

# Kingbright®

## 10mm SUPER BRIGHT BIG LAMPS

L-813SR SUPER BRIGHT RED

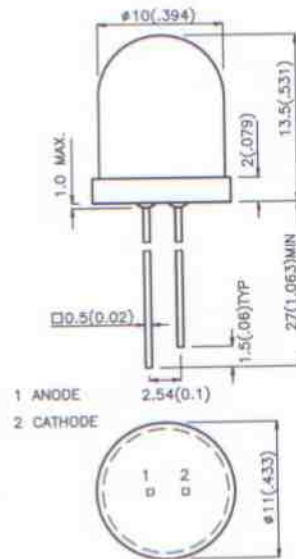
### Features

- ULTRA BRIGHTNESS.
- 10mm DIAMETER BIG LAMP.
- WIDE VIEWING ANGLE.
- I.C. COMPATIBLE.
- BOTH DIFFUSED AND WATER CLEAR LENS ARE AVAILABLE.
- RELIABLE AND RUGGED.
- LONG LIFE - SOLID STATE RELIABILITY.

### Description

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) @ 20 mA		Viewing Angle
			Min.	Max.	
L-813SRC-B	SUPER BRIGHT RED (GaAlAs)	WATER CLEAR	500	1000	40°
L-813SRC-C			1000	1600	40°
L-813SRC-D			1600	2000	40°
L-813SRC-E			2000	3000	40°
L-813SRD-B		RED DIFFUSED	120	200	60°
L-813SRD-C			200	350	60°
L-813SRD-D			350	450	60°
L-813SRD-E			450	550	60°
L-813SRD-F			550	650	60°
L-813SRD-G			650	800	60°

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

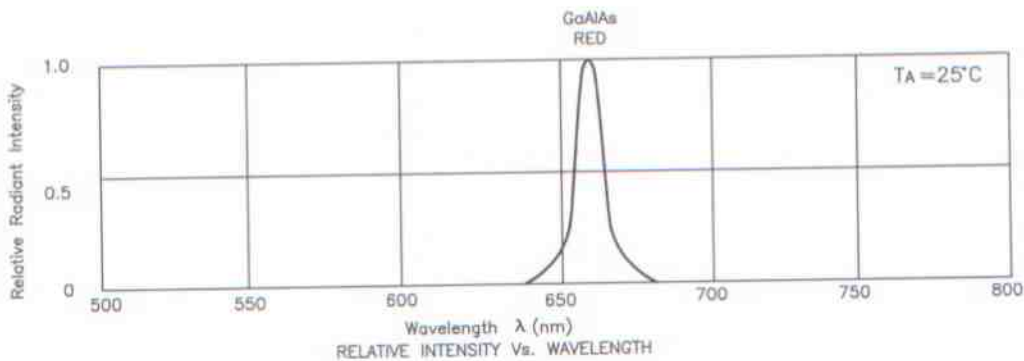
Electrical / Optical Characteristics at  $T_A=25^\circ\text{C}$

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{\text{peak}}$	Peak Wavelength	Super Bright Red	660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Super Bright Red	20		nm	IF=20mA
C	Capacitance	Super Bright Red	95		pF	VF=0V, f=1MHz
$V_F$	Forward Voltage	Super Bright Red	1.85	2.5	V	IF=20mA
$I_R$	Reverse Current	Super Bright Red	10		$\mu\text{A}$	VR = 5V

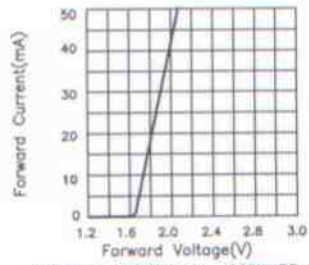
Absolute Maximum Ratings at  $T_A=25^\circ\text{C}$

Parameter	Super Bright Red	Units
Power dissipation	100	mW
DC Forward Current	30	mA
Peak Forward Current [1]	150	mA
Reverse Voltage	5	V
Operation/Storage Temperature	-40°C To +85 °C	
Lead Solder Temperature [2]	260 °C For 5 Seconds	

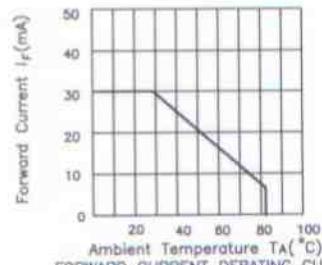
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



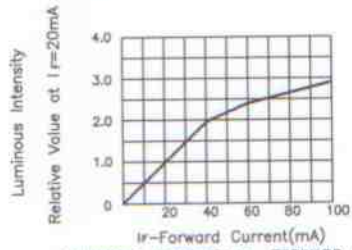
Super Bright Red L-813SRC / L-813SRD



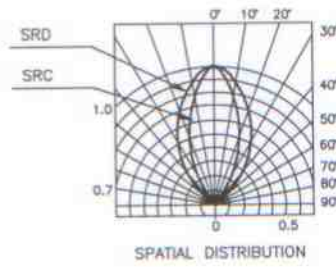
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION