

# Kingbright®

## 3.65x6.15mm SINGLE CHIP LED LIGHT BARS

L-1043I HIGH EFFICIENCY RED      L-1043G GREEN  
 L-1043SR SUPER BRIGHT RED      L-1043Y YELLOW  
 L-1043SG SUPER BRIGHT GREEN  
 L-1049EG HIGH EFFICIENCY RED / GREEN  
 L-1049SRSG SUPER BRIGHT RED / SUPER BRIGHT GREEN

### Features

- FLAT RECTANGULAR LIGHT EMITTING SURFACE.
- SINGLE & DUAL COLORS.
- THIRD (MIXED) COLOR AVAILABLE FOR 3 LEADS VERSION.
- IDEAL AS FLUSH MOUNTED PANEL INDICATORS.
- EXCELLENT ON/OFF CONTRAST.
- LONG LIFE - SOLID STATE RELIABILITY.

### Description

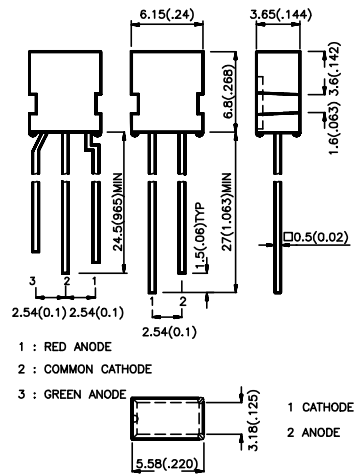
The Green and Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The High Efficiency Red 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<br><b>2<math>\theta</math>1/2</b> |
|----------------|---------------------------------|-----------------|------------------|-------|---|
|                |                                 |                 | Min.             | Max.  |   |
| L-1043ID       | HIGH EFFICIENCY RED (GaAsP/GaP) | RED DIFFUSED    | 5                | 20    | 100°  |
| L-1043GD       | GREEN (GaP)                     | GREEN DIFFUSED  | 2                | 8     | 100°  |
| L-1043YD       | YELLOW (GaAsP/GaP)              | YELLOW DIFFUSED | 2                | 8     | 100°  |
| L-1043SRD      | SUPER BRIGHT RED (GaAlAs)       | RED DIFFUSED    | *32              | *100  | 100°  |
| L-1043SGD      | SUPER BRIGHT GREEN (GaP)        | GREEN DIFFUSED  | *5               | *12.5 | 100°  |
| L-1049EGW      | HIGH EFFICIENCY RED (GaAsP/GaP) | WHITE DIFFUSED  | *8               | *20   | 100°  |
|                | GREEN (GaP)                     |                 | *2               | *8    | 100°  |
| L-1049SRSGW-CC | SUPER BRIGHT RED (GaAlAs)       | WHITE DIFFUSED  | *32              | *100  | 100°  |
|                | SUPER BRIGHT GREEN (GaP)        |                 | *20              | *50   | 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.

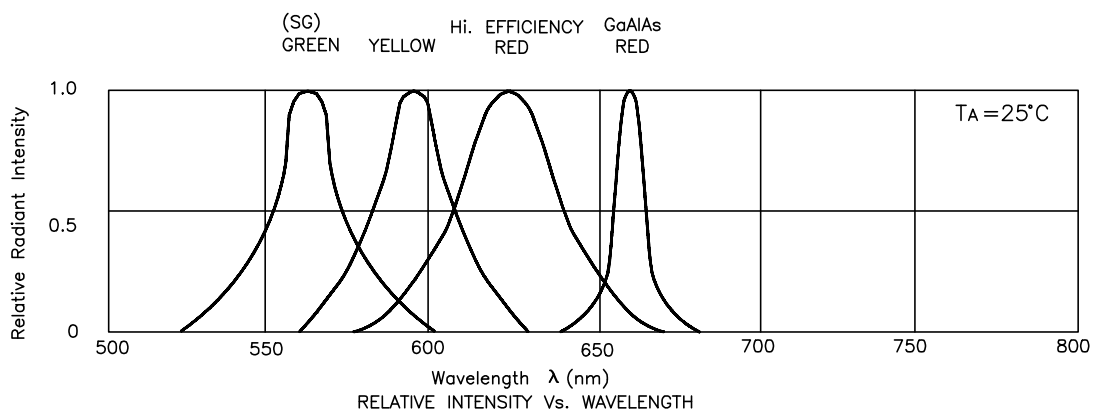
### Electrical / Optical Characteristics at T<sub>A</sub>=25°C

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

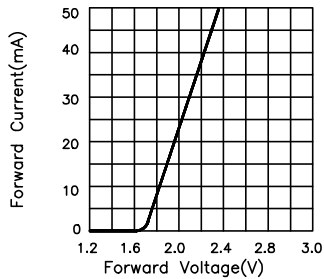
### Absolute Maximum Ratings at T<sub>A</sub>=25°C

| Parameter                     | High Efficiency Red  | Green | Yellow | Super Bright Red | Super Bright Green | Units |
|-------------------------------|----------------------|-------|--------|------------------|--------------------|-------|
| Power dissipation             | 105                  | 105   | 105    | 100              | 105                | mW    |
| DC Forward Current            | 30                   | 25    | 30     | 30               | 25                 | 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 |       |        |                  |                    |       |

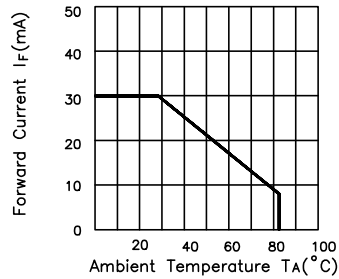
- Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



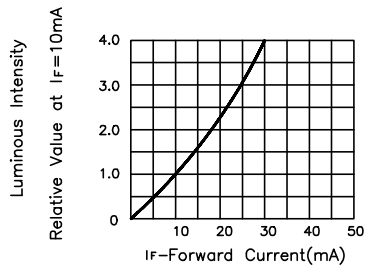
## High Efficiency Red L-1043ID



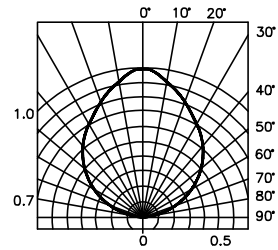
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

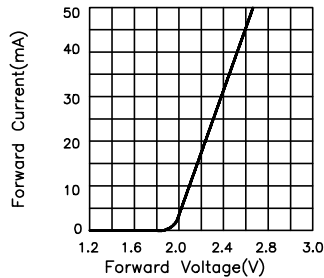


LUMINOUS INTENSITY Vs. FORWARD CURRENT

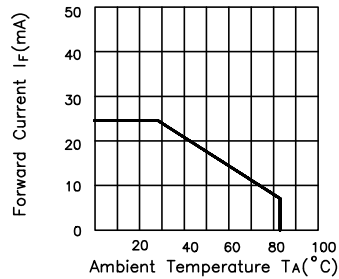


SPATIAL DISTRIBUTION

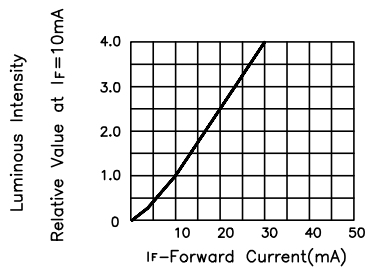
## Green L-1043GD



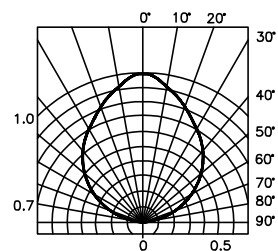
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

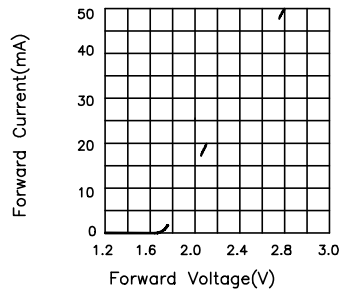


LUMINOUS INTENSITY Vs. FORWARD CURRENT

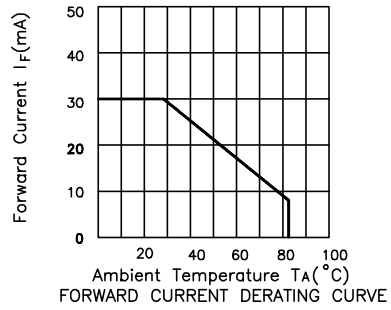


SPATIAL DISTRIBUTION

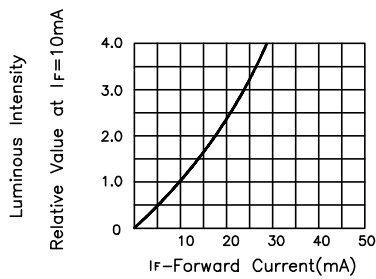
## Yellow L-1043YD



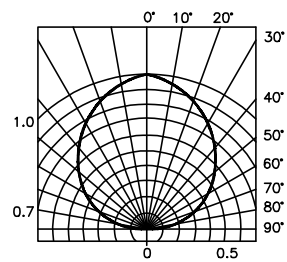
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

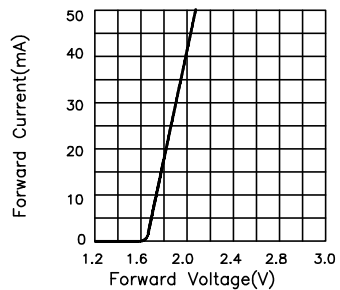


LUMINOUS INTENSITY Vs. FORWARD CURRENT

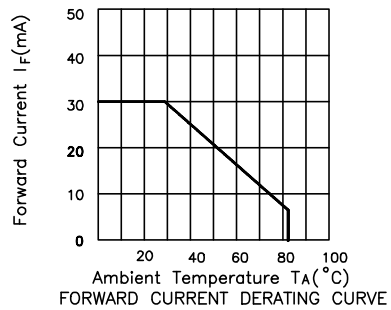


SPATIAL DISTRIBUTION

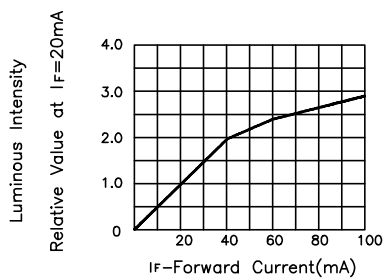
## Super Bright Red L-1043SRD



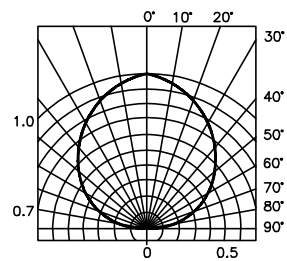
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

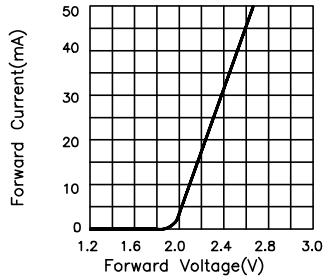


LUMINOUS INTENSITY Vs. FORWARD CURRENT

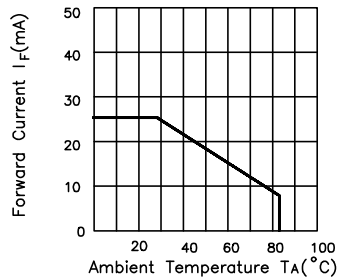


SPATIAL DISTRIBUTION

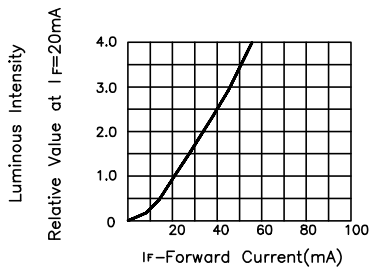
## Super Bright Green L-1043SGD



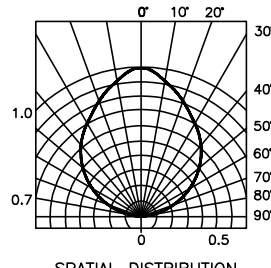
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

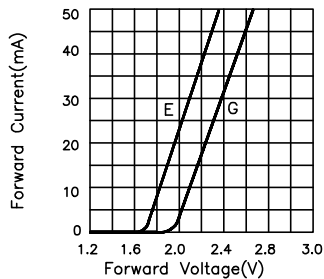


LUMINOUS INTENSITY Vs. FORWARD CURRENT

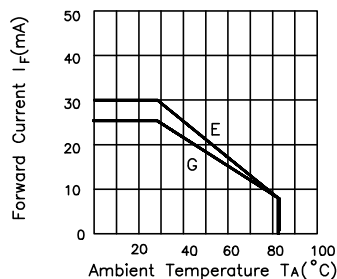


SPATIAL DISTRIBUTION

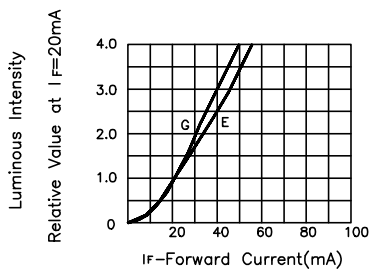
## High Efficiency Red / Green L-1049EGW



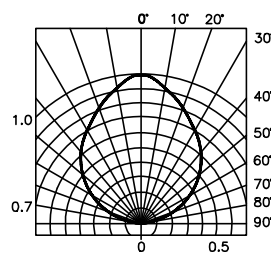
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

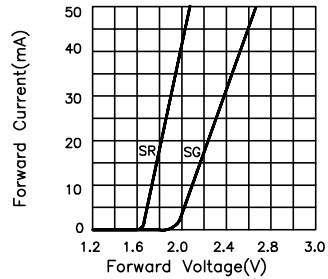


LUMINOUS INTENSITY Vs. FORWARD CURRENT

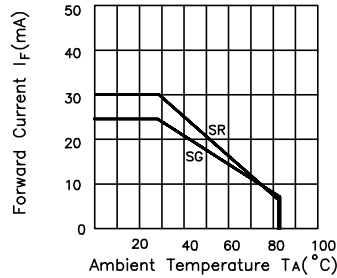


SPATIAL DISTRIBUTION

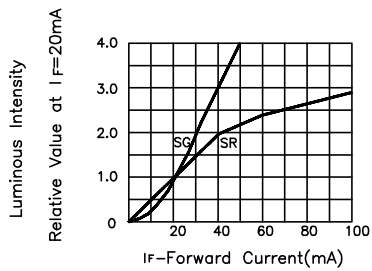
# Super Bright Red / Super Bright Green L-1049SRSGW-CC



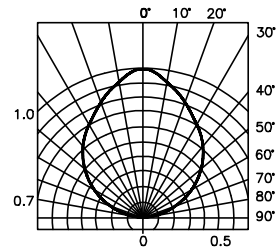
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION