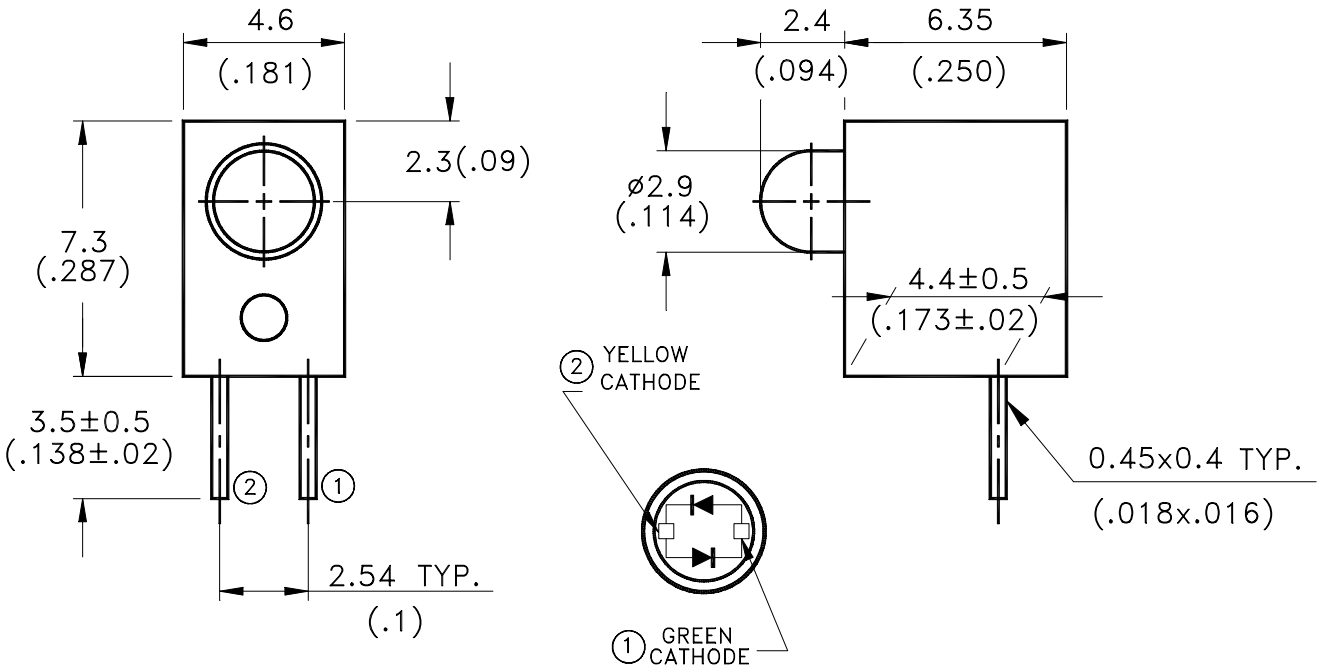
Features

* Designed for ease in circuit board assembly.
* Solid state light source.
* Pre-trimmed leads for PC Board mounting.
* Reliable and rugged.
* Black case enhance contrast ratio.
* Holder material: PC.

Package Dimensions



Lamp Part No.	Lens	Source Color
LTL-14CDJN	White Diffused	Yellow / Green

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

Absolute Maximum Ratings at T_A=25℃

Parameter	Yellow	Green	Unit
Power Dissipation	60	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	120	mA
Continuous Forward Current	20	30	mA
Derating Linear From 50℃	0.25	0.4	mA/℃
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 T_A=25℃

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Iv	Yellow Green	2.5 3.7	8.7 12.6		mcd	I_F = 20mA I_F = 20mA Note 1,4
Viewing Angle	$2\theta_{1/2}$	Yellow Green		80 80		deg	Note 2 (Fig.6)
Peak Emission Wavelength	λ p	Yellow Green		585 565		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ d	Yellow Green		588 569		nm	Note 3
Spectral Line Half-Width	$\Delta\lambda$	Yellow Green		35 30		nm	
Forward Voltage	V_F	Yellow Green		2.1 2.1	2.6 2.6	V	I_F = 20mA
Reverse Current	I_R	Yellow Green			100	μA	V_R = 5V Note 5
Capacitance	C	Yellow Green		15 35		pF	V_F = 0 , f = 1MHz

Note: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L'Eclairage) 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, λ_d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

4. The Iv guarantee should be added ±15%.

5. Reverse current is controlled by dice source.

Typical Electrical / Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

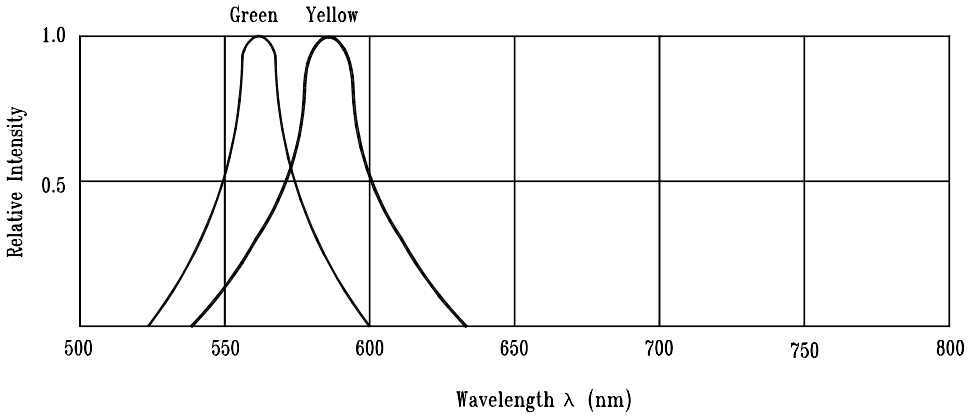


Fig.1 Relative Intensity vs. Wavelength

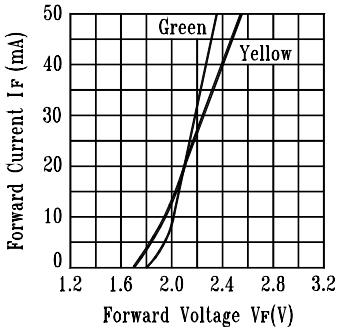


Fig.2 Forward Current vs. Forward Voltage

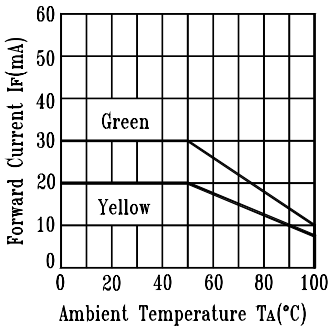


Fig.3 Forward Current Derating Curve

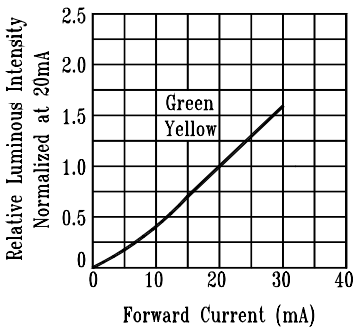


Fig.4 Relative Luminous Intensity vs. Forward Current

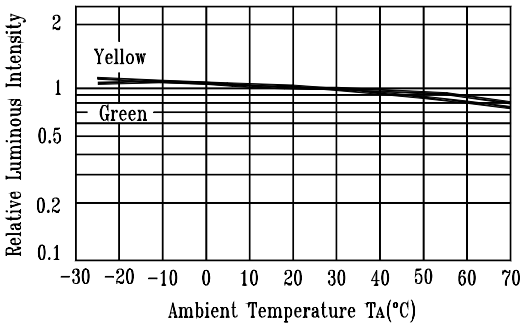


Fig.5 Luminous Intensity vs. Ambient Temperature

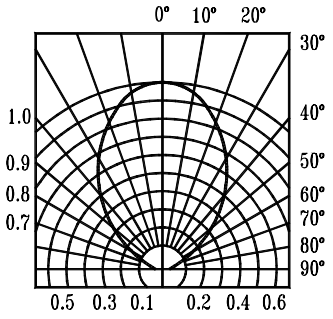


Fig.6 Spatial Distribution

CAUTIONS

1. Application limitation

The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household application.) Consult Liteon's sales in advance for information on application in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as airplanes, automobiles, traffic control equipment, life support system and safety devices).

2. Storage

After being shipped from Liteon the LEDs should be kept at 30°C or less and 70%RH or less.
The LEDs should be used within 3 months. They can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material. Please avoid rapid transitions in ambient temperature in high humidity environments where condensation may occur.

3. Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

4. Forming & Mounting

When forming a lead, the leads should be bent at a point at least 3mm from the base of epoxy bulb. Do not use the base of the leadframe as a fulcrum during forming. Lead forming must be done before soldering at normal temperature. When mounted through hole type LED lamp, avoid the occurrence of residual mechanical stress due to clinching.

5. Soldering

When soldering, leave a minimum of 2mm clearance from the resin to the soldering point.
Dipping the resin into the solder must be avoided.
Do not apply any stress to the lead frame during soldering while the LED is at high temperature.
Recommended soldering condition

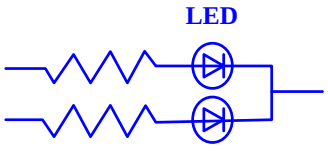
Soldering iron		Wave soldering	
Temperature Soldering time	300°C Max. 3 sec. Max. (one time only)	Pre-heat Pre-heat time Solder wave Soldering time	100°C Max. 60 sec. Max. 260°C Max. 10 sec. Max.

*The material of hook type Housing is very sensitive of soldering temperature. Any increase of soldering temperature might seriously result in serious melting of the housing.

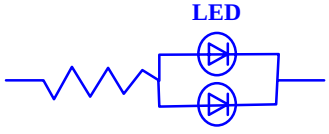
6. Drive Method

LED is a current operated device, and therefore, requires some kind of current limiting incorporated into the drive circuit. This current limiting typically takes the form of a current limiter resistor placed in series with the LED. Consider worst case voltage variations that could occur across the current limiting resistor.
The forward current should not be allowed to change by more than 40% of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.

(B) The difference of brightness between LEDs could be found due to the Vf-If characteristics of LED

7. ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti- electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.

8. Reliability Test (for LED)

Classification	Test Item	Test Condition	Duration / Cycle	Referance Standard
Endurance Test	Room Temp. Operation Life	Ta= Room Temp, Ip= 160 mA / 1/8 duty, Pulse Width =1.25 ms	1000 hrs	MIL-STD-750D:1026 (1995) MIL-STD-883D:1005 (1991) JIS C 7021:B-1 (1982)
Environmental Test	Temperature Cycling	105℃ ～ 25℃ ～ -55℃ ～ 25℃ 30min 5mins 30mins 5mins	10 cycles	MIL-STD-202F:107D (1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1010 (1991) JIS C 7021: A-4(1982)
	Solder Resistance	Solder temperature is 260± 5 ℃	10 sec	MIL-STD-202F:210A(1980) MIL-STD-750D:2031(1995) JIS C 7021: A-1(1982)
	Solderability	Solder temperature is 230± 5 ℃	5 sec	MIL-STD-202F:208D(1980) MIL-STD-750D:2026(1995) MIL-STD-883D:2003(1991) JIS C 7021: A-2(1982)

9. Others

The appearance and specifications of the product may be modified for improvement without notice.