

### Features

- LOW POWER CONSUMPTION.
- RELIABLE AND RUGGED.
- EXCELLENT UNIFORMITY OF LIGHT OUTPUT.
- SUITABLE FOR LEVEL INDICATOR.
- I.C. COMPATIBLE.
- LONG LIFE - SOLID STATE RELIABILITY.

L513HDT BRIGHT RED

L513GDT GREEN

L513IDT HIGH EFFICIENCY RED

L513EDT ORANGE

L513SGDT SUPER BRIGHT GREEN

L513YDT YELLOW

### Description

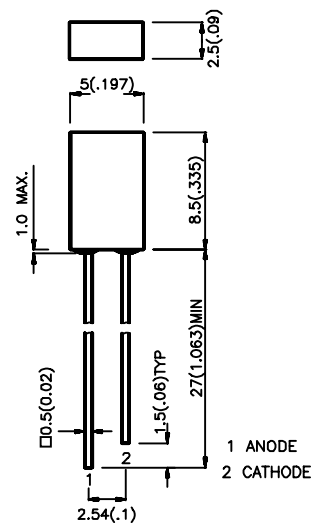
The Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

The High Efficiency Red and Orange source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow 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
			Min.	Typ.	$\theta_{1/2}$
L513HDT	BRIGHT RED (GaP)	RED DIFFUSED	0.5	1	110°
L513IDT	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	3	5	110°
L513EDT	ORANGE (GaAsP/GaP)	ORANGE DIFFUSED	3	5	110°
L513GDT	GREEN (GaP)	GREEN DIFFUSED	2	3	110°
L513YDT	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	2	3	110°
L513SGDT	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	*8	*10	110°

#### 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

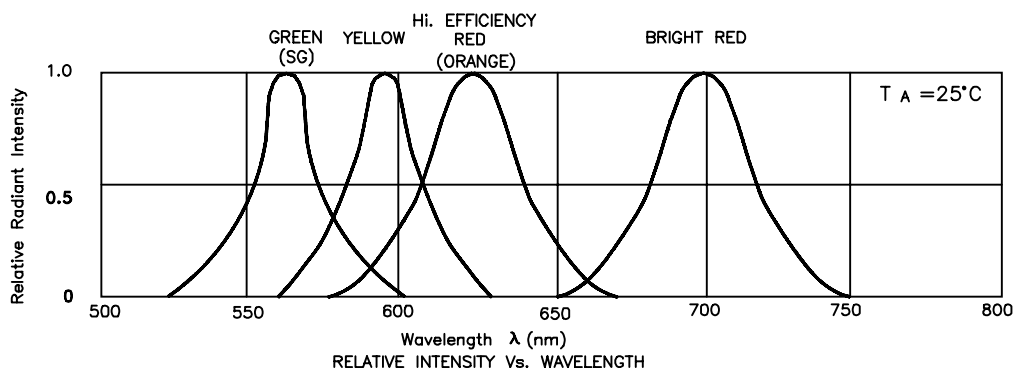
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Bright Red High Efficiency Red Orange Green Yellow Super Bright Green	700 625 625 565 590 565		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Orange Green Yellow Super Bright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

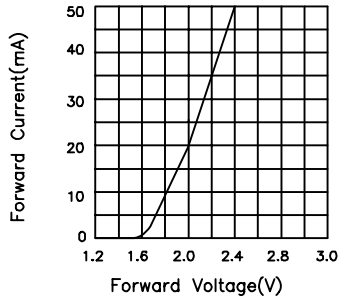
Parameter	Bright Red	High Efficiency Red	Orange	Green	Yellow	Super Bright Green	Units
Power dissipation	120	105	105	105	105	105	mW
DC Forward Current	25	30	30	25	30	25	mA
Peak Forward Current [1]	150	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C			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

### Notes:

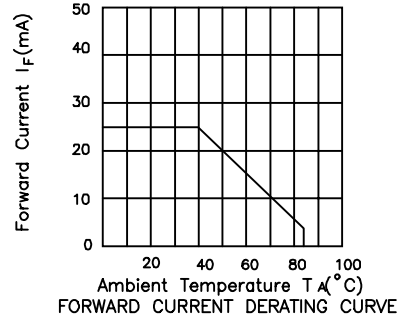
- 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



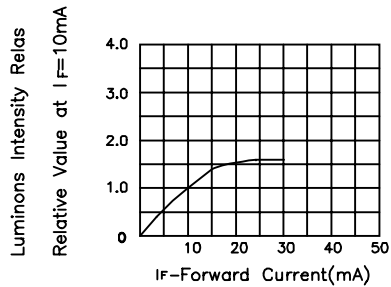
## Bright Red L513HDT



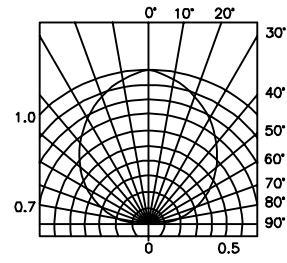
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

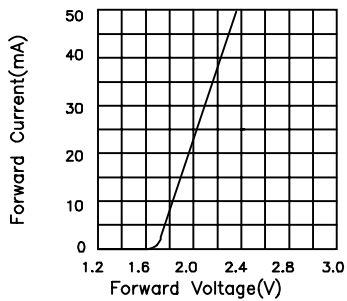


LUMINOUS INTENSITY Vs. FORWARD CURRENT

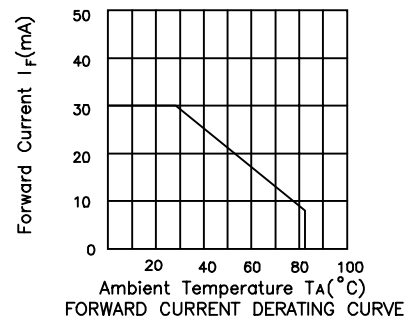


SPATIAL DISTRIBUTION

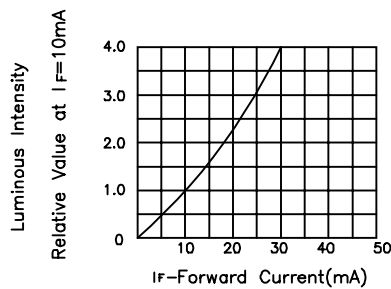
## High Efficiency Red L513IDT Orange L513EDT



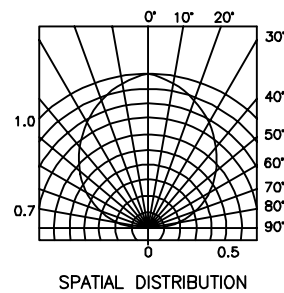
FORWARD CURRENT Vs. FORWARD VOLTAGE



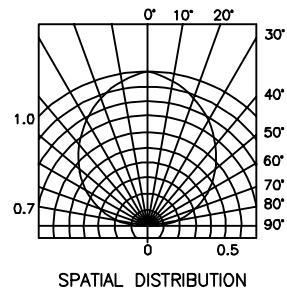
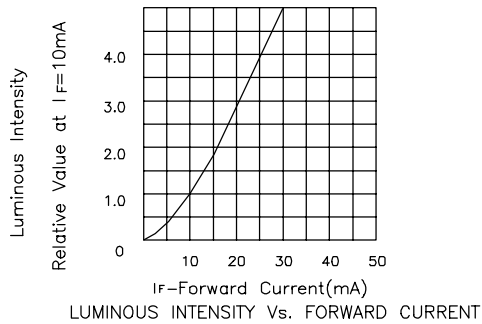
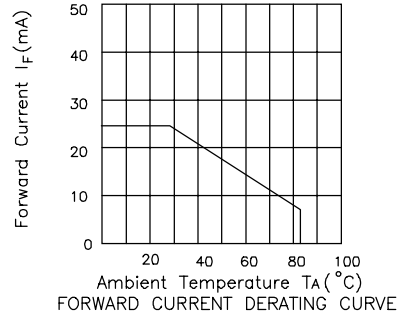
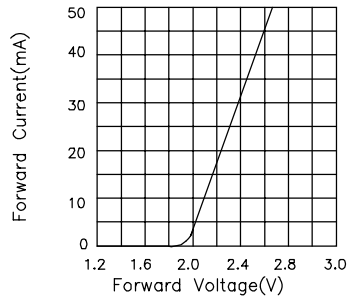
FORWARD CURRENT DERATING CURVE



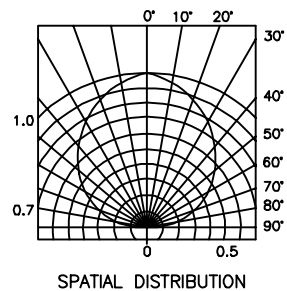
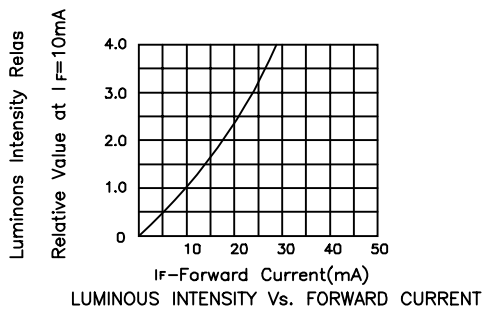
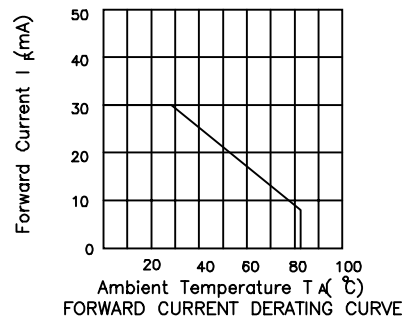
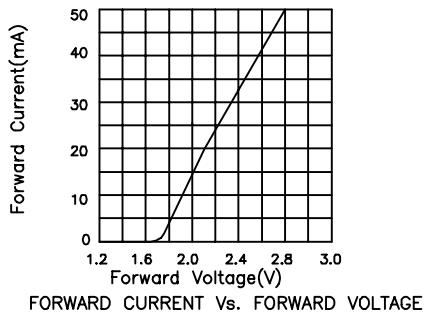
SPATIAL DISTRIBUTION



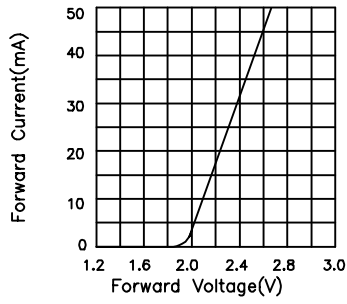
## Green L513GDT



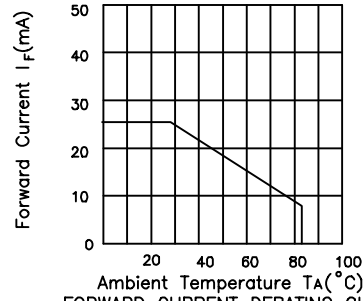
## Yellow L513YDT



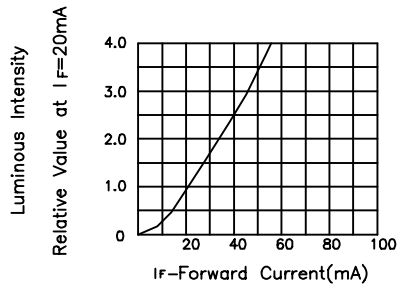
## Super Bright Green L513SGDT



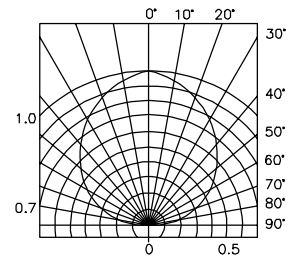
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION