

L-937 SERIES

Features

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

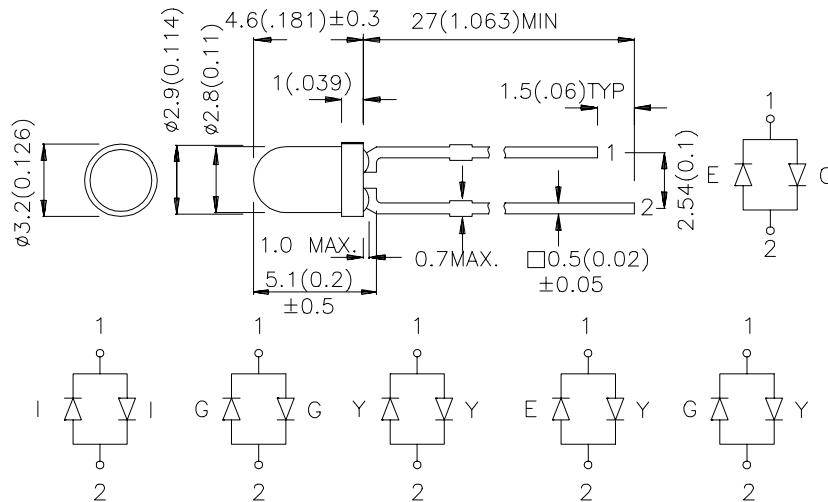
Description

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) @ 20 mA | | Viewing Angle |
|----------|---------------------------------|-----------------|---------------------|------|------------------|
| | | | Min. | Typ. | 2θ1/2 |
| L-937IID | HIGH EFFICIENCY RED (GaAsP/GaP) | RED DIFFUSED | 8 | 20 | 60° |
| | HIGH EFFICIENCY RED (GaAsP/GaP) | | 8 | 20 | |
| L-937GGD | GREEN (GaP) | GREEN DIFFUSED | 5 | 15 | 60° |
| | GREEN (GaP) | | 5 | 15 | |
| L-937YYD | YELLOW (GaAsP/GaP) | YELLOW DIFFUSED | 5 | 10 | 60° |
| | YELLOW (GaAsP/GaP) | | 5 | 10 | |
| L-937EGW | HIGH EFFICIENCY RED (GaAsP/GaP) | WHITE DIFFUSED | 8 | 20 | 60° |
| | GREEN (GaP) | | 8 | 20 | |
| L-937EYW | HIGH EFFICIENCY RED (GaAsP/GaP) | WHITE DIFFUSED | 8 | 20 | 60° |
| | YELLOW (GaAsP/GaP) | | 5 | 10 | |
| L-937GYW | 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_A=25°C

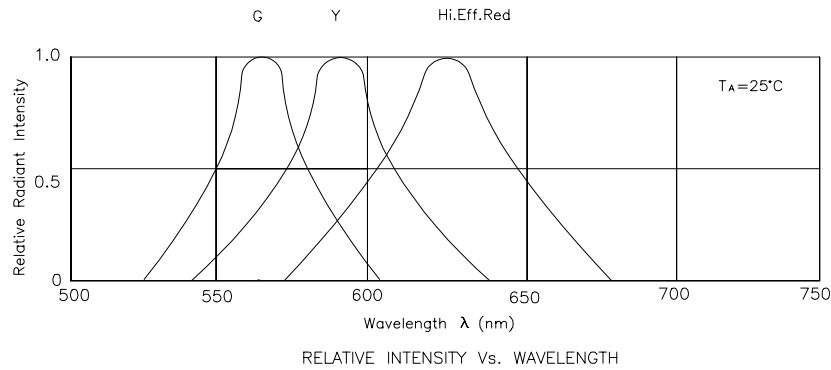
| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|-------------------|-------------------------|--|-------------------|-------------------|-------|-----------------|
| λ _{peak} | Peak Wavelength | High Efficiency Red Green Yellow | 627 565 590 | | nm | IF=20mA |
| λ _D | Dominant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

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

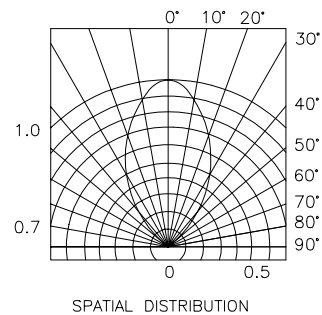
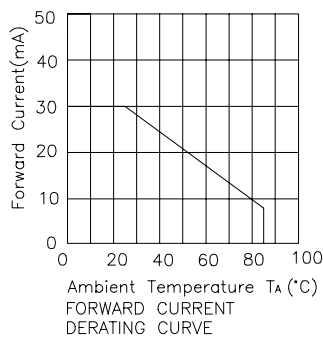
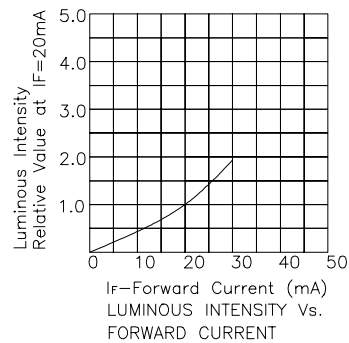
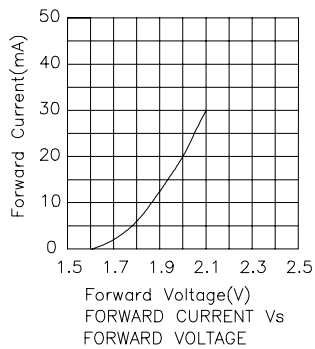
| Parameter | High Efficiency Red | Green | Yellow | Units |
|-------------------------------|---------------------|-------|--------|-------|
| Power dissipation | 105 | 105 | 105 | mW |
| DC Forward Current | 30 | 25 | 30 | mA |
| Peak Forward Current [1] | 160 | 140 | 140 | mA |
| Reverse Voltage |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

Notes:

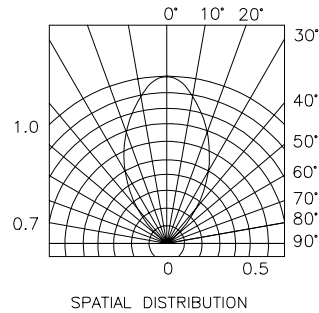
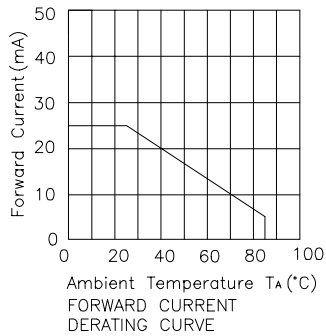
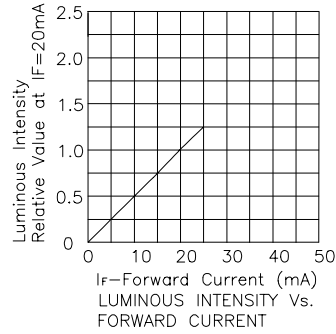
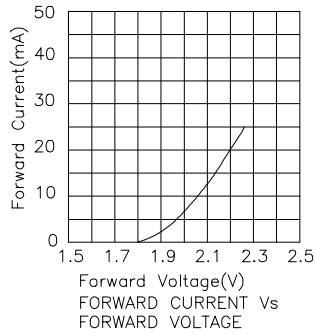
- 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



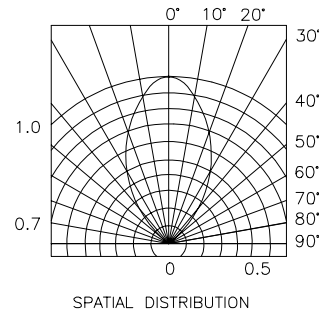
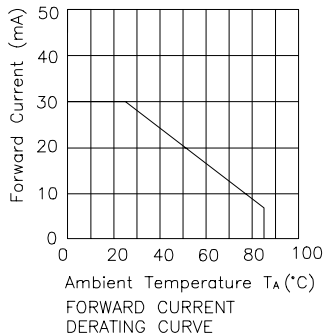
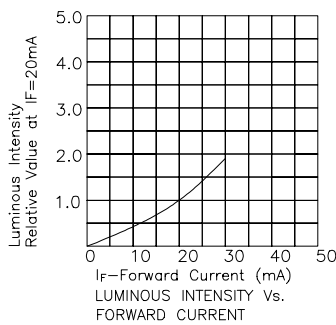
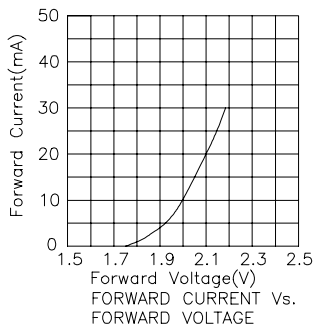
High Efficiency Red L-937IID



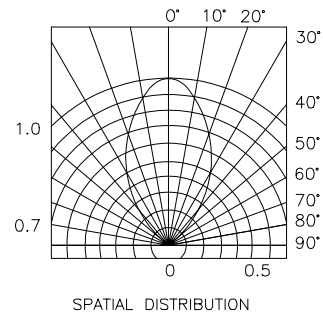
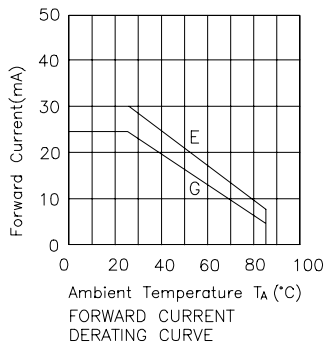
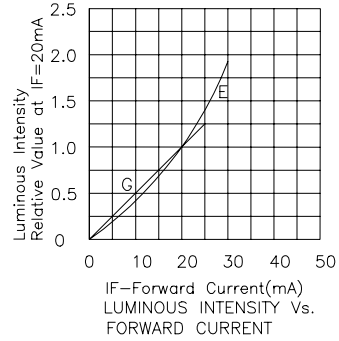
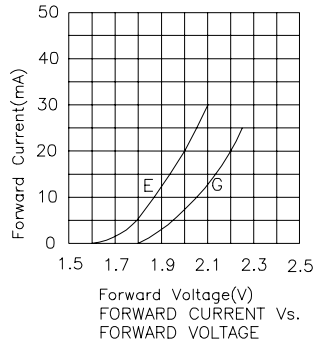
Green L-937GGD



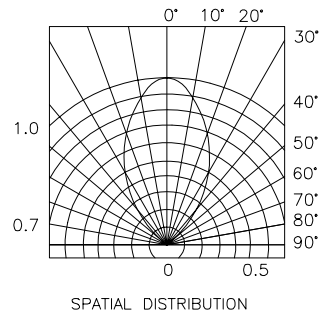
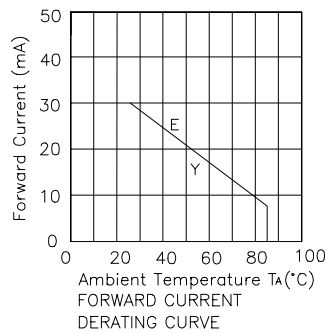
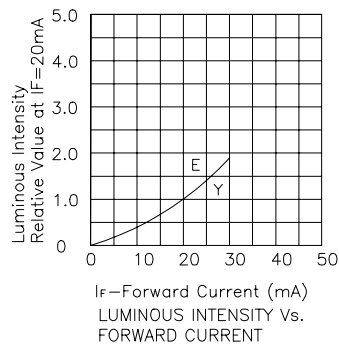
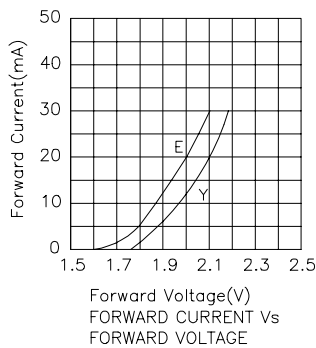
Yellow L-937YYD



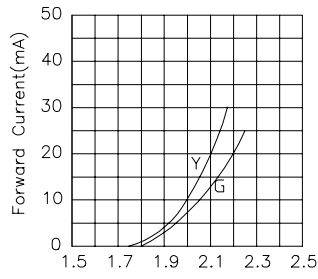
High Efficiency Red / Green L-937EGW



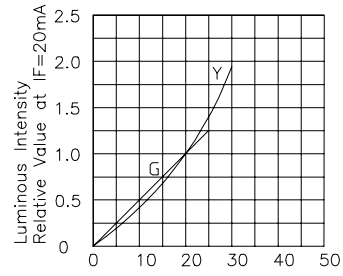
High Efficiency Red / Yellow L-937EYW



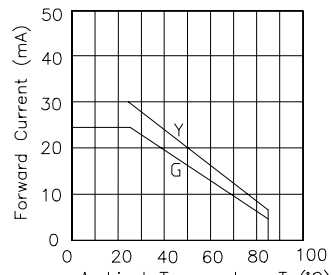
Green / Yellow L-937GYW



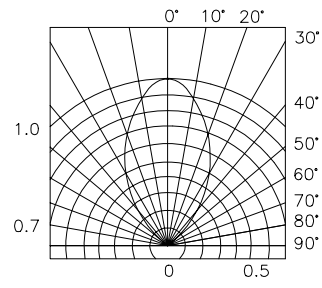
Forward Voltage(V)
FORWARD CURRENT Vs
FORWARD VOLTAGE



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



Ambient Temperature T_{amb} (°C)
FORWARD CURRENT
DERATING CURVE



SPATIAL DISTRIBUTION