

# Kingbright®

## 2X5mm RECTANGULAR SOLID STATE LAMPS

L-113H BRIGHT RED  
 L-113I HIGH EFFICIENCY RED  
 L-113E ORANGE  
 L-113SR SUPER BRIGHT RED  
 L-113SG SUPER BRIGHT GREEN

L-113G GREEN  
 L-113Y YELLOW

### Features

- LOW POWER CONSUMPTION.
- RELIABLE AND RUGGED.
- EXCELLENT UNIFORMITY OF LIGHT OUTPUT.
- SUPER BRIGHT RED VERSION IS AVAILABLE.
- SUPER BRIGHT RED AND SUPER GREEN BI-COLOR VERSION IS AVAILABLE.
- SUITABLE FOR LEVEL INDICATOR.
- LONG LIFE - SOLID STATE RELIABILITY.

### Description

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

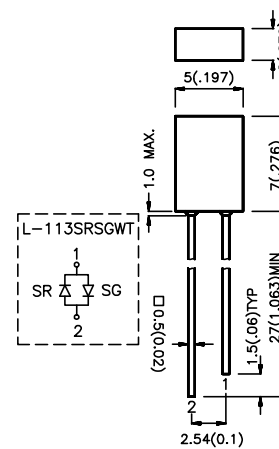
The Green and Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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 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>1/2</b>
			Min.	Max.	
L-113HDT	BRIGHT RED (GaP)	RED DIFFUSED	0.5	2	110°
L-113IDT	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	3.2	12.5	110°
L-113EDT	ORANGE (GaAsP/GaP)	ORANGE DIFFUSED	3.2	12.5	110°
L-113GDT	GREEN (GaP)	GREEN DIFFUSED	2	8	110°
L-113YDT	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	2	8	110°
L-113SRDT	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	*40	*80	110°
L-113SRSGWT	SUPER BRIGHT RED (GaAlAs)	WHITE DIFFUSED	*30	*70	100°
	SUPER BRIGHT GREEN (GaP)		*8	*20	

- 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.

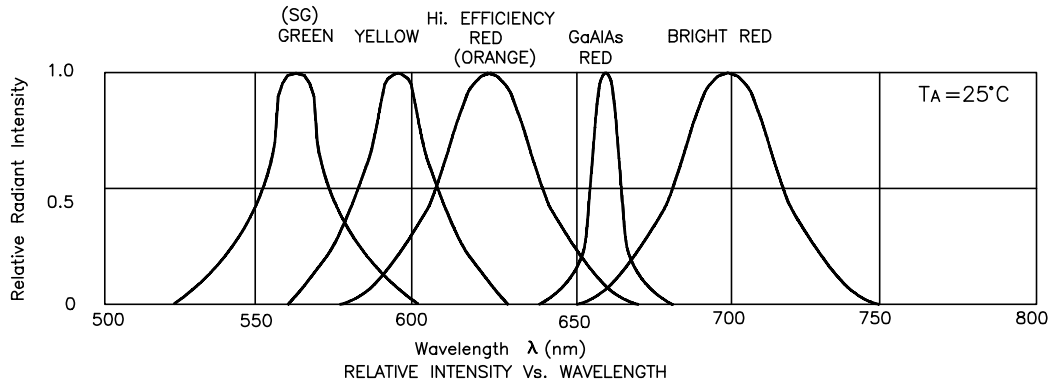
Electrical / Optical Characteristics at T<sub>A</sub>=25°C

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

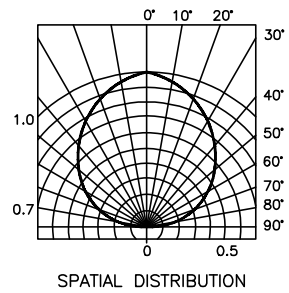
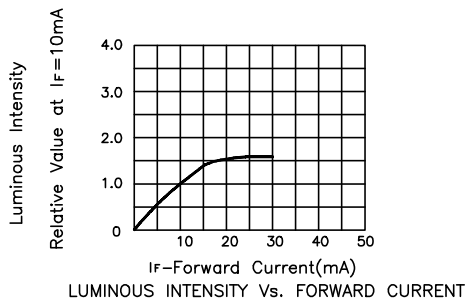
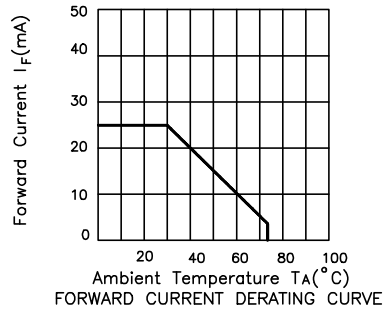
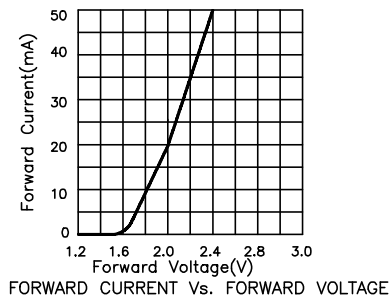
Absolute Maximum Ratings at T<sub>A</sub>=25°C

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

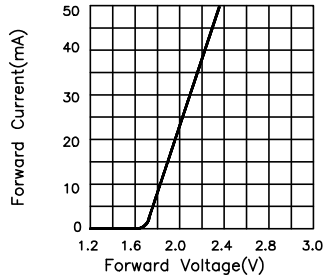
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



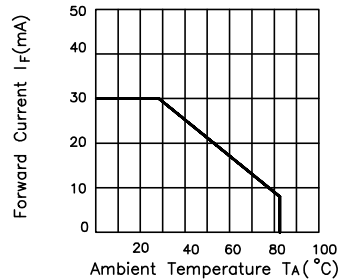
### Bright Red L-113HDT



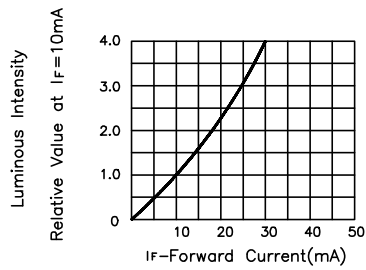
High Efficiency Red L-113IDT  
Orange L-113EDT



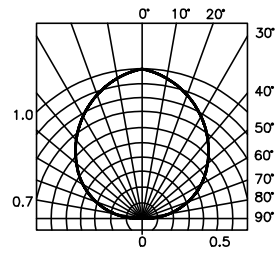
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

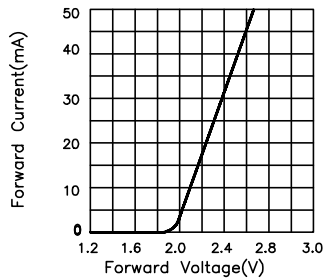


LUMINOUS INTENSITY Vs. FORWARD CURRENT

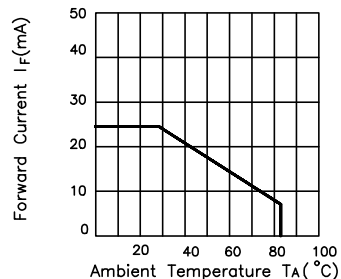


SPATIAL DISTRIBUTION

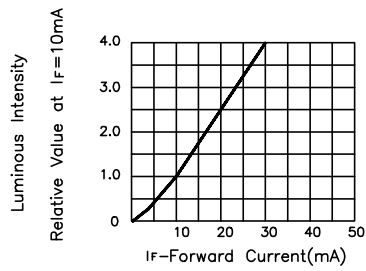
Green L-113GDT



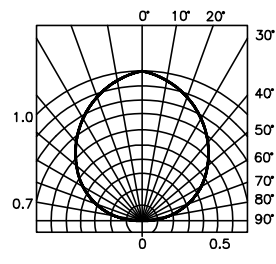
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

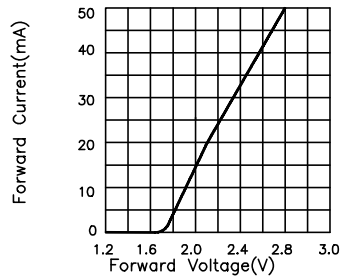


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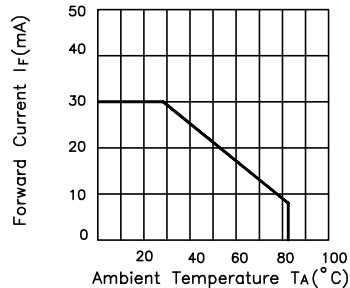


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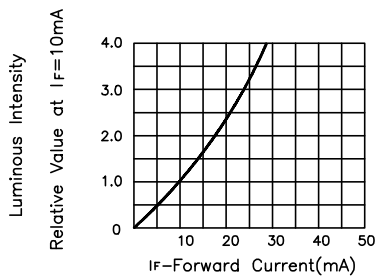
## Yellow L-113YDT



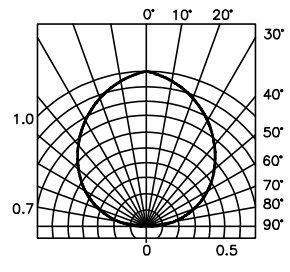
FORWARD CURRENT Vs. FORWARD VOLTAGE



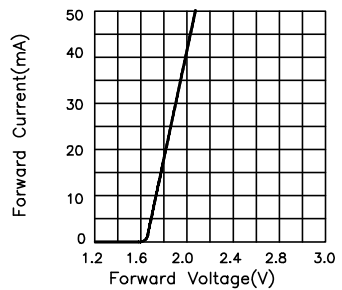
FORWARD CURRENT DERATING CURVE



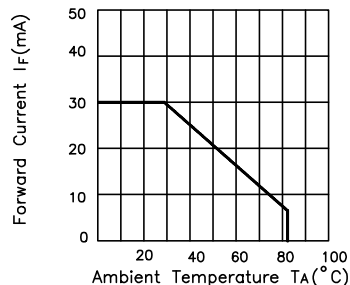
LUMINOUS INTENSITY Vs. FORWARD CURRENT



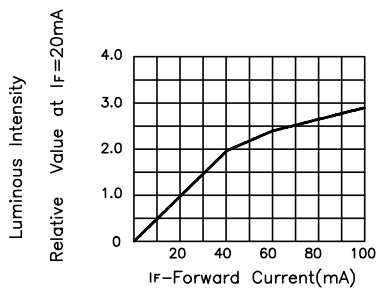
## Super Bright Red L-113SRDT



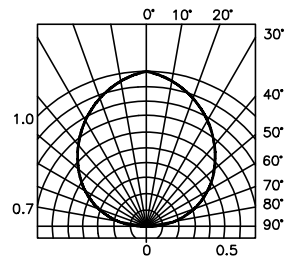
FORWARD CURRENT Vs. FORWARD VOLTAGE



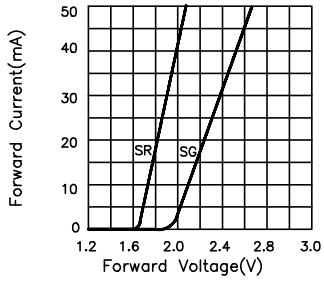
FORWARD CURRENT DERATING CURVE



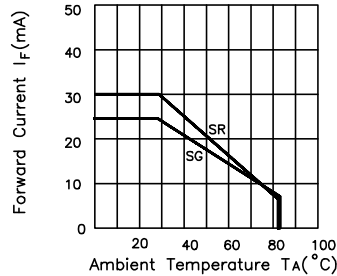
LUMINOUS INTENSITY Vs. FORWARD CURRENT



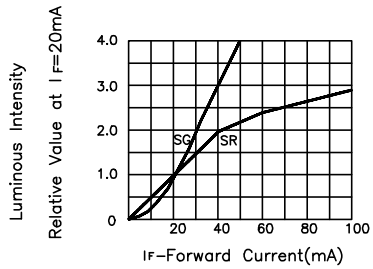
# Super Bright Red / Super Bright Green L-113SRSGWT



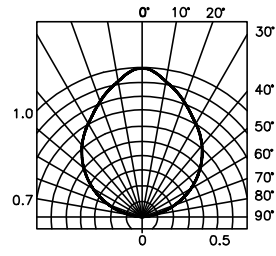
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION