

L937 SERIES

### Features

- UNIFORM LIGHT OUTPUT.
- LOW POWER CONSUMPTION.
- MILKY WHITE DIFFUSION LENS.
- THIRD COLOR (MIXED COLOR) AVAILABLE.
- SUPER BRIGHT VERSION AVAILABLE.
- I.C. COMPATIBLE.
- LONG LIFE - SOLID STATE RELIABILITY.

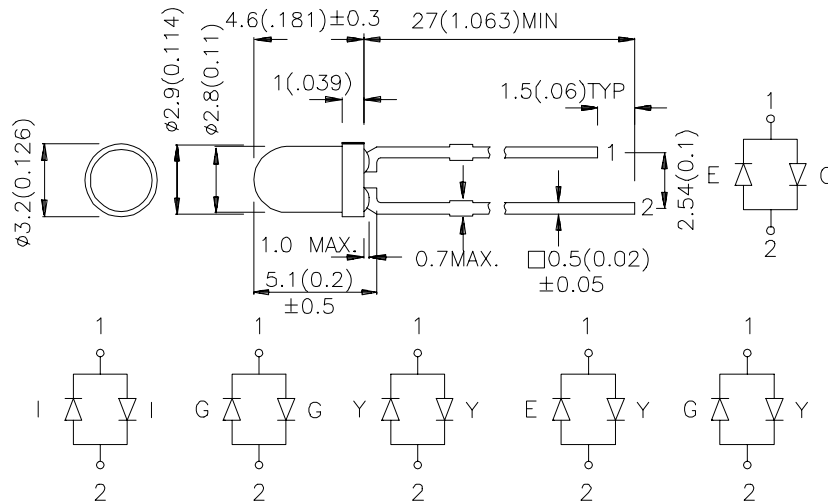
### Description

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

The Green 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 subject to change without notice.

## Selection Guide

| Part No. | Dice                            | Lens Type       | Iv (mcd)<br>@ 20 mA |      | Viewing<br>Angle |
|----------|---------------------------------|-----------------|---------------------|------|------------------|
|          |                                 |                 | Min.                | Typ. | 2θ1/2            |
| L937IID  | HIGH EFFICIENCY RED (GaAsP/GaP) | RED DIFFUSED    | 8                   | 20   | 60°              |
|          | HIGH EFFICIENCY RED (GaAsP/GaP) |                 | 8                   | 20   |                  |
| L937GGD  | GREEN (GaP)                     | GREEN DIFFUSED  | 5                   | 15   | 60°              |
|          | GREEN (GaP)                     |                 | 5                   | 15   |                  |
| L937YYD  | YELLOW (GaAsP/GaP)              | YELLOW DIFFUSED | 5                   | 10   | 60°              |
|          | YELLOW (GaAsP/GaP)              |                 | 5                   | 10   |                  |
| L937EGW  | HIGH EFFICIENCY RED (GaAsP/GaP) | WHITE DIFFUSED  | 8                   | 20   | 60°              |
|          | GREEN (GaP)                     |                 | 8                   | 20   |                  |
| L937EYW  | HIGH EFFICIENCY RED (GaAsP/GaP) | WHITE DIFFUSED  | 8                   | 20   | 60°              |
|          | YELLOW (GaAsP/GaP)              |                 | 5                   | 10   |                  |
| L937GYW  | GREEN (GaP)                     | WHITE DIFFUSED  | 8                   | 20   | 60°              |
|          | YELLOW (GaAsP/GaP)              |                 | 5                   | 10   |                  |

Note:

1. θ1/2 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

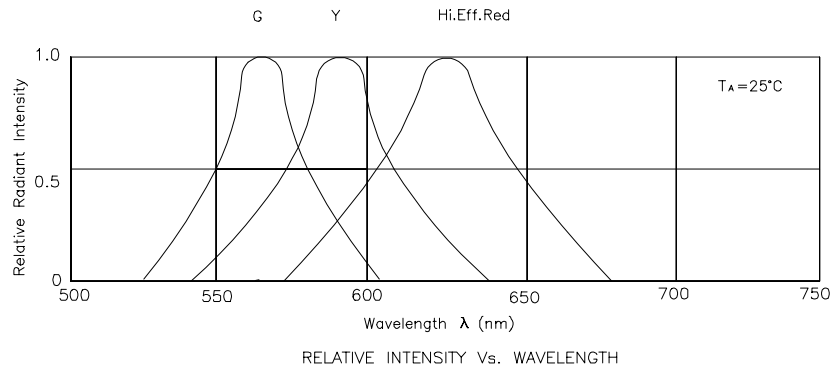
| Symbol            | Parameter               | Device                                 | Typ.              | Max.              | Units | Test Conditions |
|-------------------|-------------------------|--|-------------------|-------------------|-------|-----------------|
| λ <sub>peak</sub> | Peak Wavelength         | High Efficiency Red<br>Green<br>Yellow | 627<br>565<br>590 |                   | nm    | IF=20mA         |
| λ <sub>D</sub>    | Dominate Wavelength     | High Efficiency Red<br>Green<br>Yellow | 625<br>568<br>588 |                   | nm    | IF=20mA         |
| Δλ <sub>1/2</sub> | Spectral Line Halfwidth | High Efficiency Red<br>Green<br>Yellow | 45<br>30<br>35    |                   | nm    | IF=20mA         |
| C                 | Capacitance             | High Efficiency Red<br>Green<br>Yellow | 15<br>15<br>20    |                   | pF    | VF=0V;f=1MHz    |
| V <sub>F</sub>    | Forward Voltage         | High Efficiency Red<br>Green<br>Yellow | 2.0<br>2.2<br>2.1 | 2.5<br>2.5<br>2.5 | V     | IF=20mA         |
| I <sub>R</sub>    | Reverse Current         | All                                    |                   | 10                | μA    | VR = 5V         |

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

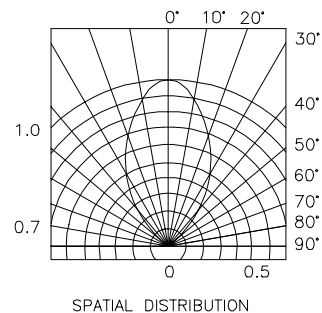
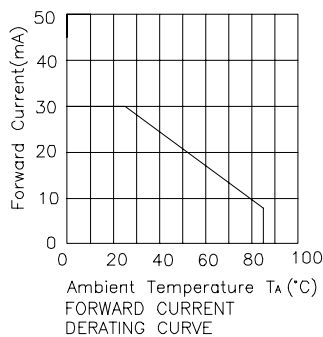
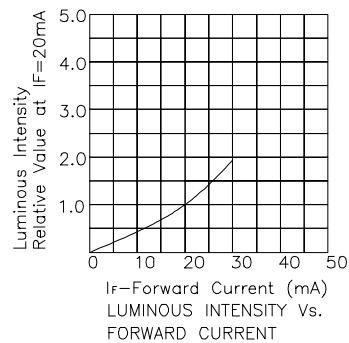
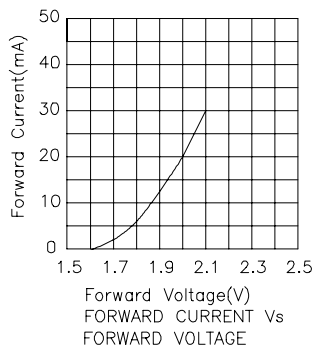
| Parameter                     | High Efficiency Red | Green | Yellow | Units |
|-------------------------------|---------------------|-------|--------|-------|
| Power dissipation             | 105                 | 105   | 105    | mW    |
| DC Forward Current            | 30                  | 25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

Notes:

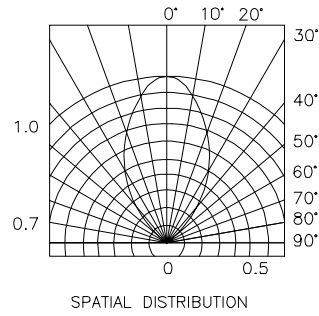
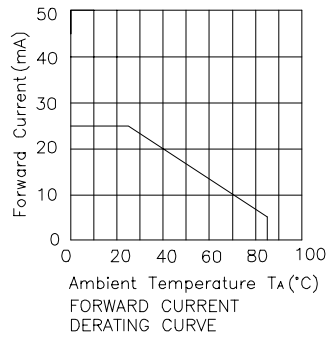
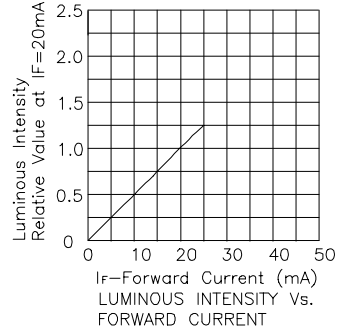
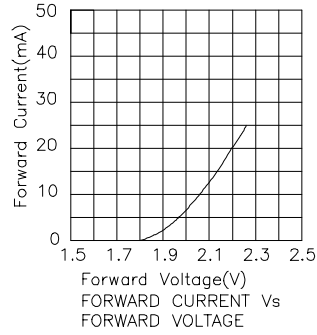
- 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



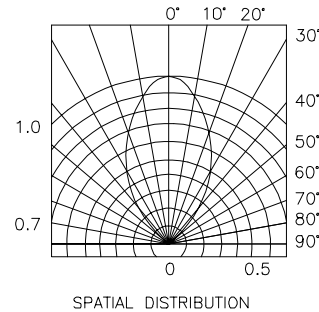
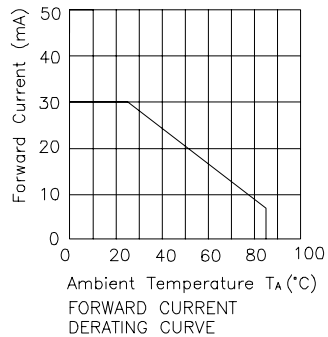
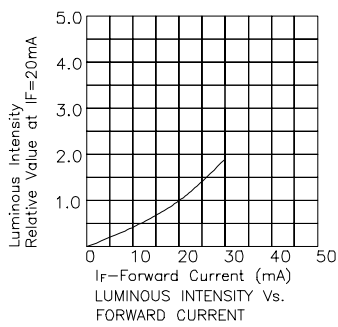
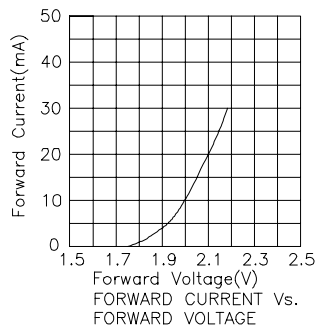
## High Efficiency Red L937IID



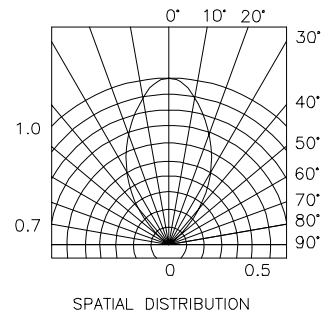
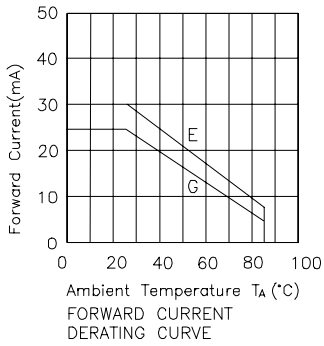
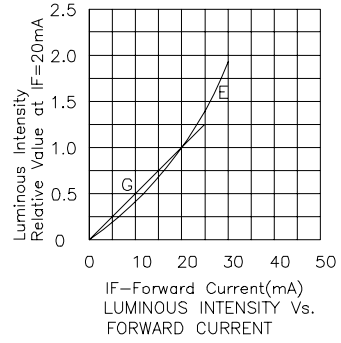
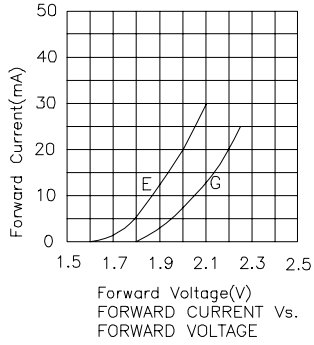
## Green L937GGD



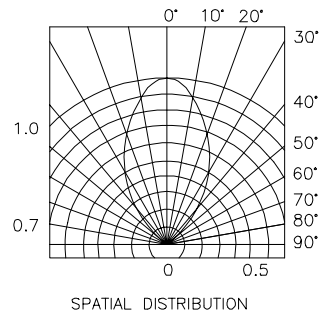
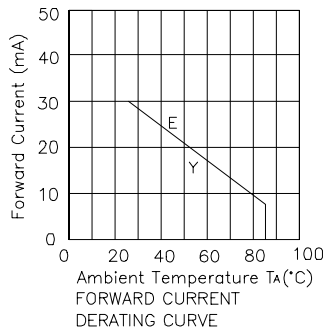
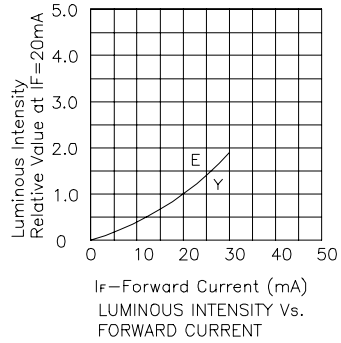
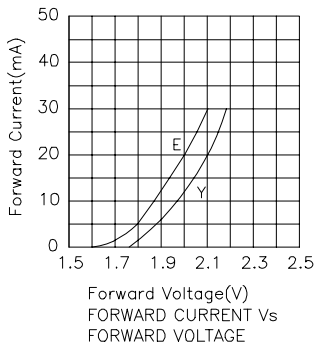
## Yellow L937YYD



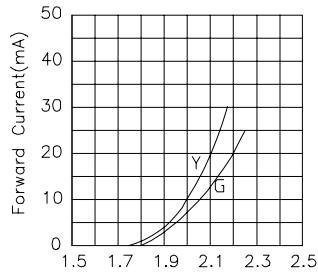
## High Efficiency Red / Green L937EGW



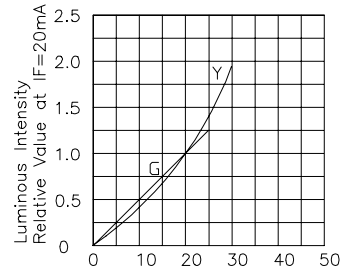
## High Efficiency Red / Yellow L937EYW



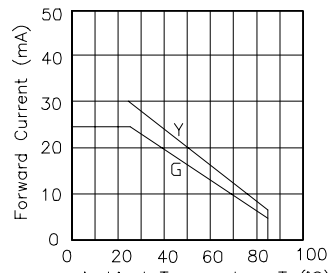
## Green / Yellow L937GYW



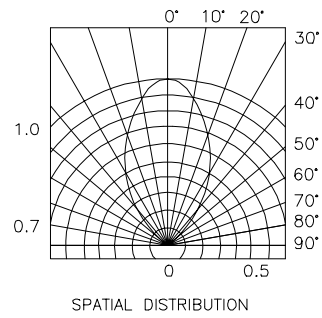
Forward Voltage(V)  
FORWARD CURRENT Vs  
FORWARD VOLTAGE



$I_F$ —Forward Current (mA)  
LUMINOUS INTENSITY Vs.  
FORWARD CURRENT



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



SPATIAL DISTRIBUTION