

L-59 SERIES

### Features

- UNIFORM LIGHT OUTPUT.
- LOW POWER CONSUMPTION.
- MILKY WHITE DIFFUSION LENS.
- 3 LEADS WITH ONE COMMON LEAD.
- EXCEPT L-59EGW-CA IS COMMON ANODE TYPE, ALL OTHER ITEMS ARE COMMON CATHODE TYPE.
- THIRD COLOR (MIXED COLOR) AVAILABLE.
- SUPER BRIGHT VERSION AVAILABLE.
- I.C. COMPATIBLE.
- LONG LIFE - SOLID STATE RELIABILITY.

### Description

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

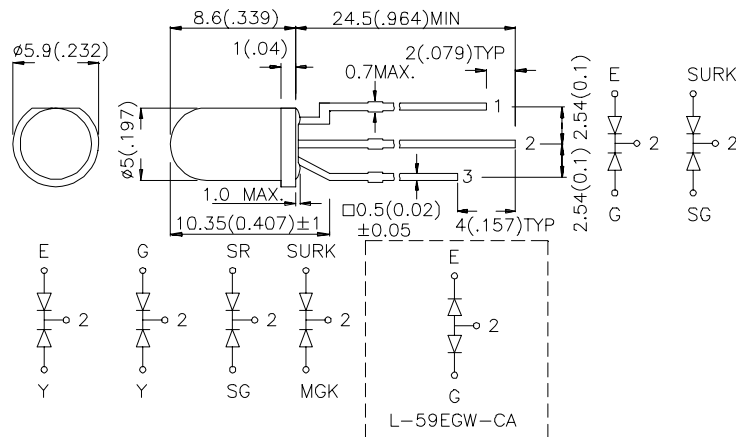
The Green and Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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

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

The Hyper Red (SURK) and Mega Green (MGK) 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 subject to change without notice.

## Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle
			Min.	Typ.	θ1/2
L-59EGW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	20	60	60°
	GREEN (GaP)		20	50	
L-59EGW-CA	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	3	5	60°
	GREEN (GaP)		2	5	
L-59EYW	HIGH EFFICIENCY RED (GaAsP/GaP)	WHITE DIFFUSED	20	60	60°
	YELLOW (GaAsP/GaP)		20	40	
L-59GYW	GREEN (GaP)	WHITE DIFFUSED	20	50	60°
	YELLOW (GaAsP/GaP)		20	40	
L-59SRSGW-CC	SUPER BRIGHT RED (GaAlAs)	WHITE DIFFUSED	100	200	60°
	SUPER BRIGHT GREEN (GaP)		40	60	
L-59SURKMGKW	HYPER RED (InGaAlP)	WHITE DIFFUSED	380	800	60°
	MEGA GREEN (InGaAlP)		50	170	
L-59EGC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	70	150	24°
	GREEN (GaP)		70	150	
L-59EYC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	100	150	24°
	YELLOW (GaAsP/GaP)		20	60	
L-59GYC	GREEN (GaP)	WATER CLEAR	70	150	24°
	YELLOW (GaAsP/GaP)		20	60	
L-59SRSGC-CC	SUPER BRIGHT RED (GaAlAs)	WATER CLEAR	300	600	24°
	SUPER BRIGHT GREEN (GaP)		70	200	
L-59SURKSGC	HYPER RED (InGaAlP)	WATER CLEAR	900	1600	24°
	SUPER BRIGHT GREEN (GaP)		70	200	

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

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

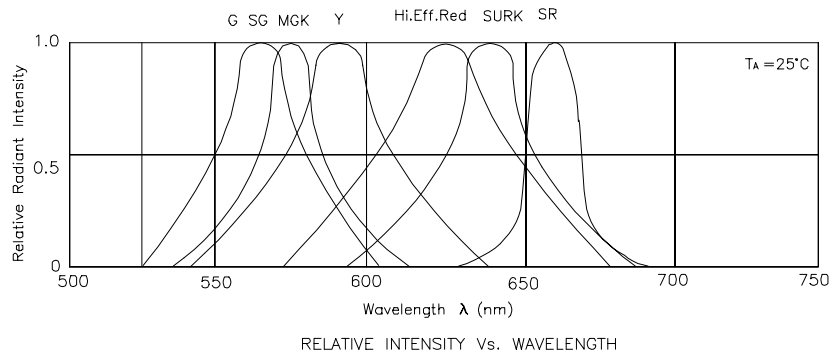
Parameter	High Efficiency Red	Green	Yellow	Super Bright Red	Super Bright Green	Hyper Red	Mega Green	Units
Power dissipation	105	105	105	100	105	170	105	mW
DC Forward Current	30	25	30	30	25	30	30	mA
Peak Forward Current [1]	160	140	140	155	140	185	205	mA
Reverse Voltage	5	5	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C							
Lead Solder Temperature [2]	260°C For 5 Seconds							

Notes:

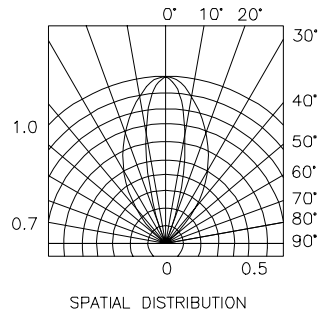
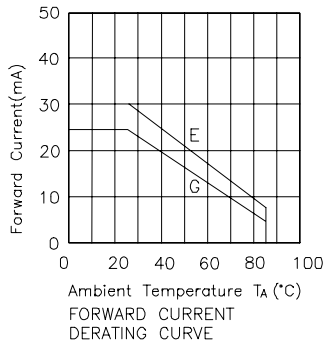
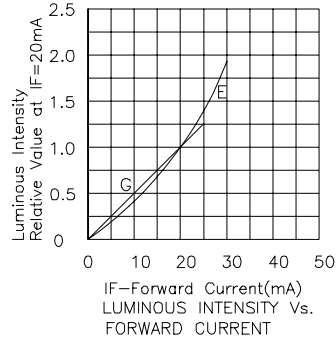
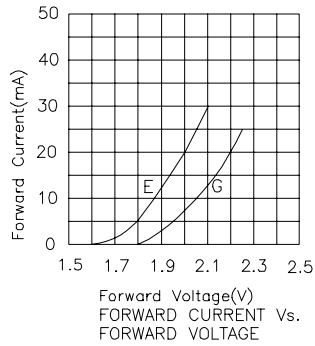
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.

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

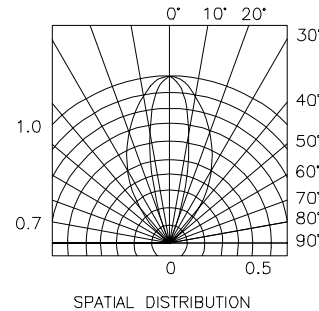
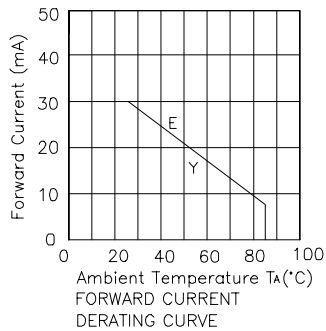
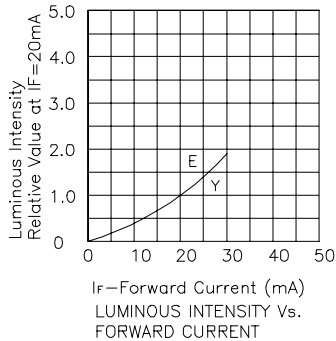
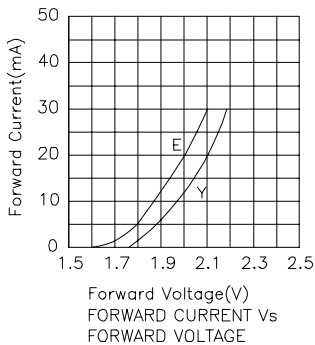
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	High Efficiency Red Green Yellow Super Bright Red Super Bright Green Hyper Red Mega Green	627 565 590 660 565 640 574		nm	IF=20mA
$\lambda_D$	Dominate Wavelength	High Efficiency Red Green Yellow Super Bright Red Super Bright Green Hyper Red Mega Green	625 568 588 640 568 630 570		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	High Efficiency Red Green Yellow Super Bright Red Super Bright Green Hyper Red Mega Green	45 30 35 20 30 28 20		nm	IF=20mA
C	Capacitance	High Efficiency Red Green Yellow Super Bright Red Super Bright Green Hyper Red Mega Green	15 15 20 45 15 35 15		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	High Efficiency Red Green Yellow Super Bright Red Super Bright Green Hyper Red Mega Green	2.0 2.2 2.1 1.85 2.2 1.95 2.1	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



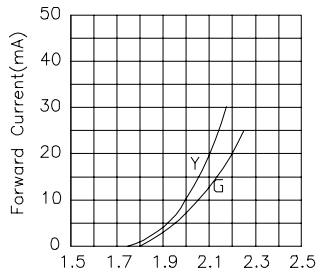
## High Efficiency Red / Green L-59EGW, L-59EGW-CA, L-59EGC



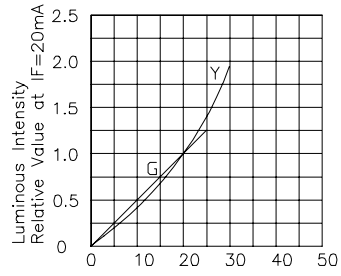
## High Efficiency Red / Yellow L-59EYW, L-59EYC



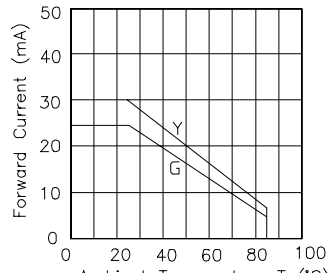
## Green / Yellow L-59GYW, L-59GYC



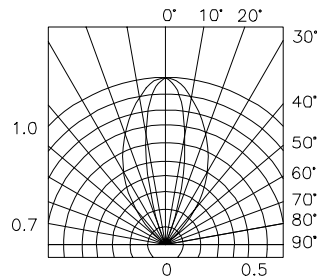
Forward Voltage(V)  
FORWARD CURRENT Vs  
FORWARD VOLTAGE



If-Forward Current (mA)  
LUMINOUS INTENSITY Vs.  
FORWARD CURRENT

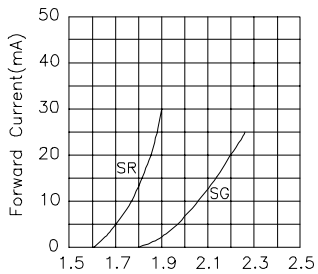


Ambient Temperature  $T_a$  (°C)  
FORWARD CURRENT  
DERATING CURVE

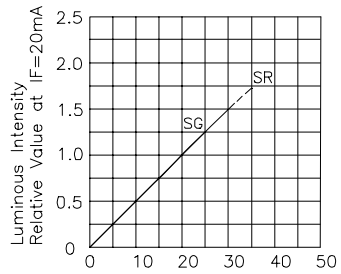


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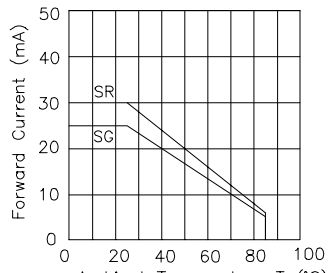
## Super Bright Red / Super Bright Green L-59SRSGW-CC ,L-59SRSGC-CC



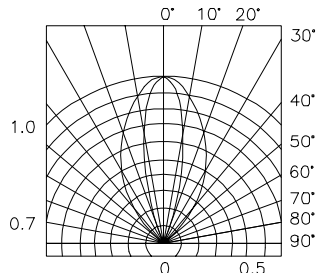
Forward Voltage(V)  
FORWARD CURRENT Vs  
FORWARD VOLTAGE



If-Forward Current (mA)  
LUMINOUS INTENSITY Vs.  
FORWARD CURRENT

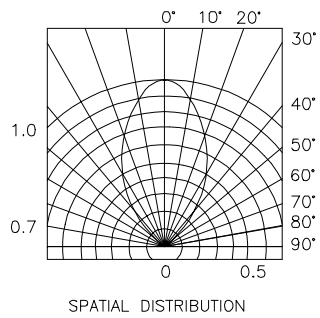
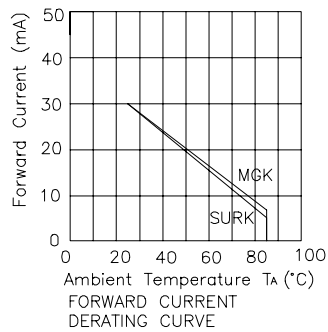
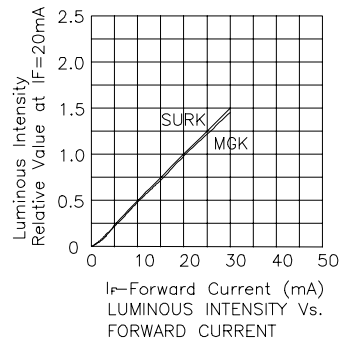
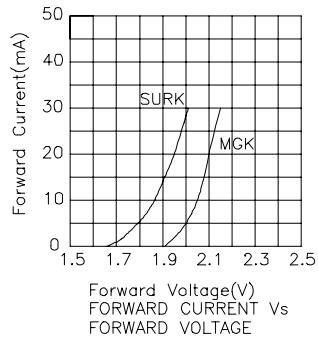


Ambient Temperature  $T_a$  (°C)  
FORWARD CURRENT  
DERATING CURVE



SPATIAL DISTRIBUTION

## Hyper Red / Mega Green L-59SURKMGKW



## Hyper Red / Super Bright Green L-59SURKSGC

