

L-1593IT HIGH EFFICIENCY RED

L-1593EC HIGH EFFICIENCY RED

L-1593SRx SUPERBRIGHT RED

L-1593SGT SUPERBRIGHT GREEN

L-1593Yx YELLOW

### Features

- LOW POWER CONSUMPTION.
- HIGH INTENSITY.
- VERSATILE MOUNTING ON P.C. BOARD OR PANEL.
- LOW CURRENT REQUIREMENTS.
- POPULAR T-1 3/4 DIAMETER, 1" LEAD LENGTH, 9.65mm LONG BODY.
- RELIABLE AND RUGGED.
- VERSION IS AVAILABLE.

### Description

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

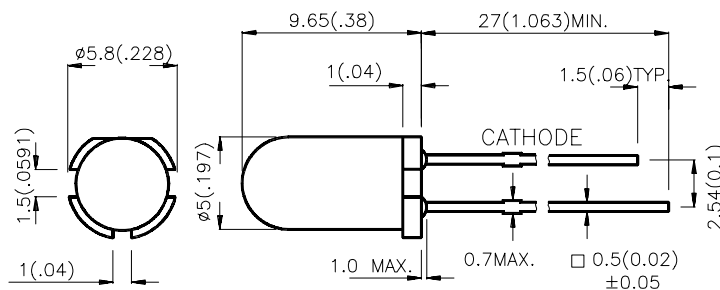
The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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 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>@ 10 mA *20mA |      | Viewing<br>Angle |
|------------|---------------------------------|---------------|---------------------------|------|------------------|
|            |                                 |               | Min.                      | Typ. | 2θ1/2            |
| L1593IT    | HIGH EFFICIENCY RED (GaAsP/GaP) | RED TRANS.    | 50                        | 80   | 30°              |
| L1593EC    |                                 | WATER CLEAR   | 50                        | 80   | 30°              |
| L1593YT    | YELLOW (GaAsP/GaP)              | YELLOW TRANS. | 20                        | 50   | 30°              |
| L1593YC    |                                 | WATER CLEAR   | 20                        | 50   | 30°              |
| L1593SGT   | SUPER BRIGHT GREEN (GaP)        | GREEN TRANS.  | *50                       | *150 | 30°              |
| L1593SRC-D | SUPER BRIGHT RED (GaAlAs)       | WATER CLEAR   | *500                      | *800 | 30°              |
| L1593SRT-D |                                 | RED TRANS.    | *500                      | *800 | 30°              |

### Notes:

1. θ1/2 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

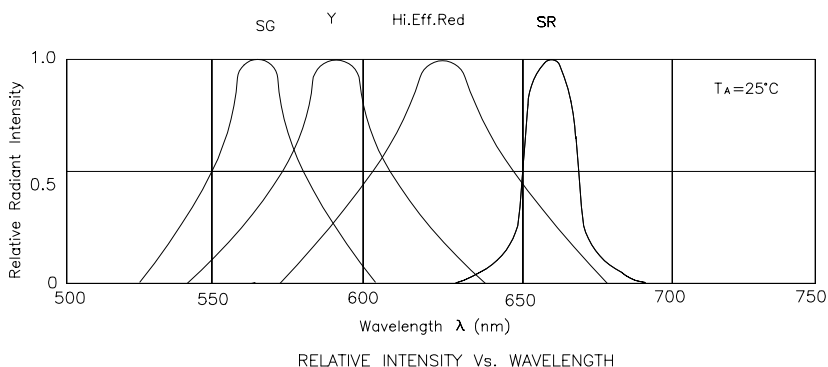
| Symbol            | Parameter               | Device                                                                  | Typ.                      | Max.                     | Units | Test Conditions |
|-------------------|-------------------------|-------------------------------------------------------------------------|---------------------------|--------------------------|-------|-----------------|
| λ <sub>peak</sub> | Peak Wavelength         | High Efficiency Red<br>Super Bright Green<br>Yellow<br>Super Bright Red | 627<br>565<br>590<br>660  |                          | nm    | IF=20mA         |
| λ <sub>D</sub>    | Dominate Wavelength     | High Efficiency Red<br>Super Bright Green<br>Yellow<br>Super Bright Red | 625<br>568<br>588<br>640  |                          | nm    | IF=20mA         |
| Δλ <sub>1/2</sub> | Spectral Line Halfwidth | High Efficiency Red<br>Super Bright Green<br>Yellow<br>Super Bright Red | 45<br>30<br>35<br>20      |                          | nm    | IF=20mA         |
| C                 | Capacitance             | High Efficiency Red<br>Super Bright Green<br>Yellow<br>Super Bright Red | 15<br>15<br>20<br>45      |                          | pF    | VF=0V;f=1MHz    |
| V <sub>F</sub>    | Forward Voltage         | High Efficiency Red<br>Super Bright Green<br>Yellow<br>Super Bright Red | 2.0<br>2.2<br>2.1<br>1.85 | 2.5<br>2.5<br>2.5<br>2.5 | V     | IF=20mA         |
| I <sub>R</sub>    | Reverse Current         | All                                                                     |                           | 10                       | uA    | VR = 5V         |

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

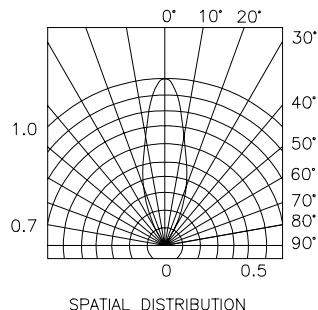
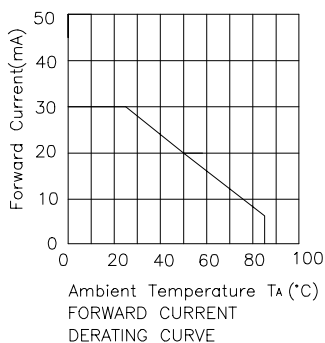
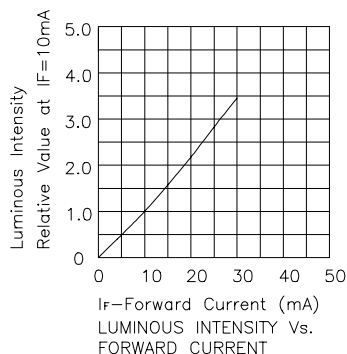
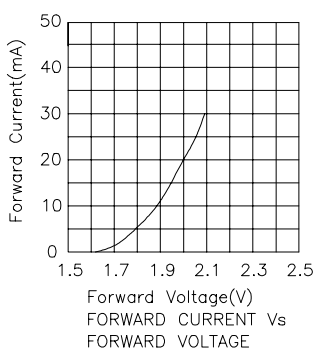
| Parameter                     | High Efficiency Red                            | Super Bright Green | Yellow | Super Bright Red | Units |
|-------------------------------|------------------------------------------------|--------------------|--------|------------------|-------|
| Power dissipation             | 105                                            | 105                | 105    | 100              | mW    |
| DC Forward Current            | 30                                             | 25                 | 30     | 30               | mA    |
| Peak Forward Current [1]      | 160                                            | 140                | 140    | 155              | mA    |
| Reverse Voltage               | 5                                              | 5                  | 5      | 5                | V     |
| Operating/Storage Temperature | $-40^{\circ}\text{C}$ To $+85^{\circ}\text{C}$ |                    |        |                  |       |
| Lead Solder Temperature [2]   | 260 $^{\circ}\text{C}$ For 5 Seconds           |                    |        |                  |       |

Notes:

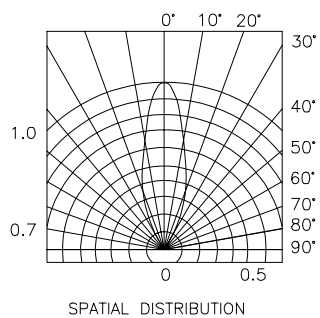
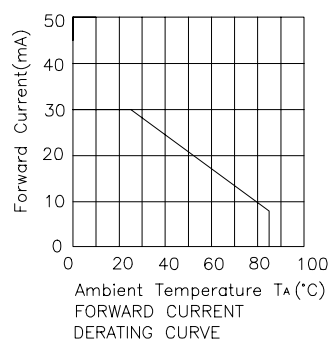
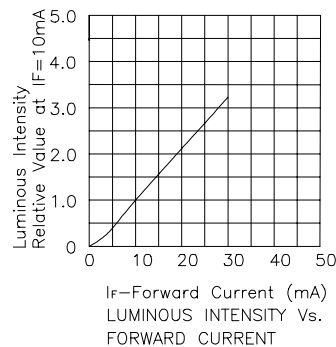
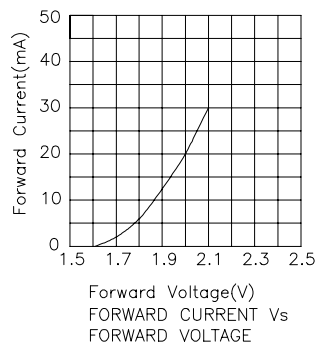
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



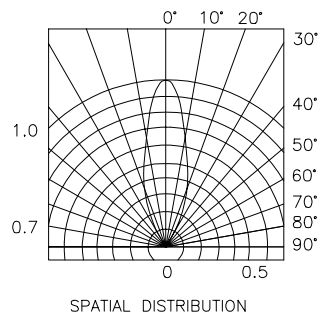
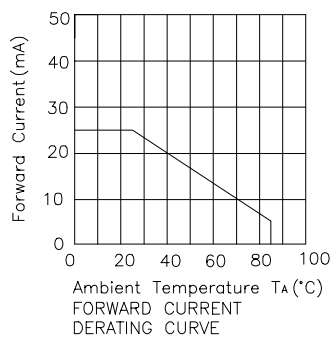
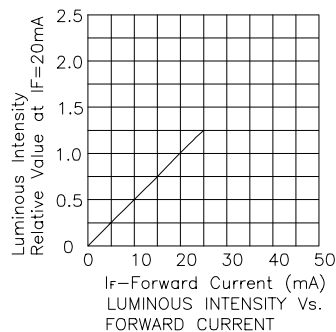
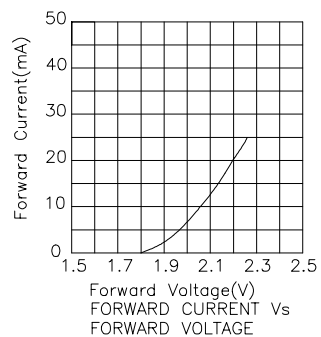
## High Efficiency Red L-1593IT



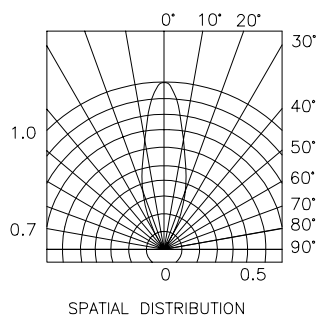
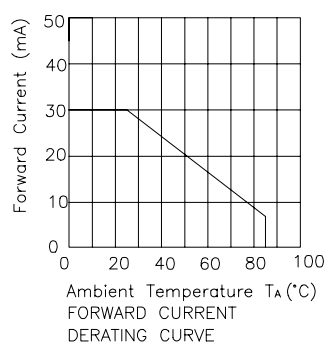
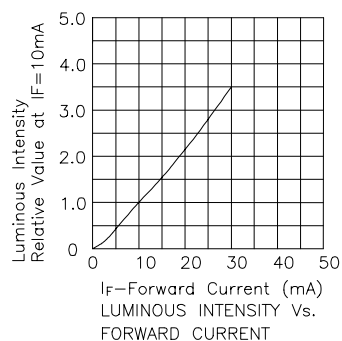
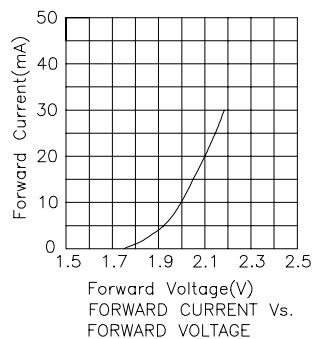
## High Efficiency Red L-1593EC



## Super Bright Green L-1593SGT



## Yellow L-1593YC,L-1593YT



## Super Bright Red L-1593SRC-D,L-1593SRT-D

