

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.

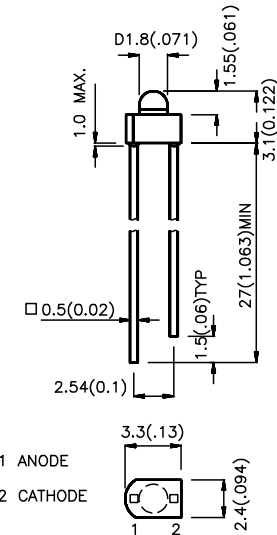
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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

Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) @ 10 mA | | Viewing Angle 2θ1/2 |
|-----------|---------------------------------|-----------------|------------------|------|---|
| | | | 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.

2-L2060-1

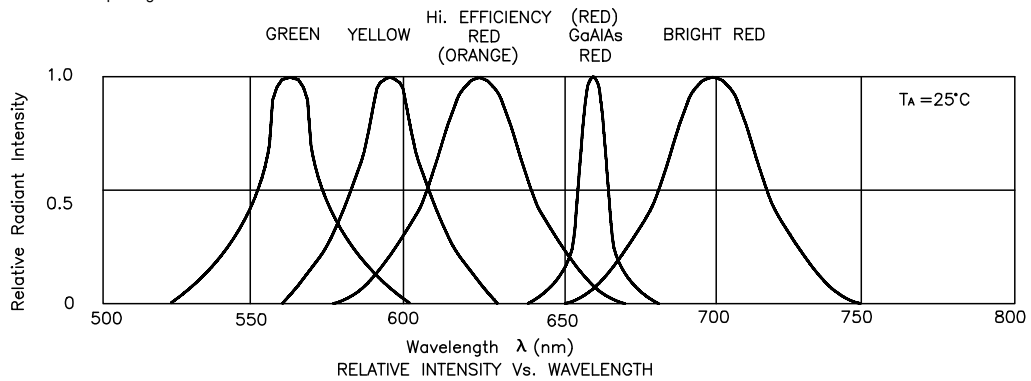
Electrical / Optical Characteristics at T_A=25°C

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|-------------------------|-------------------------|---|--|---|-------|-----------------|
| λ_{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 _F | 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 _R | Reverse Current | All | 10 | | uA | VR = 5V |

Absolute Maximum Ratings at T_A=25°C

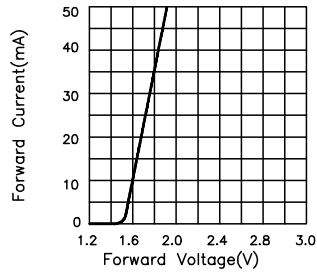
| Parameter | Red | Bright Red | High Efficiency Red | Orange | Green | Yellow | Super Bright Red | Units |
|--------------------------------|----------------------|------------|---------------------|--------|-------|--------|------------------|-------|
| Power dissipation | 120 | 120 | 105 | 105 | 105 | 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.

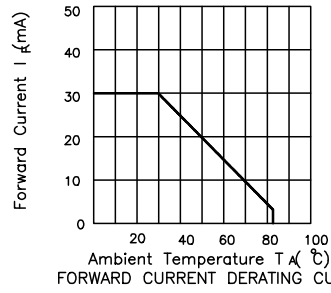


2-L2060-2

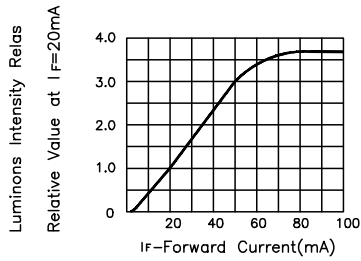
Red L-2060RD



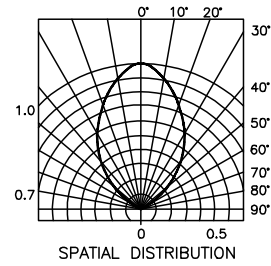
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

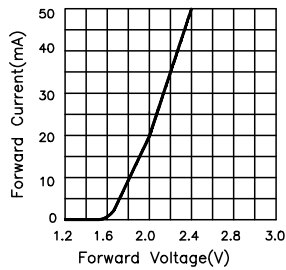


LUMINOUS INTENSITY Vs. FORWARD CURRENT

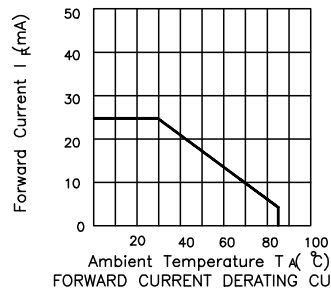


SPATIAL DISTRIBUTION

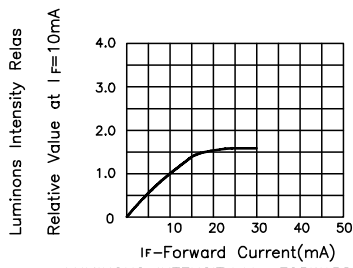
Bright Red L-2060HD



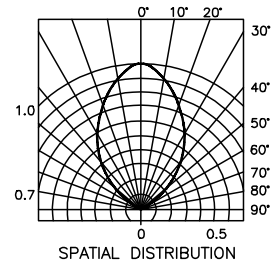
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

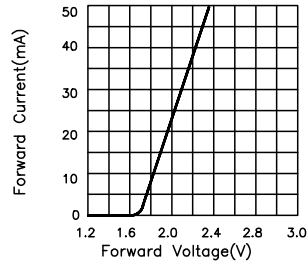


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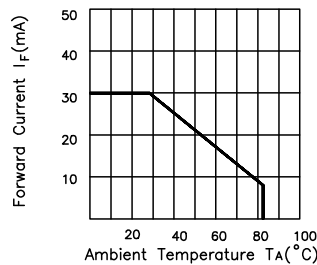


SPATIAL DISTRIBUTION

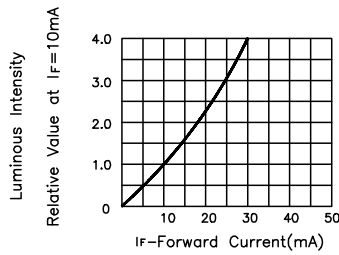
High Efficiency Red L-2060ID
Orange L-2060ED



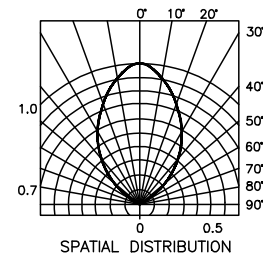
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

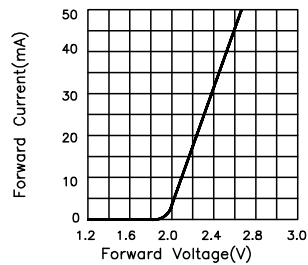


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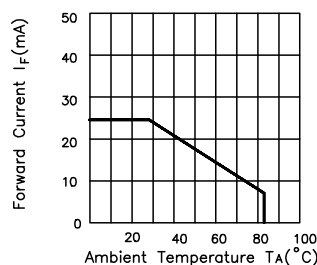


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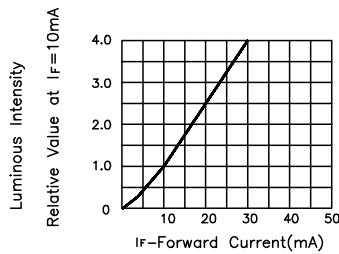
Green L-2060GD



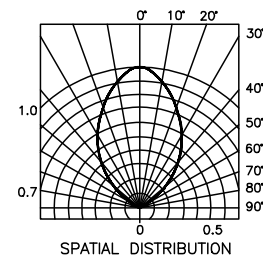
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

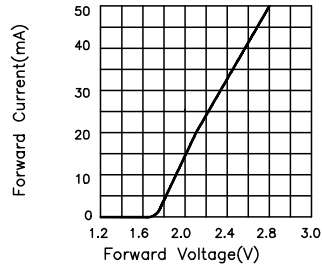


LUMINOUS INTENSITY Vs. FORWARD CURRENT

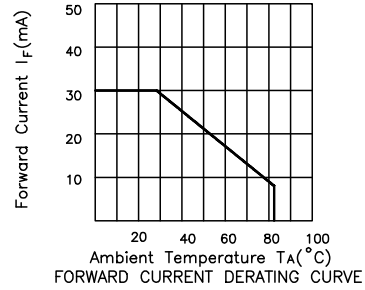


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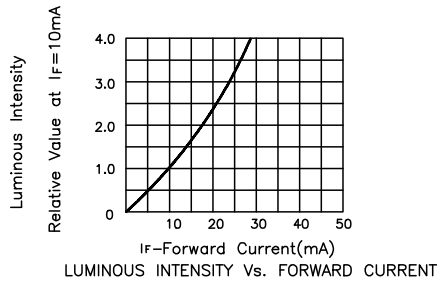
Yellow L-2060YD



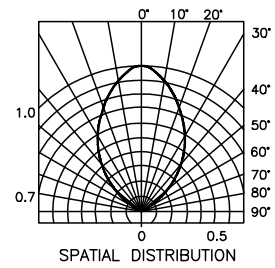
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

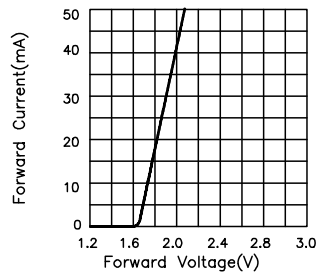


LUMINOUS INTENSITY Vs. FORWARD CURRENT

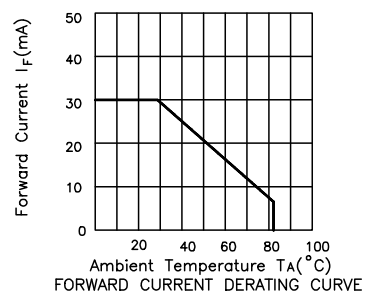


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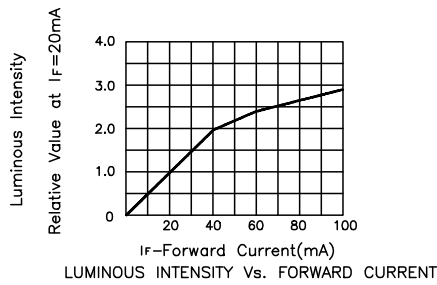
Super Bright Red L-2060SRD,L-2060SRC



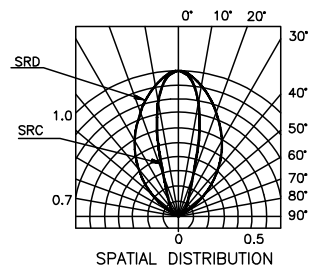
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION