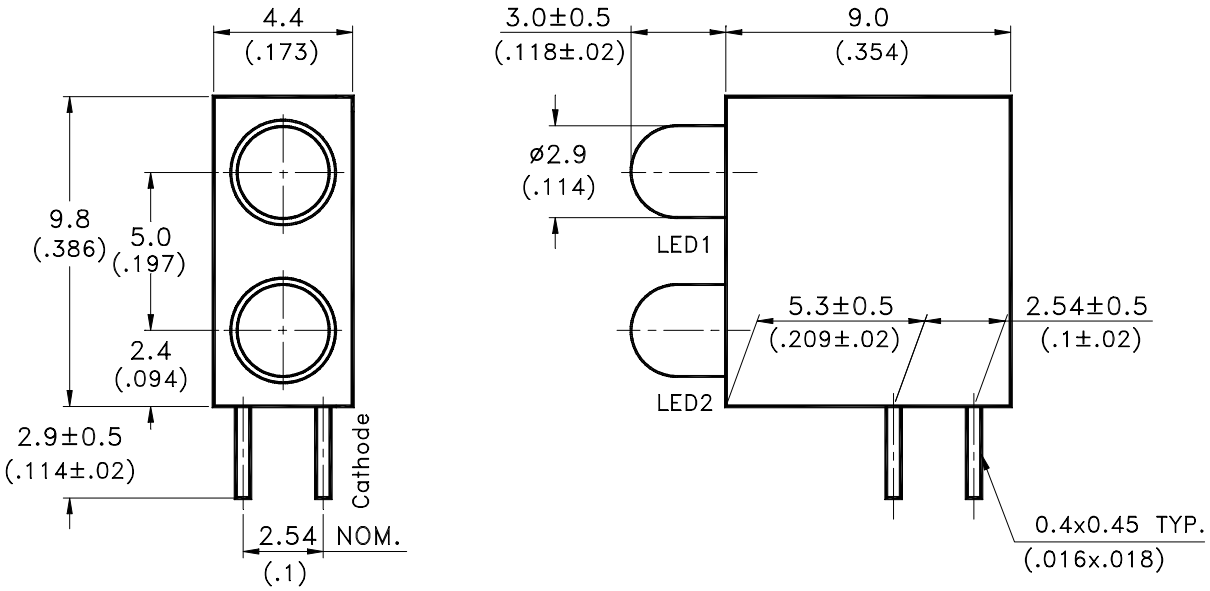
Features

* Designed for ease in circuit board assembly.
* Black case enhance contrast ratio.
* Solid state light source.
* Reliable and rugged.

Package Dimensions



Lamp Part No.	Lens	Source Color
LTL-4231N	Green Diffused	Green
LTL-4221N	Red Diffused	Hi.Eff.Red

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. The holder color is black.
4. The LED1 lamp is LTL-4231N
   The LED2 lamp is LTL-4221N.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at T_a=25℃

Parameter	Green	Hi.Eff.Red	Unit
Power Dissipation	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	120	120	mA
Continuous Forward Current	30	30	mA
Derating Linear From 50℃	0.4	0.4	mA/℃
Reverse Voltage	5	5	V
Operating Temperature Range	-55℃ to + 100℃		
Storage Temperature Range	-55℃ to + 100℃		
Lead Soldering Temperature [1.6mm(.063") From Body]	260℃ for 5 Seconds		

Electrical Optical Characteristics at Ta=25℃

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I_V	Green Hi.Eff.Red	3.7 2.5	12.6 8.7		mcd	I_F = 10mA Note 1,4
Viewing Angle	$2\theta_{1/2}$	Green Hi.Eff.Red		60		deg	Note 2 (Fig.6)
Peak Emission Wavelength	λp	Green Hi.Eff.Red		565 635		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λd	Green Hi.Eff.Red		569 623		nm	Note 3
Spectral Line Half-Width	$\Delta\lambda$	Green Hi.Eff.Red		30 40		nm	
Forward Voltage	V_F	Green Hi.Eff.Red		2.1 2.0	2.6 2.6	V	I_F = 20mA
Reverse Current	I_R	Green Hi.Eff.Red			100	μA	V_R = 5V
Capacitance	C	Green Hi.Eff.Red		35 20		pF	V_F = 0 , f = 1MHz

Note: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

3. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

4. Iv needs ±15% additionary for guaranteed limits.

Typical Electrical / Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

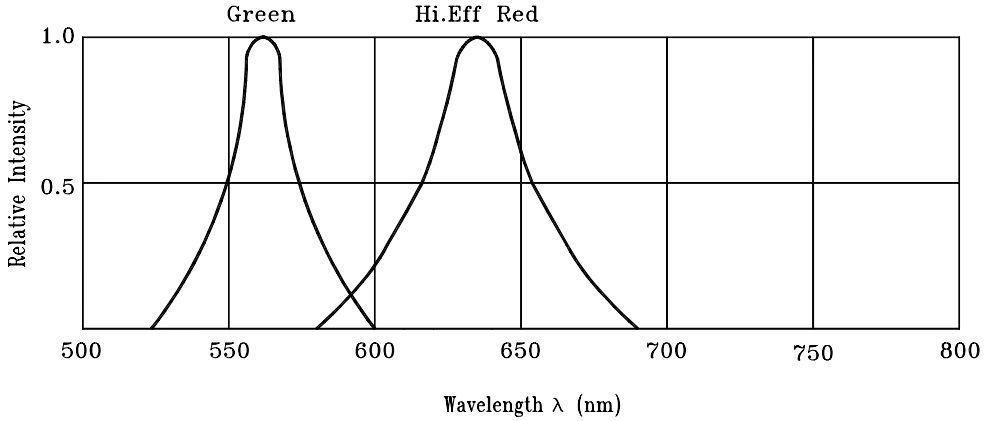


Fig.1 Relative Intensity vs. Wavelength

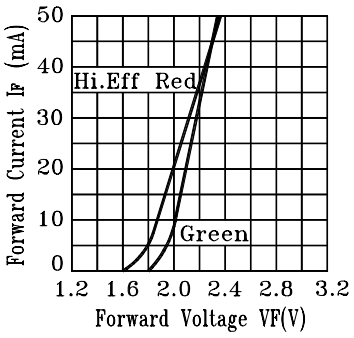


Fig.2 Forward Current vs. Forward Voltage

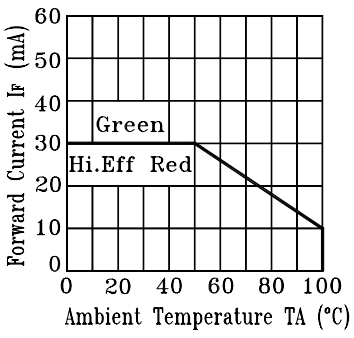


Fig.3 Forward Current Derating Curve

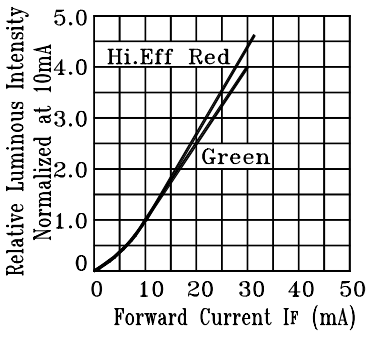


Fig.4 Relative Luminous Intensity vs. Forward Current

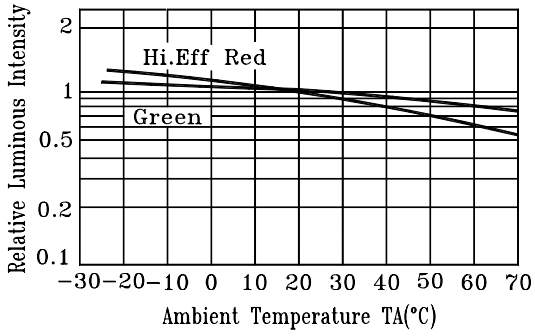


Fig.5 Luminous Intensity vs. Ambient Temperature

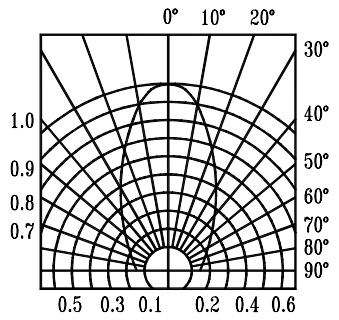


Fig.6 Spatial Distribution