

# Kingbright®

## 2.4mm FLAT TOP LAMPS

L-443H BRIGHT RED

L-443I HIGH EFFICIENCY RED

L-443SR SUPER BRIGHT RED

L-443G GREEN

L-443Y YELLOW

L-443E ORANGE

### Features

- LOW POWER CONSUMPTION.
- I.C. COMPATIBLE.
- LONG LIFE-SOLID STATE RELIABILITY.
- FITS 2.4mm HOLE IN PANEL UP TO 4mm THICK.

### Description

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

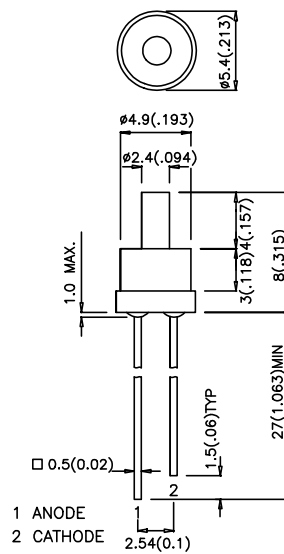
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red 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 emerges from the package.
  4. Specifications are subjected to change without notice.

### Selection Guide

| Part No.  | Dice                            | Lens Type       | Iv (mcd)<br>@ 10 mA *20mA |      | Viewing<br>Angle |
|-----------|---------------------------------|-----------------|---------------------------|------|------------------|
|           |                                 |                 | Min.                      | Max. |                  |
| L-443HDT  | BRIGHT RED (GaP)                | RED DIFFUSED    | 0.5                       | 3.2  | 100°             |
| L-443IDT  | HIGH EFFICIENCY RED (GaAsP/GaP) | RED DIFFUSED    | 3.2                       | 12.5 | 100°             |
| L-443EDT  | ORANGE (GaAsP/GaP)              | ORANGE DIFFUSED | 3.2                       | 12.5 | 100°             |
| L-443GDT  | GREEN (GaP)                     | GREEN DIFFUSED  | 1.3                       | 8    | 100°             |
| L-443YDT  | YELLOW (GaAsP/GaP)              | YELLOW DIFFUSED | 1.3                       | 8    | 100°             |
| L-443SRDT | SUPER BRIGHT RED (GaAlAs)       | RED DIFFUSED    | *50                       | *100 | 100°             |

- Notes:
1.  $\theta 1/2$  is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
  2. \* Luminous intensity with asterisk is measured at 20mA.

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

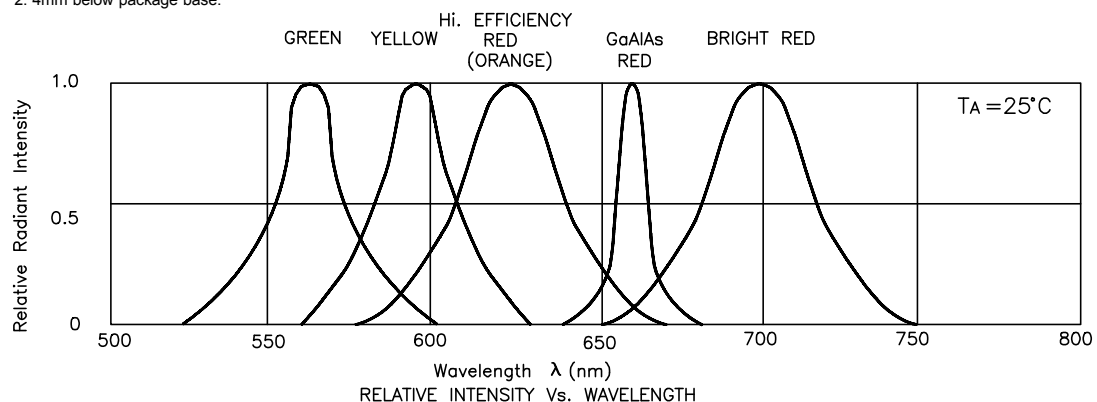
| Symbol                  | Parameter               | Device                                                                             | Typ.                                    | Max.                                   | Units | Test Conditions |
|-------------------------|-------------------------|------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|-------|-----------------|
| $\lambda_{\text{peak}}$ | Peak Wavelength         | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow<br>Super Bright Red | 700<br>625<br>625<br>565<br>590<br>660  |                                        | nm    | IF=20mA         |
| $\Delta\lambda_{1/2}$   | Spectral Line Halfwidth | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow<br>Super Bright Red | 45<br>45<br>45<br>30<br>35<br>20        |                                        | nm    | IF=20mA         |
| C                       | Capacitance             | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow<br>Super Bright Red | 40<br>12<br>12<br>45<br>10<br>95        |                                        | pF    | VF=0V;f=1MHz    |
| V <sub>F</sub>          | Forward Voltage         | Bright Red<br>High Efficiency Red<br>Orange<br>Green<br>Yellow<br>Super Bright Red | 2.0<br>2.0<br>2.0<br>2.2<br>2.1<br>1.85 | 2.5<br>2.5<br>2.5<br>2.5<br>2.5<br>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

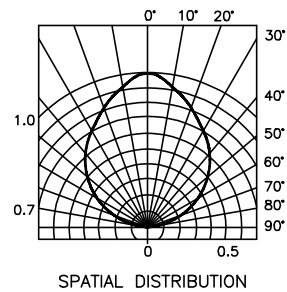
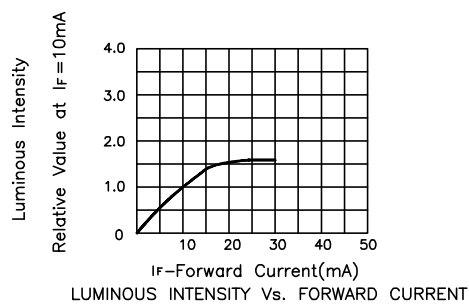
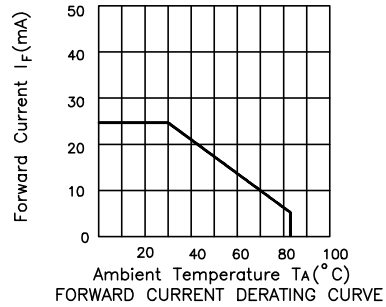
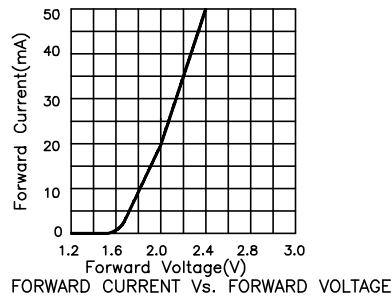
| Parameter                      | Bright Red           | High Efficiency Red | Orange | Green | Yellow | Super Bright Red | Units |
|--------------------------------|----------------------|---------------------|--------|-------|--------|------------------|-------|
| Power dissipation              | 120                  | 105                 | 105    | 105   | 105    | 100              | mW    |
| DC Forward Current             | 25                   | 30                  | 30     | 25    | 30     | 30               | mA    |
| Peak Forward Current [1]       | 150                  | 150                 | 150    | 150   | 150    | 150              | mA    |
| Reverse Voltage                | 5                    | 5                   | 5      | 5     | 5      | 5                | V     |
| Operating/Storage Temperature  | -40 °C To +85 °C     |                     |        |       |        |                  |       |
| Lead Soldering Temperature [2] | 260 °C For 5 Seconds |                     |        |       |        |                  |       |

Notes:

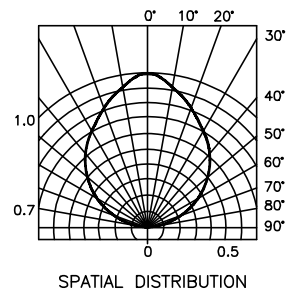
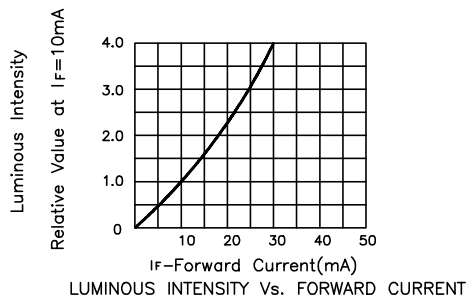
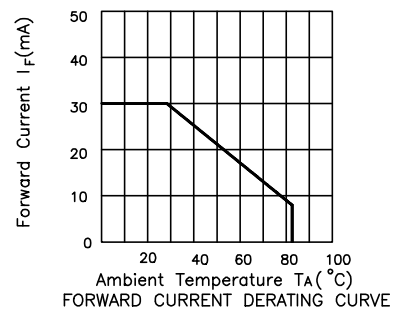
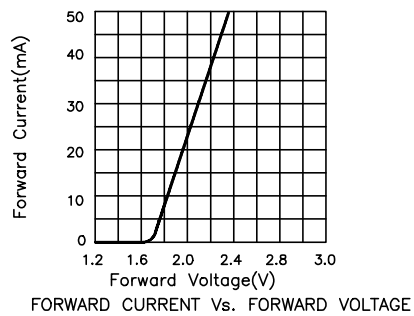
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



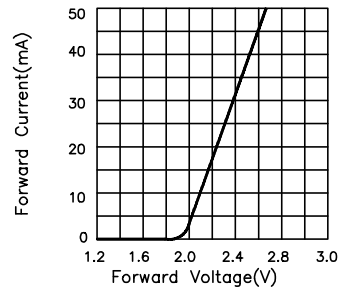
## Bright Red L-443HDT



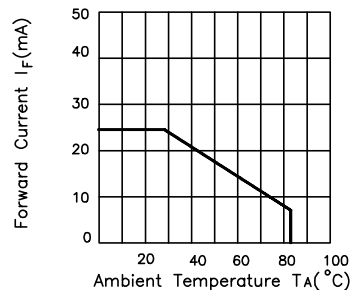
## High Efficiency Red L-443IDT Orange L-443EDT



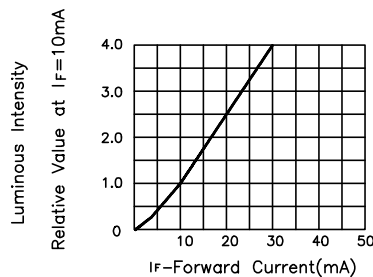
## Green L-443GDT



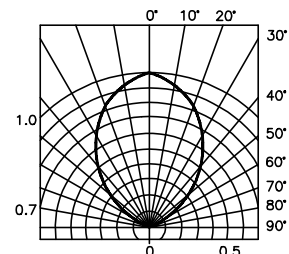
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

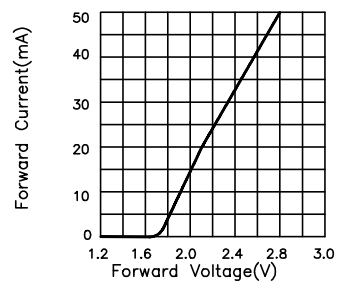


LUMINOUS INTENSITY Vs. FORWARD CURRENT

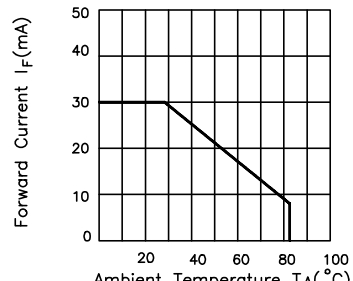


SPATIAL DISTRIBUTION

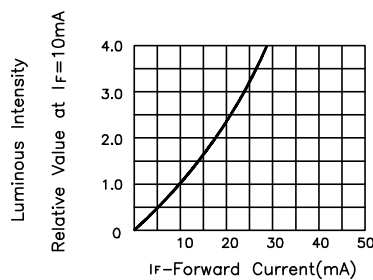
## Yellow L-443YDT



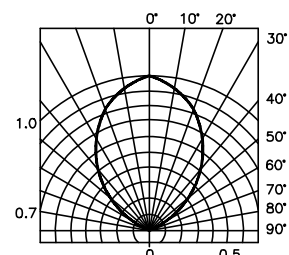
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION

Super Bright Red L-443SRDT

