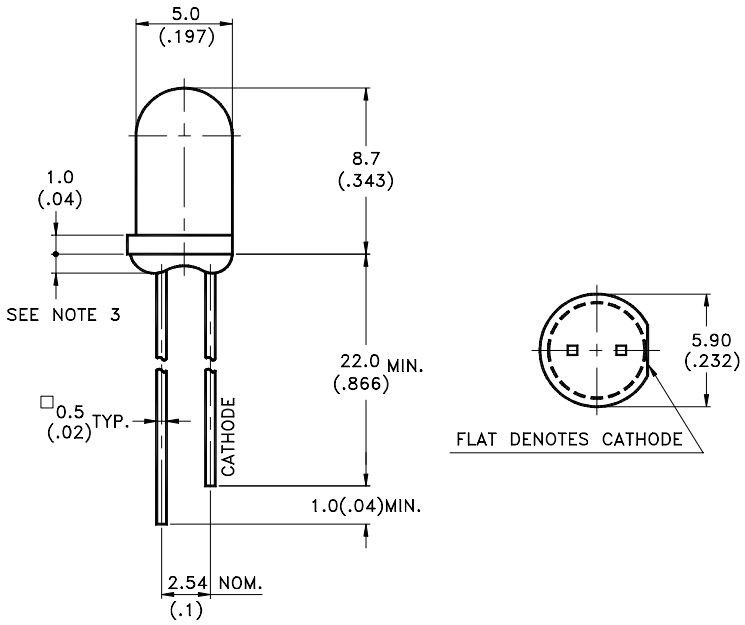
Features

* High luminous intensity output.
* Low power consumption.
* High efficiency.
* Versatile mounting on PCB or panel.
* I.C. Compatible / low current requirements.
* Popular T-1 3/4 diameter.

Package Dimensions



Part No.	Lens	Source Color
LTL2H3SEK-032A	Water Clear	AlInGaP Red
LTL2H3SYK-032A	Water Clear	AlInGaP Amber

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm(.04") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at TA=25 °C

Parameter	Red	Amber	Unit
Power Dissipation	130	130	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	100	100	mA
Continuous Forward Current	50	50	mA
Derating Linear From 25 °C	0.6	0.6	mA/°C
Reverse Voltage	5	5	V
Operating Temperature Range	-40 °C to + 85 °C		
Storage Temperature Range	-55 °C to + 100 °C		
Lead Soldering Temperature [1.6mm(.063") From Body]	260 °C for 5 Seconds		

Electrical / Optical Characteristics at TA=25 °C

Parameter	Symbol	Part NO. (LTL)	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I_V	RED AMBER	2500 2500	6350 5500		mcd	I_F = 20mA Note 1
Viewing Angle	$2\theta_{1/2}$			15		deg	Note 2 (Fig.5)
Peak Emission Wavelength	λ_P	RED AMBER		639 591		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ_d	RED AMBER		630 590		nm	Note 4
Spectral Line Half-Width	$\Delta\lambda$	RED AMBER		17 17		nm	
Forward Voltage	V_F	RED AMBER		2.25 2.35	2.6 2.6	V	I_F = 20mA
Reverse Current	I_R				100	μA	V_R = 5V
Capacitance	C			40		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. Iv classification code is marked on each packing bag.
4. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Typical Electrical / Optical Characteristics Curves

(25 °C Ambient Temperature Unless Otherwise Noted)

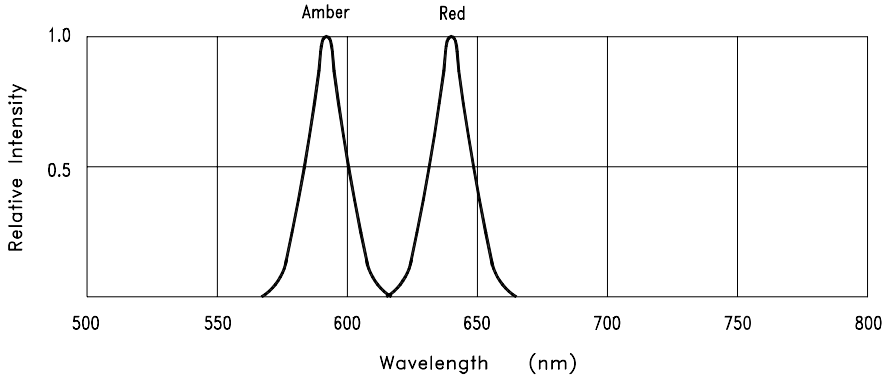


Fig.1 Relative Intensity vs. Wavelength

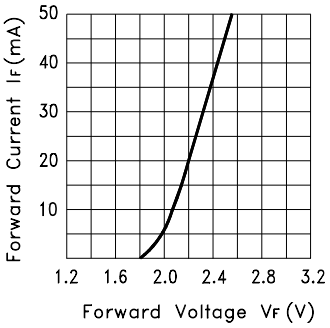


Fig.2 Forward Current vs. Forward Voltage

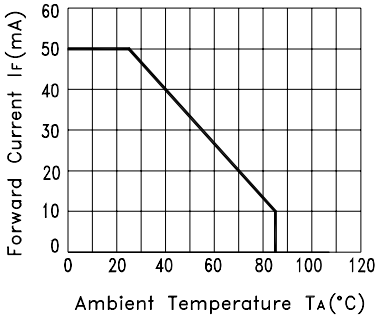


Fig.3 Forward Current Derating Curve

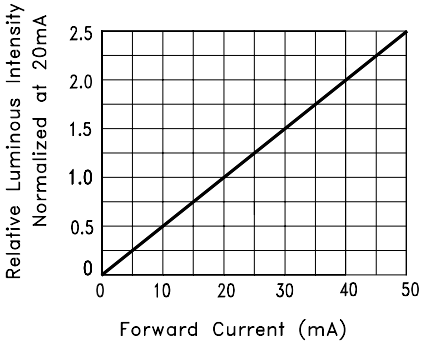


Fig.4 Relative Luminous Intensity vs. Forward Current

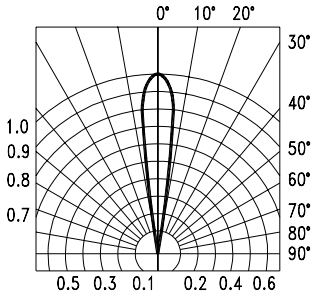
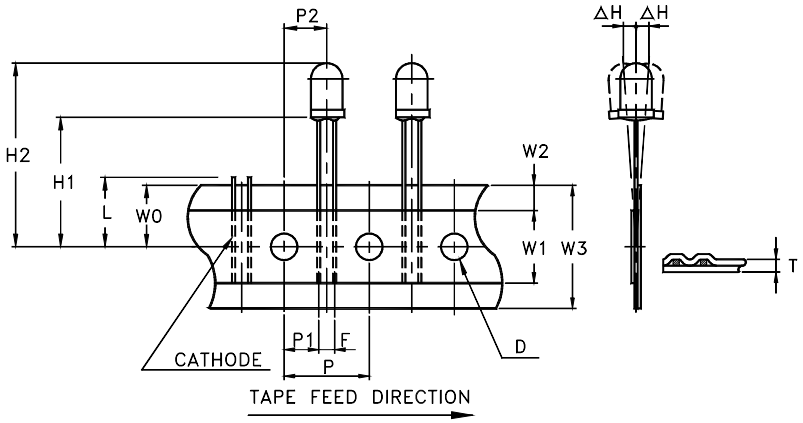


Fig.5 Spatial Distribution

Features

* Compatible with radial lead automatic insertion equipment.
* Most radial lead plastic lead lamps available packaged in tape and folding.
* 2.54mm (0.1") straight lead spacing available.
* Folding packaging simplifies handling and testing.
  Reel packaging is available by removing suffix "A" on option.

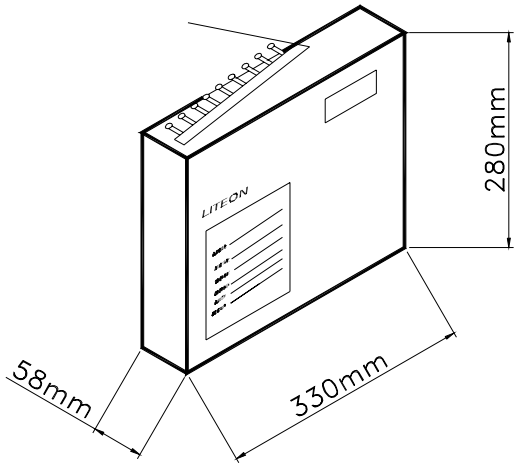
Package Dimensions



Item	Symbol	Specification			
		Minimum			
		mm	inch	mm	inch
Tape Feed Hole Diameter	D	3.8	0.149	4.2	0.165
Component Lead Pitch	F	2.3	0.091	3.0	0.118
Front to Rear Deflection	△H	--	--	2.0	0.078
Feed Hole to Bottom of Component	H1	20.0	0.787	21.0	0.827
Feed Hole to Overall Component Height	H2	28.4	1.118	30.0	1.181
Lead Length After Component Height	L	W0		11.0	0.433
Feed Hole Pitch	P	12.4	0.488	13.0	0.511
Lead Location	P1	4.4	0.173	5.8	0.228
Center of Component Location	P2	5.05	0.198	7.65	0.301
Total Tape Thickness	T	--	--	0.90	0.035
Feed Hole Location	W0	8.5	0.334	9.75	0.384
Adhesive Tape Width	W1	14.5	0.571	15.5	0.610
Adhesive Tape Position	W2	0	0	3.0	0.118
Tape Width	W3	17.5	0.689	19.0	0.748

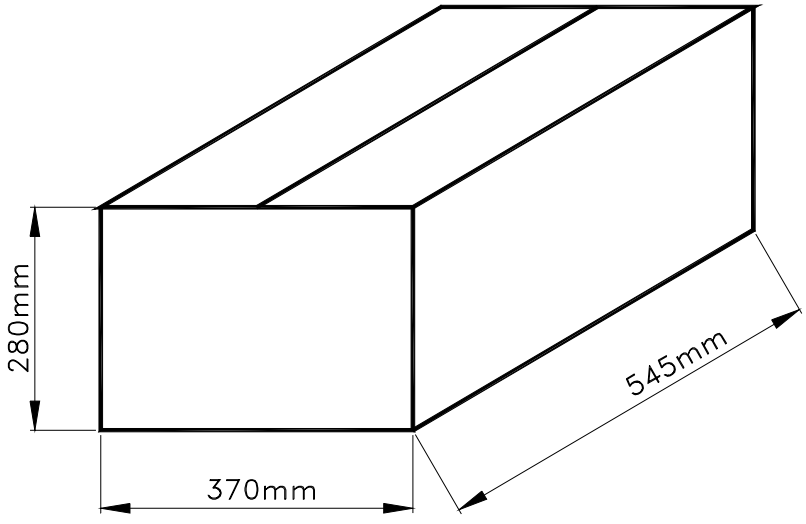
Packing Spec

2000 pcs per inner carton



Tolerance: ±5mm

10 Inner cartons per outer carton
total 20000 pcs per outer carton



Bin Code List For Reference

Luminous Intensity Unit : mcd @20mA		
Bin Code	Min.	Max.
T	2500	3200
U	3200	4200
V	4200	5500
W	5500	7200
X	7200	9300
Y	9300	12000

Dominant Wavelength Unit : nm @20mA For RED		
Bin Code	Min.	Max.
H029	621.0	625.0
H030	625.0	629.0
H031	629.0	633.0
H032	633.0	637.0

Dominant Wavelength Unit : nm @20mA For AMBER		
Bin Code	Min.	Max.
H15	584.0	586.0
H16	586.0	588.0
H17	588.0	590.0
H18	590.0	592.0
H19	592.0	594.0
H20	594.0	596.0

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 as figure shown here.

5. Soldering

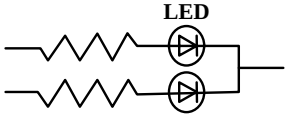
When soldering, leave a minimum of 2mm clearance from the resin to the soldering point.
Dipping the resin into the solder must be avoided.
Do not apply any stress to the lead frame during soldering while the LED is at high temperature.
Recommended soldering condition

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.

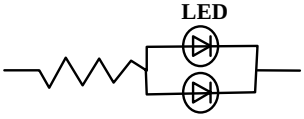
6. Drive Method

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

Classification	Test Item	Test Condition	Duration / Cycle
Endurance Test	Room Temp. Operation Life	If = 50mA DC, Ta= 25℃	1000 hrs
	High Temp. Operation Life	If = 30mA DC, Ta= 55℃	1000 hrs
	High Temperature High Humidity with Bias	If =15 mA,Ta=85℃,RH≧85%	1000 hrs
	High Temperature High Humidity with Reverse Bias	Ta=85℃,RH≧85%, VR = -5V	1000 hrs
Environmental Test	High Temperature Storage	Ta= 100℃	1000 hrs
	Low Temperature Storage	Ta= -55℃	1000 hrs
	Solder Resistance	Solder temperature is 260± 5 ℃	10 sec
	Solderability	Solder temperature is 230± 5 ℃	5 sec
	Thermal Shock	Ta=(105℃ / 15min ~ -40℃ / 15min) 10 seconds transfer time	500 cycles

9. Others

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