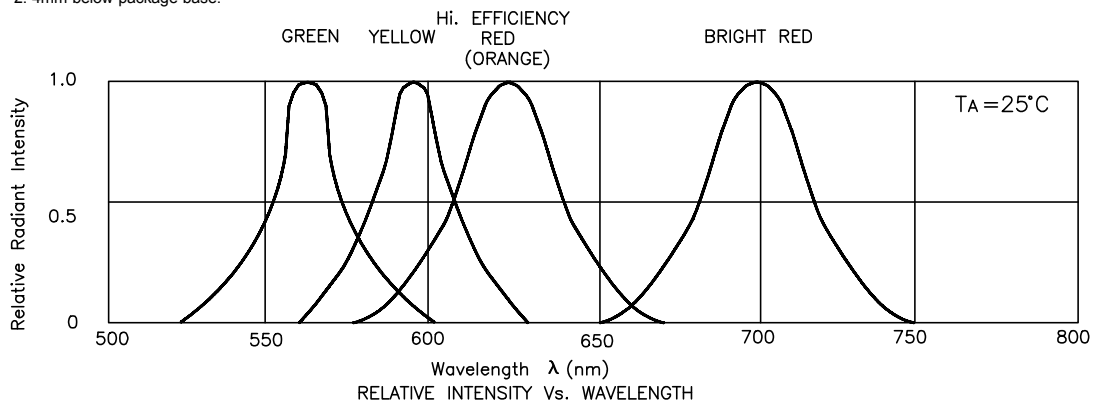
### Electrical / Optical Characteristics at $T_A=25^\circ\text{C}$

| Symbol                  | Parameter               | Device   | Typ.                            | Max.                            | Units         | Test Conditions |
|-------------------------|-------------------------|--|---------------------------------|---------------------------------|---------------|-----------------|
| $\lambda_{\text{peak}}$ | Peak Wavelength         | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow | 700<br>625<br>625<br>565<br>590 |                                 | nm            | IF=20mA         |
| $\Delta\lambda_{1/2}$   | Spectral Line Halfwidth | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow | 45<br>45<br>45<br>30<br>35      |                                 | nm            | IF=20mA         |
| C                       | Capacitance             | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow | 40<br>12<br>12<br>45<br>10      |                                 | pF            | VF=0V;f=1MHz    |
| $V_F$                   | Forward Voltage         | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow | 2.0<br>2.0<br>2.0<br>2.2<br>2.1 | 2.5<br>2.5<br>2.5<br>2.5<br>2.5 | V             | IF=20mA         |
| $I_R$                   | Reverse Current         | All  | 10                              |                                 | $\mu\text{A}$ | VR = 5V         |

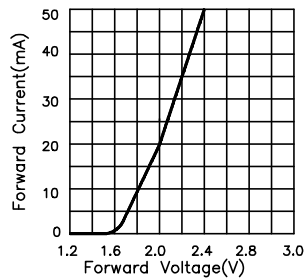
### Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

| Parameter                     | Bright Red           | High Efficiency Red | Orange | Green | Yellow | Units |
|-------------------------------|----------------------|---------------------|--------|-------|--------|-------|
| Power dissipation             | 120                  | 105                 | 105    | 105   | 105    | mW    |
| DC Forward Current            | 25                   | 30                  | 30     | 25    | 30     | mA    |
| Peak Forward Current [1]      | 150                  | 150                 | 150    | 150   | 150    | mA    |
| Reverse Voltage               | 5                    | 5                   | 5      | 5     | 5      | V     |
| Operation/Storage Temperature | -40 °C To +85 °C     |                     |        |       |        |       |
| Lead Solder Temperature [2]   | 260 °C For 5 Seconds |                     |        |       |        |       |

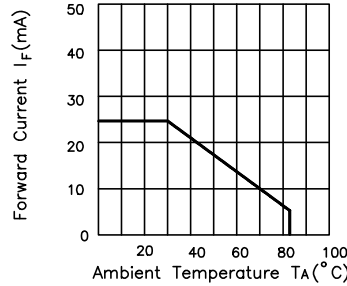
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



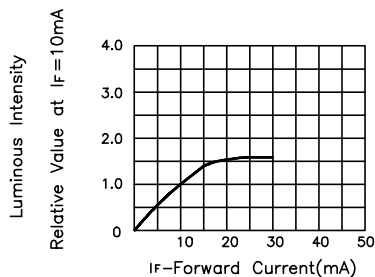
### Bright Red L-323HD



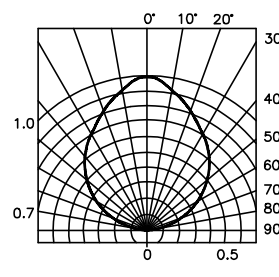
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

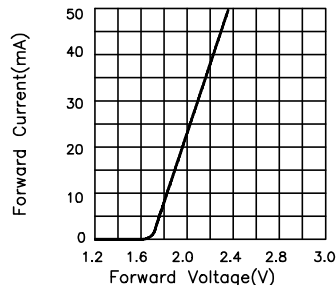


LUMINOUS INTENSITY Vs. FORWARD CURRENT

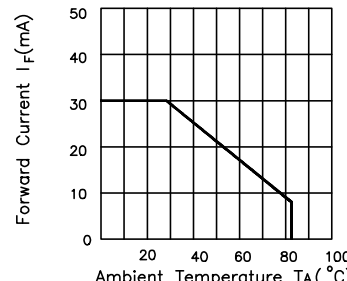


SPATIAL DISTRIBUTION

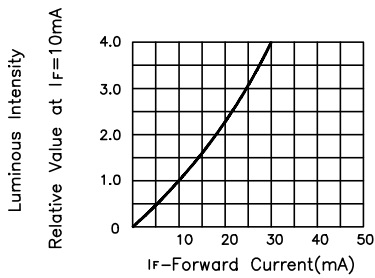
### High Efficiency Red L-323ID Orange L-323ED



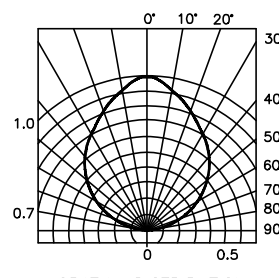
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

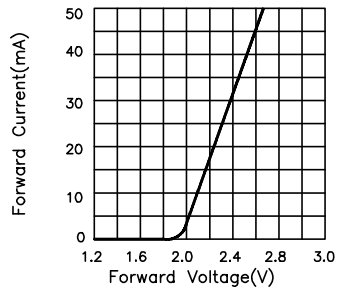


LUMINOUS INTENSITY Vs. FORWARD CURRENT

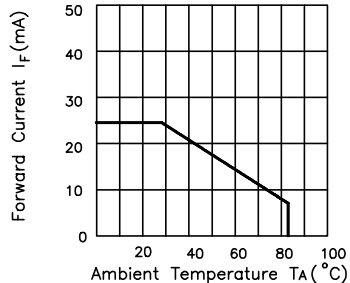


SPATIAL DISTRIBUTION

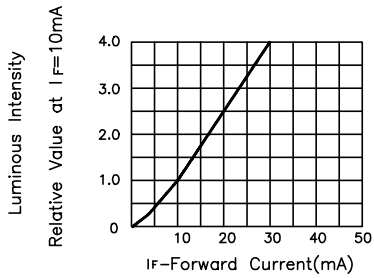
Green L-323GD



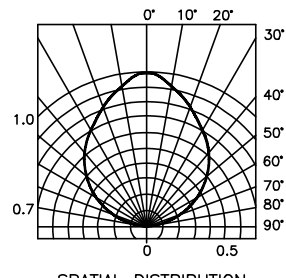
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

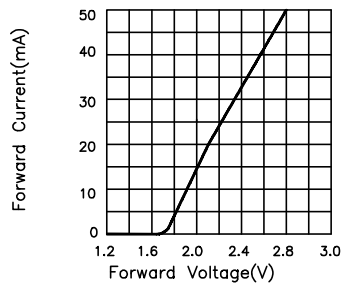


LUMINOUS INTENSITY Vs. FORWARD CURRENT

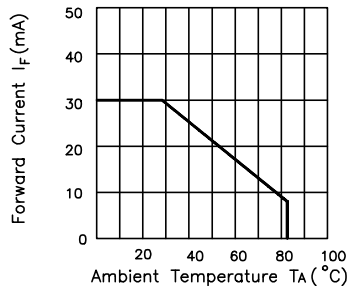


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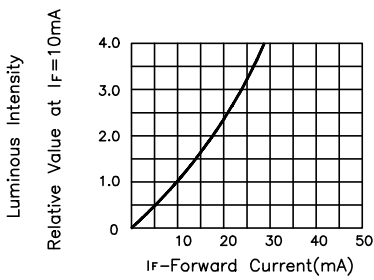
Yellow L-323YD



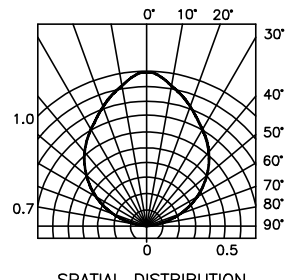
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION