

# Kingbright®

## 1.8mm ROUND LED LAMPS

L-2060R RED	L-2060E ORANGE
L-2060H BRIGHT RED	L-2060G GREEN
L-2060I HIGH EFFICIENCY RED	L-2060Y YELLOW
L-2060SR SUPER BRIGHT RED	

### Features

- 1.8mm DIAMETER SMALL SIZE LED LAMP.
- ULTRA BRIGHTNESS IS AVAILABLE.
- VERSATILE MOUNTING ON P.C. BOARD OR PANEL.
- RELIABLE AND RUGGED.
- AVAILABLE IN DIFFUSED AND WATER CLEAR LENS.

### Description

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

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

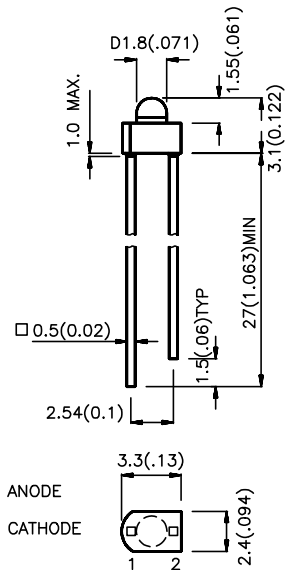
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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 emerge package.
  4. Specifications are subjected to change without notice.

### Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 10 mA		Viewing Angle <b>2<math>\theta</math>/2</b>
			Min.	Max.	
L-2060RD	RED (GaAsP)	RED DIFFUSED	0.3	1.3	70°
L-2060HD	BRIGHT RED (GaP)	RED DIFFUSED	0.5	3.2	70°
L-2060ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	8	32	70°
L-2060ED	ORANGE (GaAsP/GaP)	ORANGE DIFFUSED	8	32	70°
L-2060GD	GREEN (GaP)	GREEN DIFFUSED	5	20	70°
L-2060YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	3.2	20	70°
L-2060SRD	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	*70	-300	70°
L-2060SRC		WATER CLEAR	*100	*500	30°

- 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.

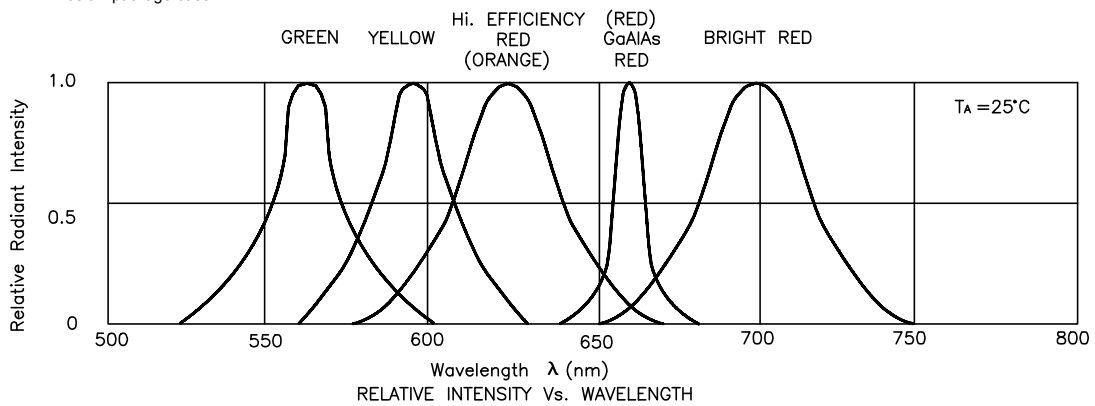
Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Red Bright Red High Efficiency Red Orange Green Yellow Super Bright Red	660 700 625 625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Red Bright Red High Efficiency Red Orange Green Yellow Super Bright Red	20 45 45 45 30 35 20		nm	IF=20mA
C	Capacitance	Red Bright Red High Efficiency Red Orange Green Yellow Super Bright Red	40 40 12 12 45 10 95		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	Red Bright Red High Efficiency Red Orange Green Yellow Super Bright Red	1.7 2.0 2.0 2.0 2.2 2.1 1.85	2.1 2.5 2.5 2.5 2.5 2.5 2.5	V	IF=20mA
I <sub>R</sub>	Reverse Current	All	10		uA	VR = 5V

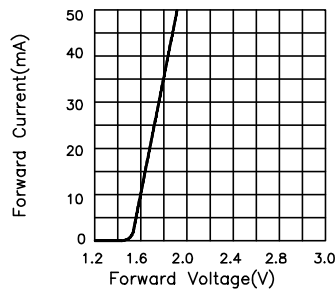
Absolute Maximum Ratings at T<sub>A</sub>=25°C

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

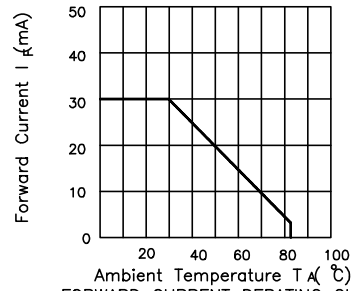
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



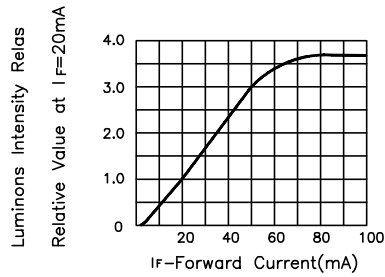
### Red L-2060RD



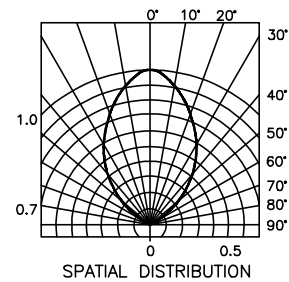
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

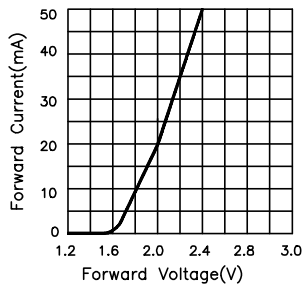


LUMINOUS INTENSITY Vs. FORWARD CURRENT

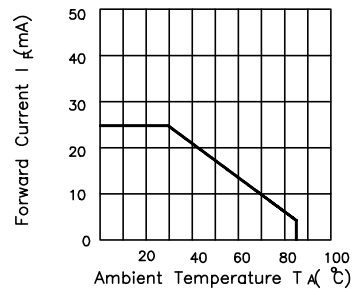


SPATIAL DISTRIBUTION

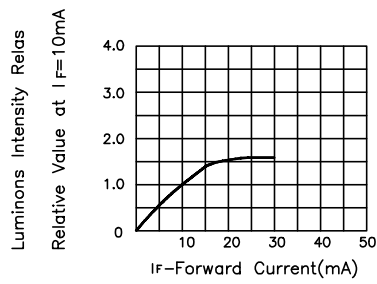
### Bright Red L-2060HD



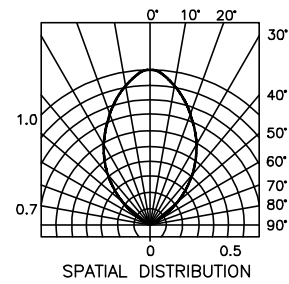
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

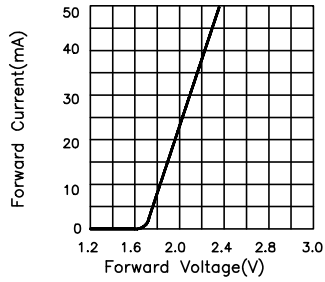


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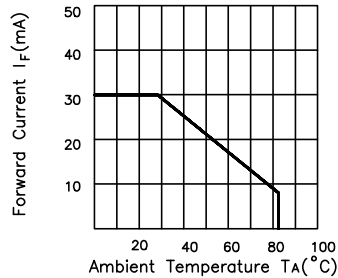


SPATIAL DISTRIBUTION

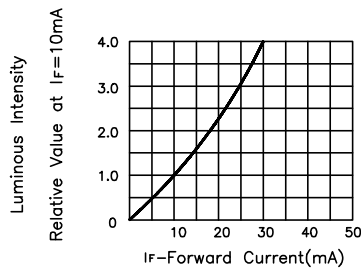
High Efficiency Red L-2060ID  
Orange L-2060ED



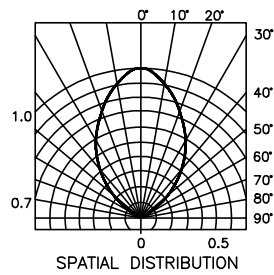
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

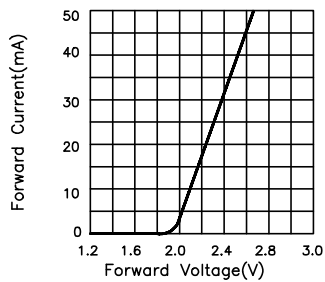


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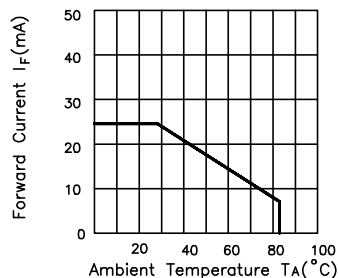


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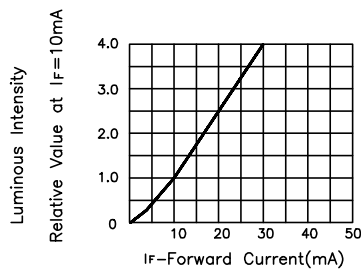
Green L-2060GD



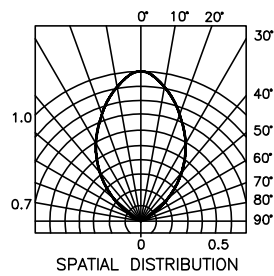
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

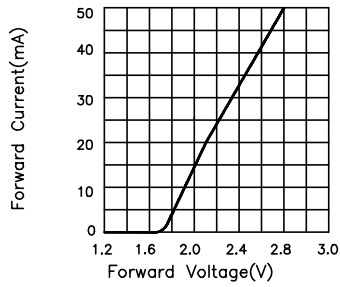


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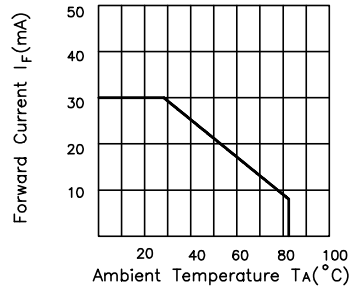


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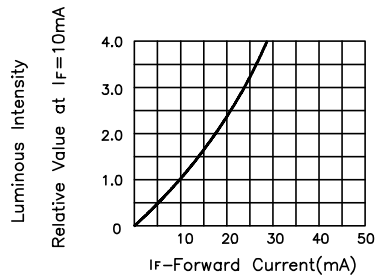
### Yellow L-2060YD



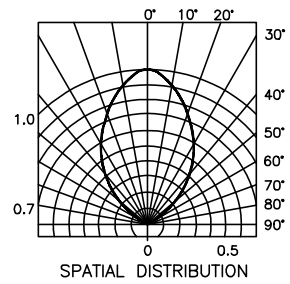
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

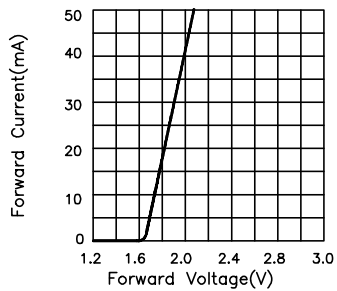


LUMINOUS INTENSITY Vs. FORWARD CURRENT

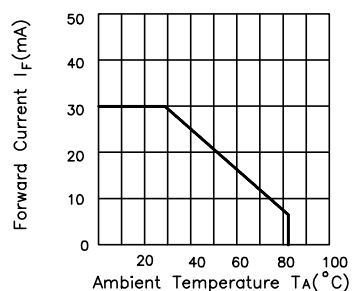


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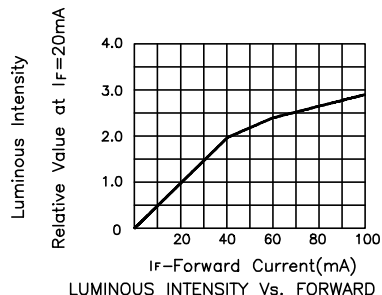
### Super Bright Red L-2060SRD,L-2060SRC



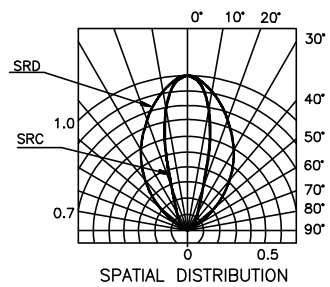
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION