

L819 SERIES

### Features

- UNIFORM LIGHT OUTPUT.
- LOW POWER CONSUMPTION.
- 3 LEADS WITH ONE COMMON CATHODE LEAD.
- THIRD COLOR (MIXED COLOR) AVAILABLE.
- SUPER BRIGHT VERSION AVAILABLE.
- I.C. COMPATIBLE.
- LONG LIFE - SOLID STATE RELIABILITY.

### Description

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

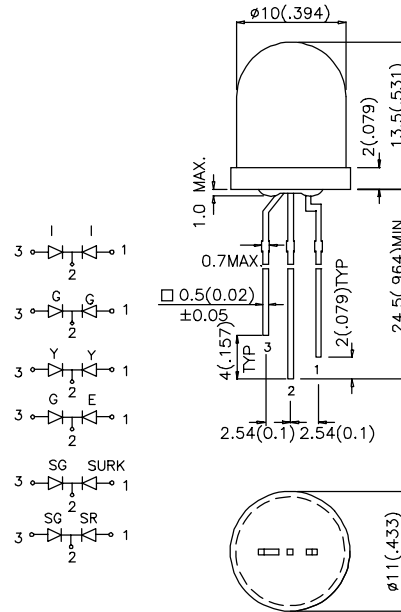
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

The Hyper Red (SURK) source color devices are made with DH InGaAlP on GaAs substrate 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.	Typ.	
L819IID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	20	70	50°
	HIGH EFFICIENCY RED (GaAsP/GaP)		20	70	
L819GGD	GREEN (GaP)	GREEN DIFFUSED	12	40	50°
	GREEN (GaP)		12	40	
L819YYD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	12	30	50°
	YELLOW (GaAsP/GaP)		12	30	
L819EGW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	30	80	50°
	GREEN (GaP)		20	50	
L819SRSGW/CC	SUPER BRIGHT RED (GaAlAs)	WHITE DIFFUSED	100	200	50°
	SUPER BRIGHT GREEN (GaP)		30	50	
L819SURKSGW	HYPER RED (InGaAlP)	WHITE DIFFUSED	300	600	50°
	SUPER BRIGHT GREEN (GaP)		30	50	

#### 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<sub>A</sub>=25°C

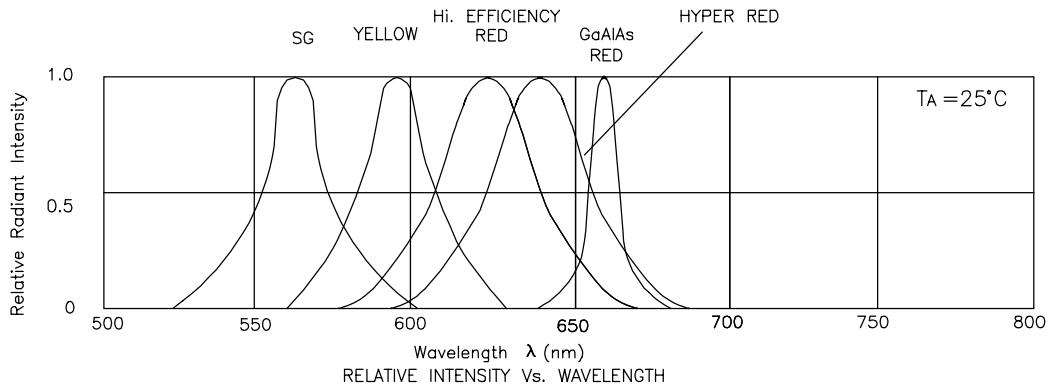
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	High Efficiency Red Green Super Bright Green Yellow Super Bright Red Hyper Red	625 565 565 590 660 640		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	High Efficiency Red Green Super Bright Green Yellow Super Bright Red Hyper Red	45 30 30 35 20 25		nm	IF=20mA
C	Capacitance	High Efficiency Red Green Super Bright Green Yellow Super Bright Red Hyper Red	12 45 45 10 95 35		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	High Efficiency Red Green Super Bright Green Yellow Super Bright Red Hyper Red	2.0 2.2 2.2 2.1 1.85 2.0	2.5 2.5 2.5 2.5 2.5 2.2	V	IF=20mA
I <sub>R</sub>	Reverse Current	All		10	uA	VR = 5V

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

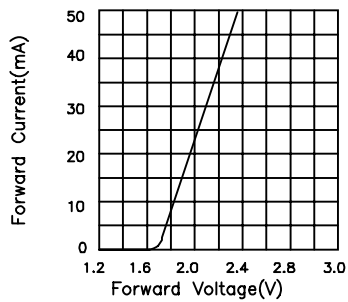
Parameter	High Efficiency Red	Green	Yellow	Super Bright Green	Super Bright Red	Hyper Red	Units
Power dissipation	105	105	105	105	100	170	mW
DC Forward Current	30	25	30	25	30	50	mA
Peak Forward Current [1]	150	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C						
Lead Soldering Temperature [2]	260°C For 5 Seconds						

Notes:

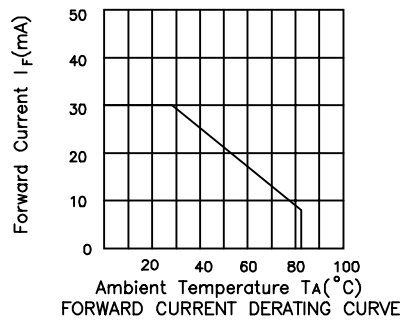
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



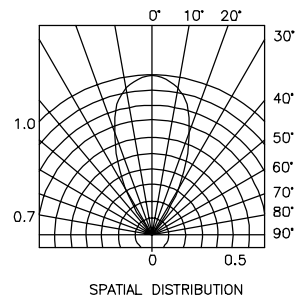
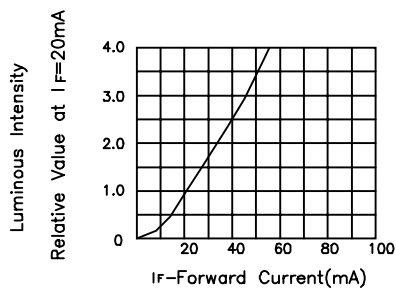
## High Efficiency Red / High Efficiency Red L819IID



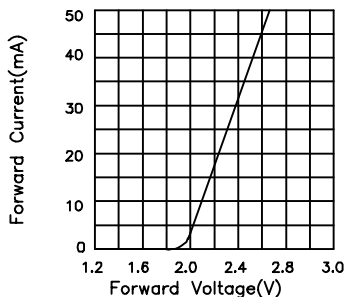
FORWARD CURRENT Vs. FORWARD VOLTAGE



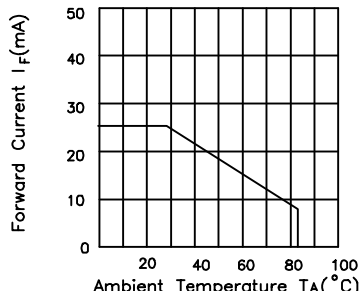
FORWARD CURRENT DERATING CURVE



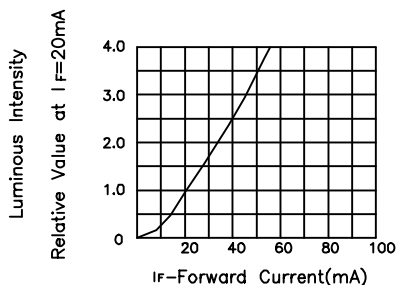
## Green / Green L819GGD



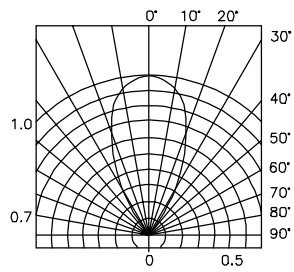
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

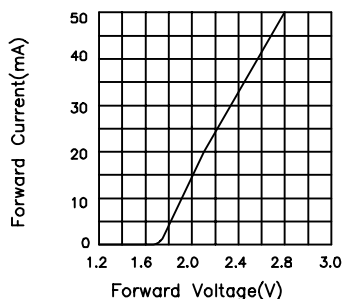


LUMINOUS INTENSITY Vs. FORWARD CURRENT

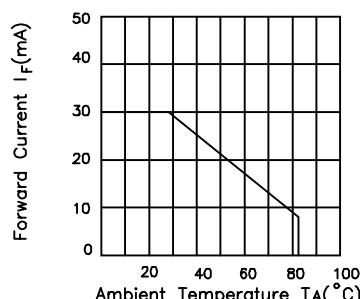


SPATIAL DISTRIBUTION

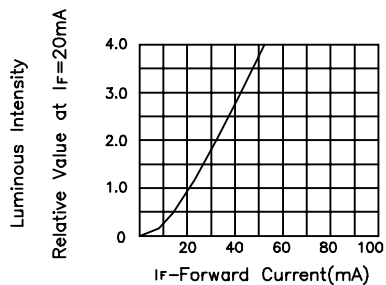
## Yellow / Yellow L819YYD



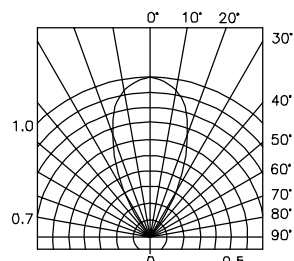
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

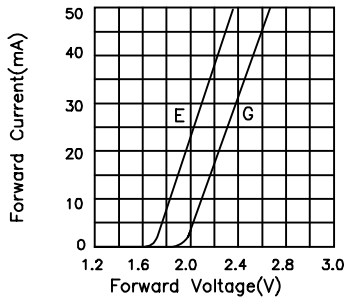


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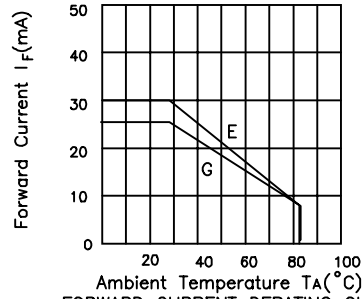


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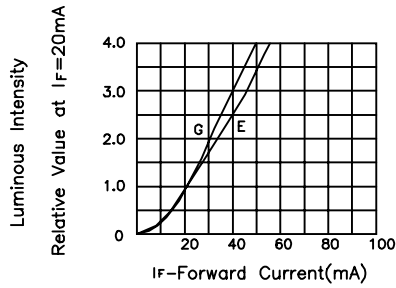
## High Efficiency Red / Green L819EGW



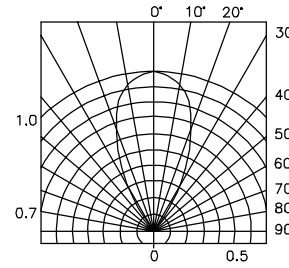
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

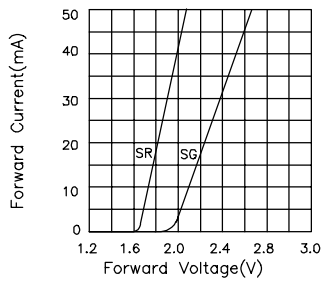


LUMINOUS INTENSITY Vs. FORWARD CURRENT

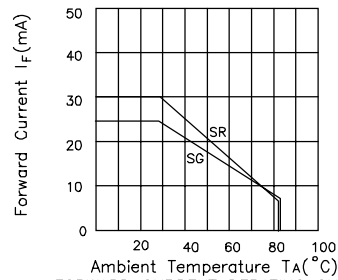


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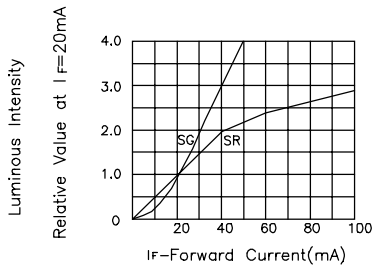
## Super Bright Red / Super Bright Green L819SRSGW/CC



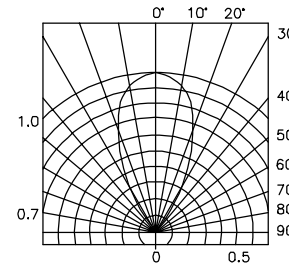
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

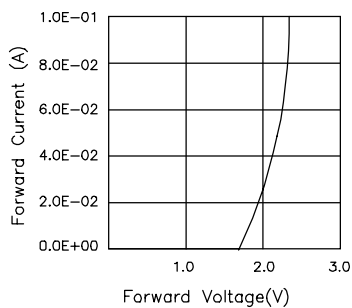


LUMINOUS INTENSITY Vs. FORWARD CURRENT

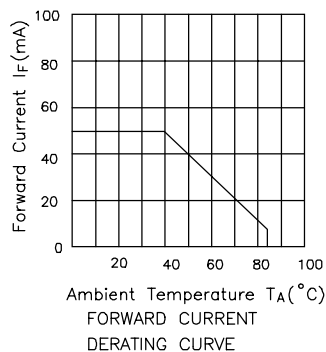


SPATIAL DISTRIBUTION

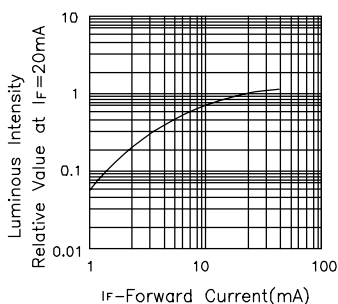
## L819SURKSGW Hyper Red



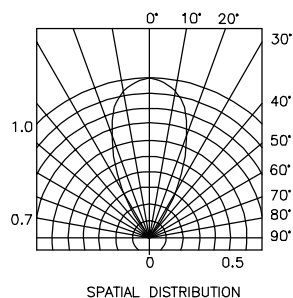
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

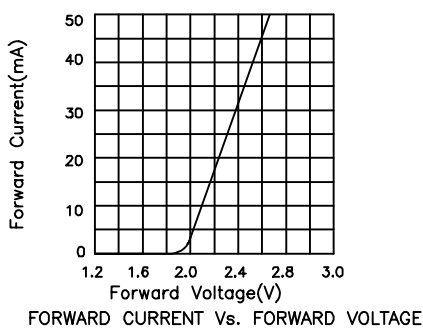


LUMINOUS INTENSITY Vs. FORWARD CURRENT

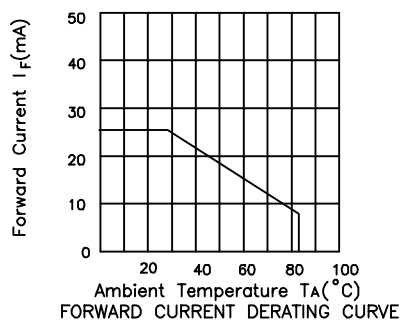


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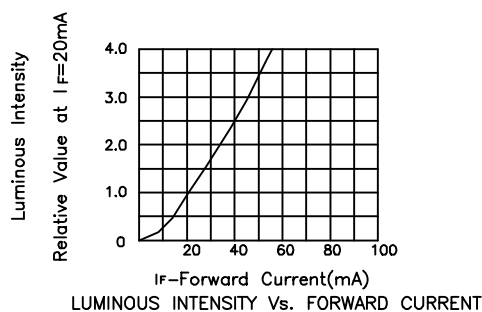
## Super Bright Green



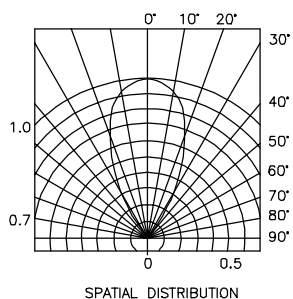
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION