

# Kingbright®

## 10mm BIG SOLID STATE LAMPS

L-813I HIGH EFFICIENCY RED

L-813G GREEN

L-813E ORANGE

L-813Y YELLOW

### Features

- 10mm DIAMETER BIG LAMP.
- LOW POWER CONSUMPTION.
- RELIABLE AND RUGGED.
- LONG LIFE - SOLID STATE RELIABILITY.

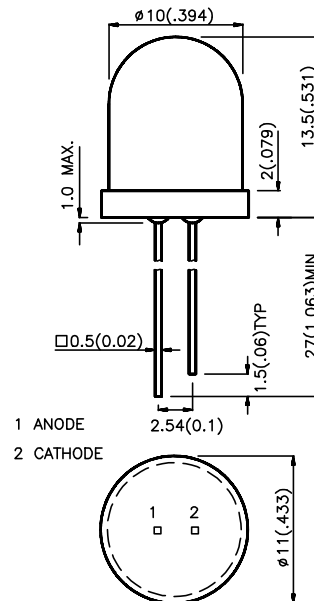
### Description

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



1 ANODE  
2 CATHODE

- 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) @ 20 mA		Viewing Angle
			Min.	Max.	2 $\theta$ 1/2
L-813ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	40	150	50°
L-813ED	ORANGE (GaAsP/GaP)	ORANGE DIFFUSED	40	150	50°
L-813GD	GREEN (GaP)	GREEN DIFFUSED	20	70	50°
L-813YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	20	70	50°

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

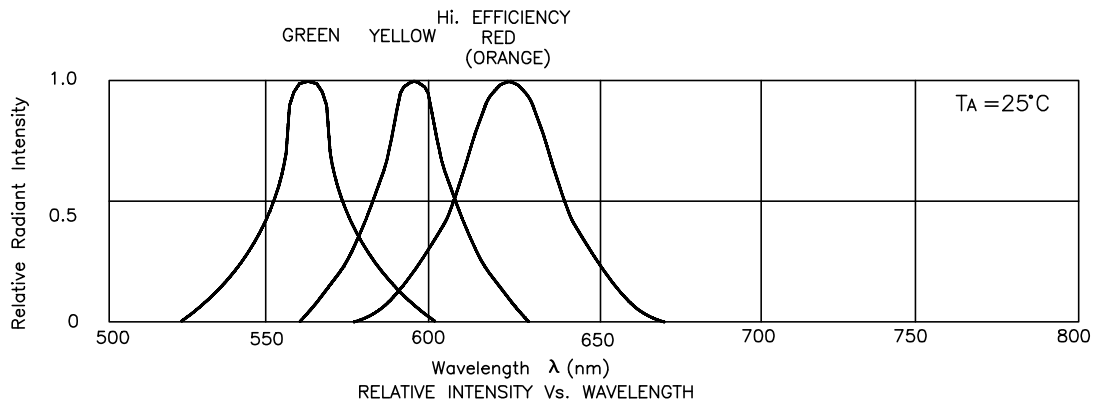
### Electrical / Optical Characteristics at T<sub>A</sub>=25°C

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

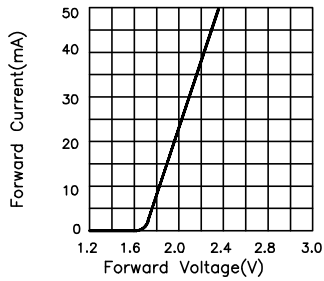
### Absolute Maximum Ratings at T<sub>A</sub>=25°C

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

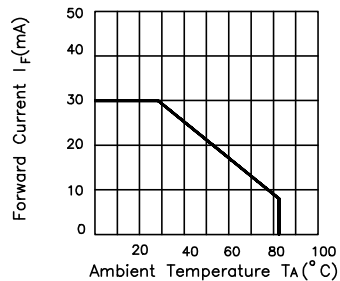
- Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



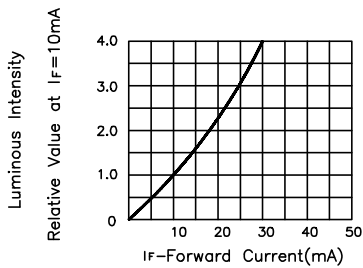
High Efficiency Red L-813ID  
Orange L-813ED



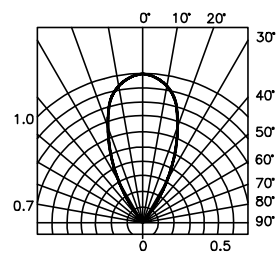
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

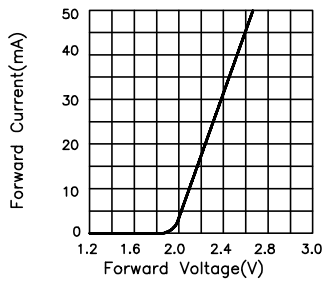


LUMINOUS INTENSITY Vs. FORWARD CURRENT

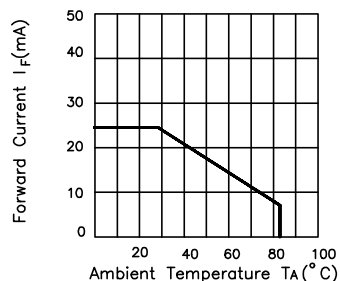


SPATIAL DISTRIBUTION

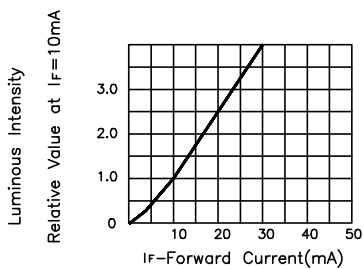
Green L-813GD



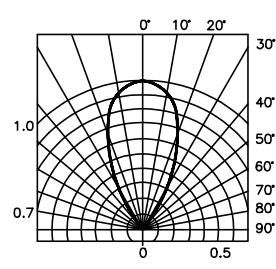
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

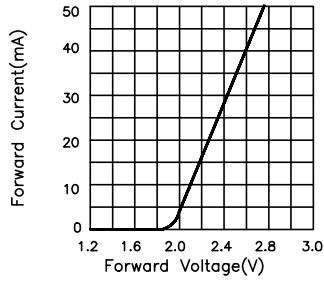


LUMINOUS INTENSITY Vs. FORWARD CURRENT

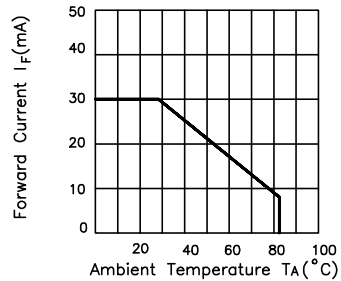


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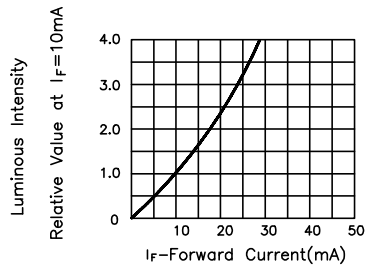
# Yellow L-813YD



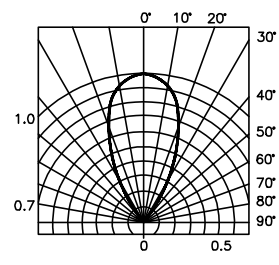
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION