

### Features

- T-1 3/4 PACKAGE WITH RECTANGULAR BASE.
- WITH BUILT-IN BLINKING IC.
- OPERATION VOLTAGE FROM 3.5V TO 13V.
- BLINKING FREQUENCY FROM 2.5Hz TO 1.5Hz.

- L456BHD BRIGHT RED
- L456BGD GREEN
- L456BID HIGH EFFICIENCY RED
- L456BYD YELLOW
- L456BSRD/B SUPER BRIGHT RED

### Description

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

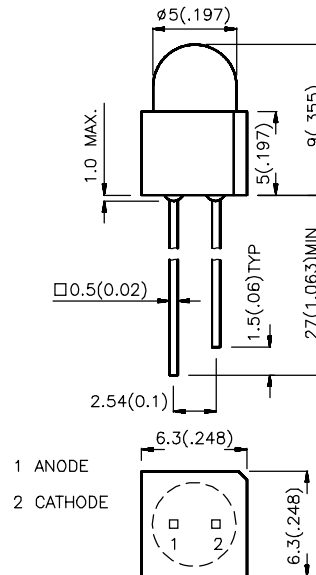
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red 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) @ VF=9V		Viewing Angle
			Min.	Typ.	$2\theta_{1/2}$
L456BHD	BRIHT RED (GaP)	RED DIFFUSED	0.8	1	60°
L456BID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	12	20	60°
L456BGD	GREEN (GaP)	GREEN DIFFUSED	5	15	60°
L456BYD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	5	15	60°
L456BSRD/B	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	100	200	60°

### Notes:

1.  $\theta_{1/2}$  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

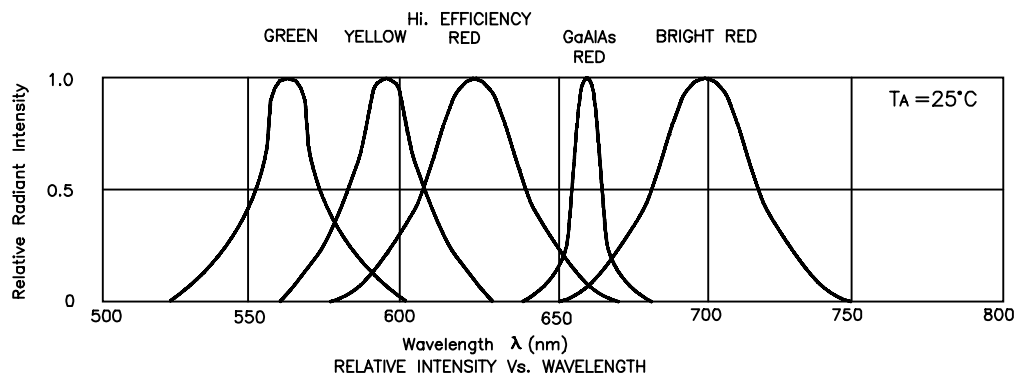
Symbol	Parameter	Device	Min.	Typ.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Bright Red High Efficiency Red Green Yellow Super Bright Red		700 625 565 590 660	nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Green Yellow Super Bright Red		45 45 30 35 20	nm	IF=20mA
V <sub>F</sub>	Forward Voltage	All	3.5	9-12	V	Min. IF=6mA Typ. IF=38-56mA
I <sub>SON</sub>	Supply Current	All		6 -70	mA	
f	Blink Frequency	All		2.5-1.5	Hz	

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

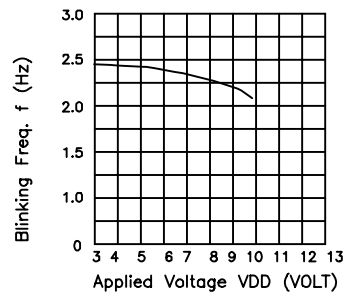
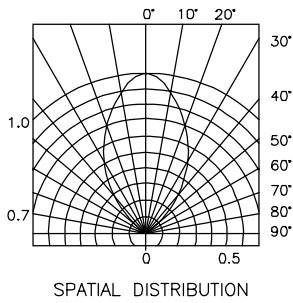
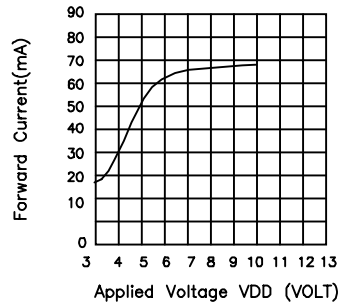
Parameter	Bright Red	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	200	200	200	200	200	mW
DC Forward Current	38-56	38-56	38-56	38-56	38-56	mA
Reverse Voltage	0.5	0.5	0.5	0.5	0.5	V
Operating Temperature	-40°C To +70°C					
Storage Temperature	-50°C To +100°C					
Lead Soldering Temperature [1]	260°C For 5 Seconds					

### Notes:

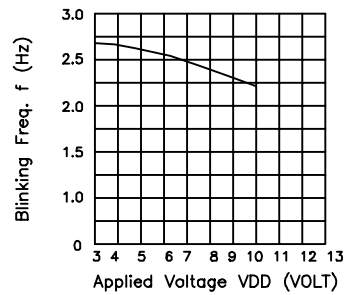
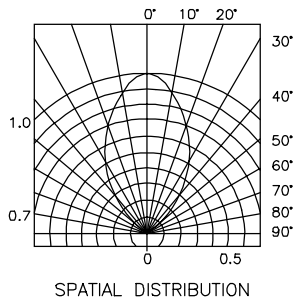
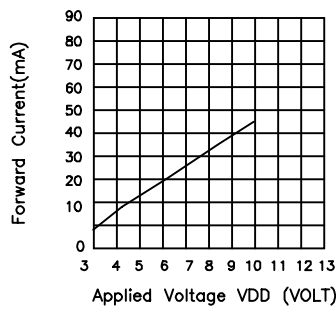
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



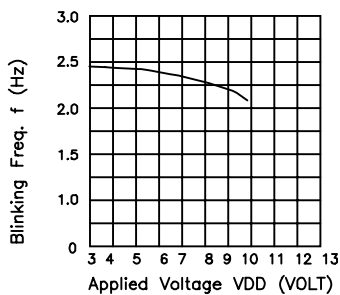
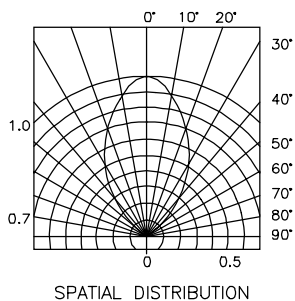
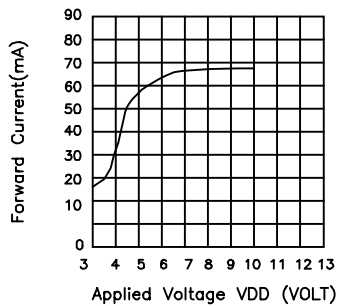
## Bright Red L456BHD



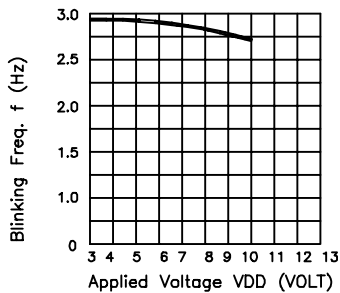
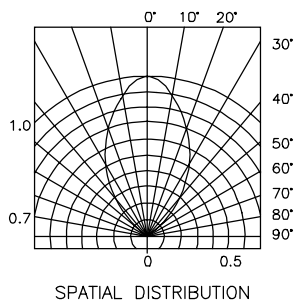
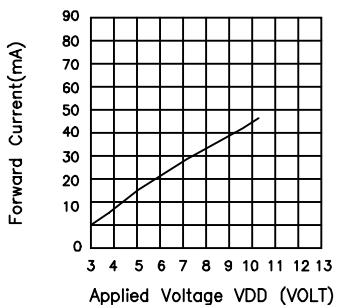
## High Efficiency Red L456BID



## Green L456BGD



## Yellow L456BYD



## Super Bright Red L456SRD/B

