LITEON®
OPTOELECTRONICS

Through Hole Lamp

Product Data Sheet

LTL-4262N-011A

Spec No.: DS20-2010-0142

Effective Date: 12/13/2011

Revision: A

LITE-ON DCC

RELEASE

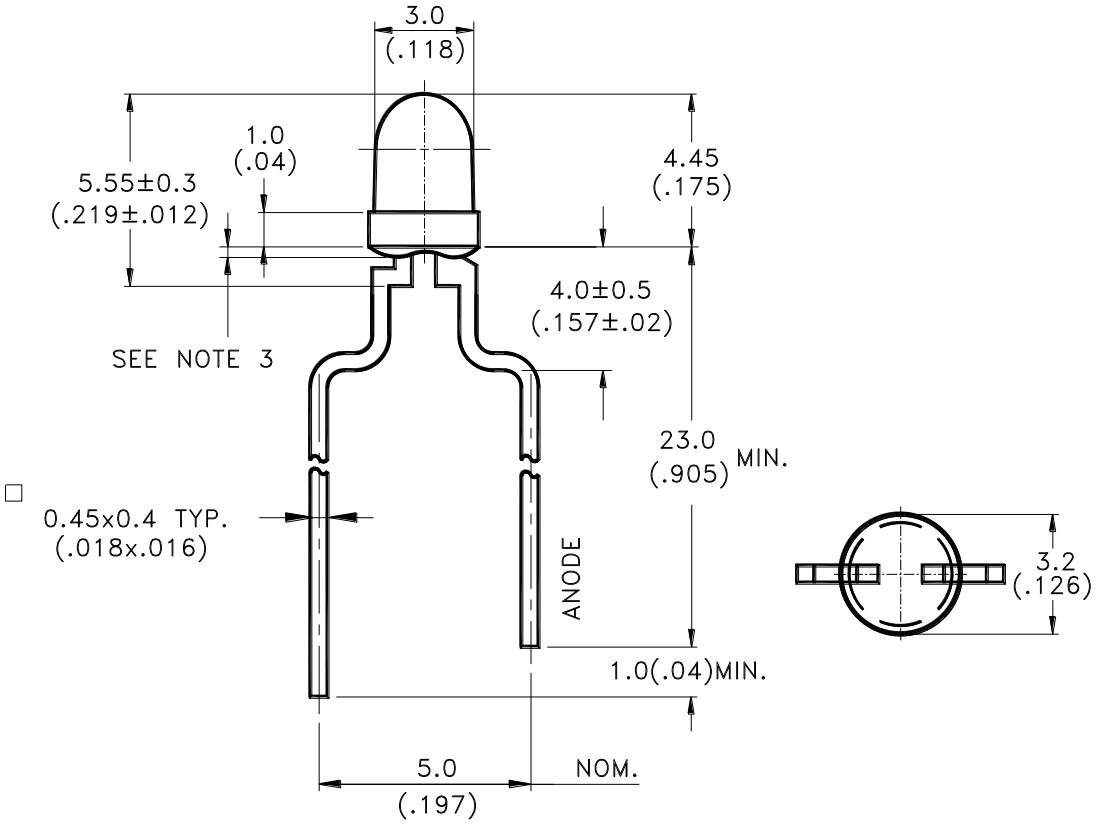
BNS-OD-FC001/A4

LITE-ON Technology Corp. / Optoelectronics
No.90,Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C.
Tel: 886-2-2222-6181 Fax: 886-2-2221-1948 / 886-2-2221-0660
http://www.liteon.com/opto

Features

* Lead (Pb) free product – RoHS compliant.
* Ultra brightness..
* Versatile mounting on p.c. board or panel.
* I.C. compatible/low current requirement..
* Reliable and rugged.

Package Dimensions



Part No.	Lens	Source Color
LTL-4262N-011A	Red Transparent	AlGaAs Red

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. Taping process, lead length of Cathode / Anode different 1.0 minimum or might be same length.
5. The LED lamp original is LTL-4262N.
6. Lead spacing is measured where the leads emerge from the package.
7. Specifications are subject to change without notice.

Absolute Maximum Ratings at T_A=25℃

Parameter	Maximum Rating	Unit
Power Dissipation	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	200	mA
Continuous Forward Current	40	mA
Derating Linear From 50℃	0.5	mA/℃
Reverse Voltage	4	V
Operating Temperature Range	-40℃ to + 100℃	
Storage Temperature Range	-55℃ to + 100℃	
Lead Soldering Temperature [2 mm(.0787") From Body]	260℃ for 5 Seconds Max.	

Electrical Optical Characteristics at T_A=25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I_V	19	60	150	mcd	I_F = 10mA Note 1,4
Viewing Angle	$2\theta_{1/2}$		45		deg	Note 2 (Fig.5)
Peak Emission Wavelength	λ_P		660		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ_d		638		nm	Note 3
Spectral Line Half-Width	$\Delta\lambda$		20		nm	
Forward Voltage	V_F		1.8	2.4	V	I_F = 20mA
Reverse Current	I_R			100	μA	V_R = 4V
Capacitance	C		30		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%.

Typical Electrical / Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

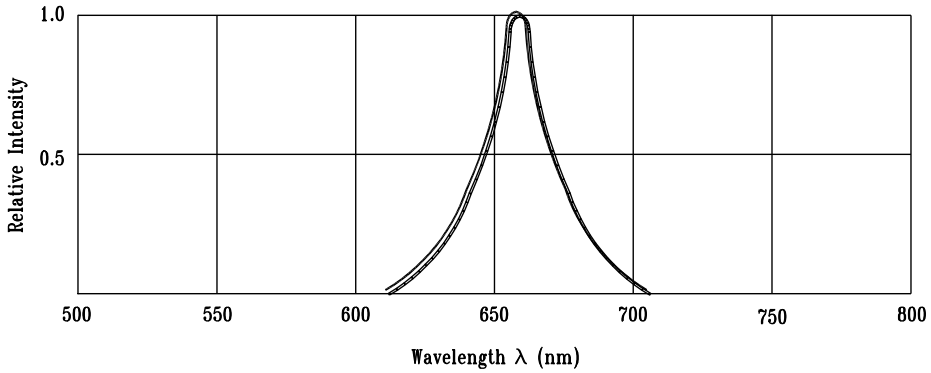


Fig.1 Relative Intensity vs. Wavelength

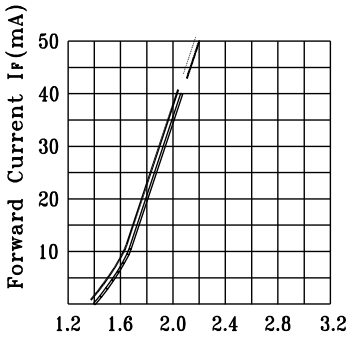


Fig.2 Forward Current vs. Forward Voltage

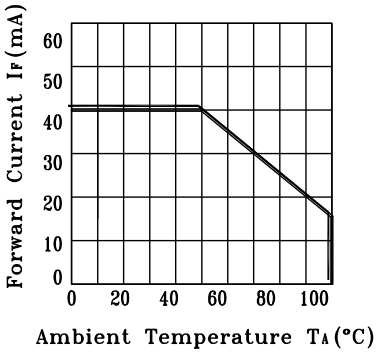


Fig.3 Forward Current Derating Curve

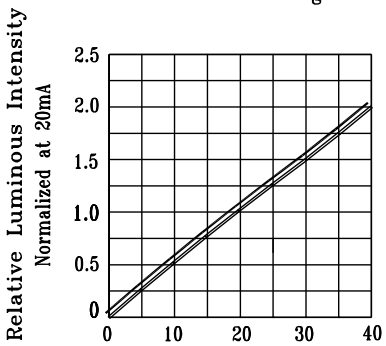


Fig.4 Relative Luminous Intensity vs. Forward Current

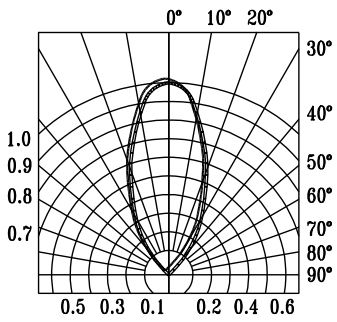
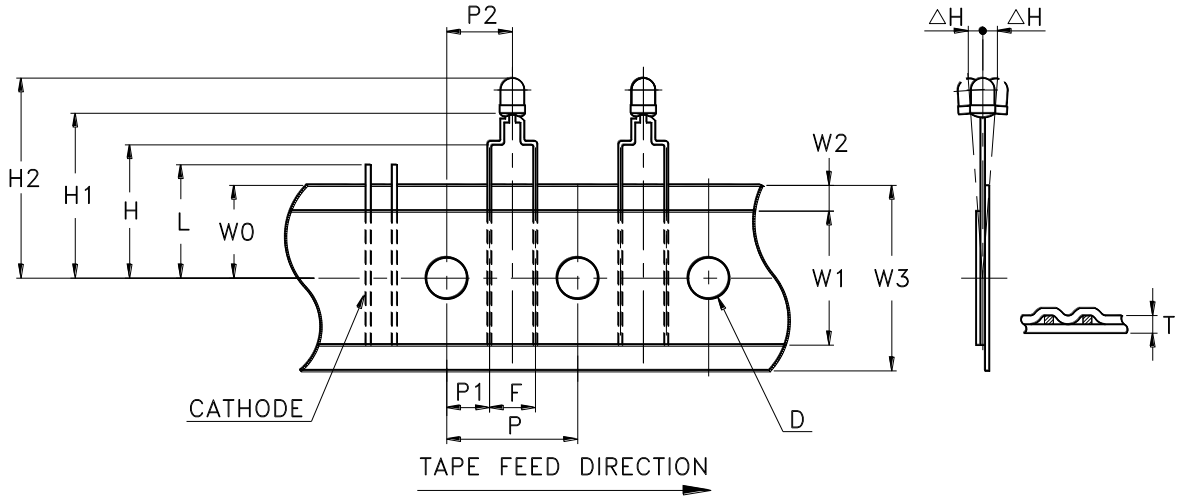


Fig.5 Spatial Distribution

Features

* Compatible with radial lead automatic insertion equipment.
* Most radial lead plastic lead lamps available packaged in tape and reel.
* 5mm (0.197") formed lead and 2.54mm (0.1") straight lead spacing available.
* Reel packaging simplifies handling and testing.

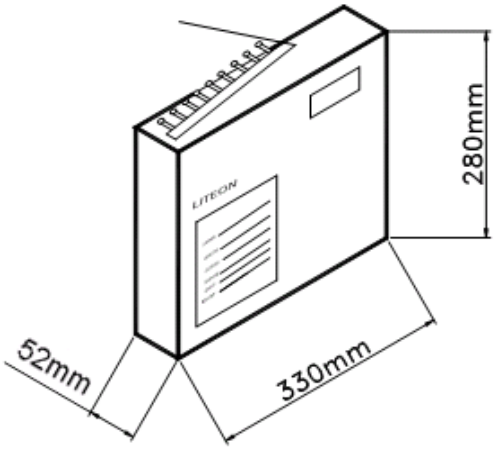
Package Dimensions



Item	Symbol	Specification			
		Minimum		Maximum	
		mm	inch	mm	inch
Tape Feed Hole Diameter	D	3.8	0.149	4.2	0.165
Component Lead Pitch	F	4.8	0.188	5.8	0.228
Front to Rear Deflection	△H	--	--	2.0	0.078
Height of Seating Plane	H	15.5	0.610	16.5	0.649
Feed Hole to Bottom of Component	H1	19.0	0.748	21.0	0.827
Feed Hole to Overall Component Height	H2	23.2	0.913	25.7	1.012
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	3.15	0.124	4.55	0.179
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

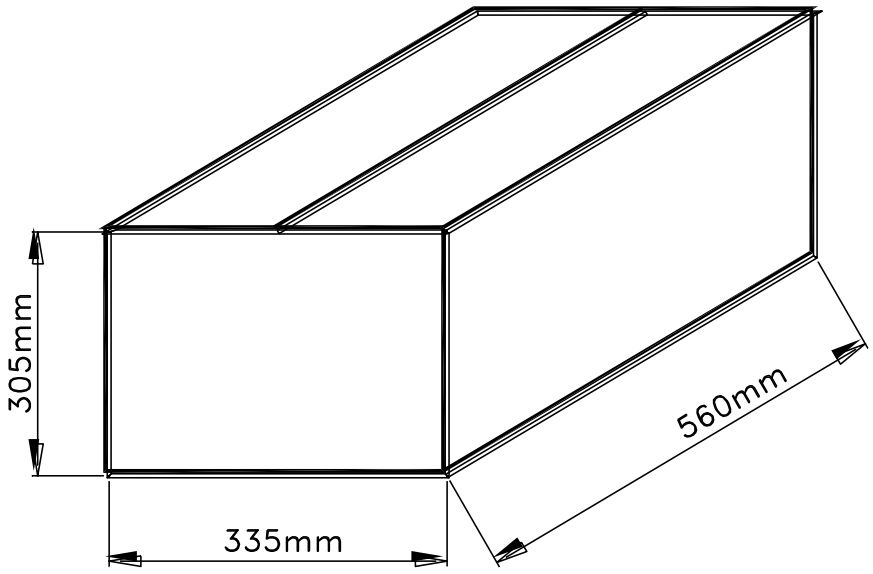
Packing Spec

3,000 pcs per inner carton



Tolerance: ±5mm

10 Inner cartons per outer carton
total 30,000 pcs per outer carton
In every shipping lot, only the last pack will be non-full packing



Bin Table Specification

Luminous Intensity Unit : mcd @10mA		
Bin Code	Min.	Max.
P5	19	29
P4	29	40
P3	40	60
P2	60	90
P1	90	150

Note: Tolerance of each bin limit is ±15%

CAUTIONS

1. Application

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

2. Storage

The storage ambient for the LEDs should not exceed 30°C temperature or 70% relative humidity.
It is recommended that LEDs out of their original packaging are used within three months.
For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.

3. Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LEDs if necessary.

4. Lead Forming & Assembly

During lead forming, the leads should be bent at a point at least 2mm from the base of LED lens.
Do not use the base of the lead frame as a fulcrum during forming.
Lead forming must be done before soldering, at normal temperature.
During assembly on PCB, use minimum clinch force possible to avoid excessive mechanical stress.

5. Soldering

When soldering, For Lamp without stopper type and must be leave a minimum of 2mm clearance from the base of the lens to the soldering point.
To avoided the Epoxy climb up on lead frame and was impact to non-soldering problem, Dipping the lens into the solder must be avoided.
Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering conditions :

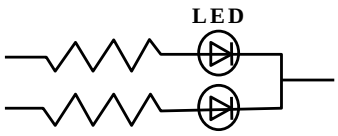
Soldering iron		Wave soldering	
Temperature Soldering time	350℃ Max. 3 sec. Max. (one time only)	Pre-heat Pre-heat time Solder wave Soldering time	100℃ Max. 60 sec. Max. 260℃ Max. 5 sec. Max.

Note: Excessive soldering temperature and/or time might result in deformation of the LED lens or catastrophic failure of the LED. IR reflow is not suitable process for through hole type LED lamp product.

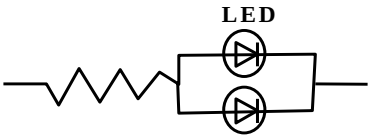
6. Drive Method

An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.

Circuit model A



Circuit model B



(A) Recommended circuit

(B) The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs

7. ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED.

Suggestions to prevent ESD damage:

- Use a conductive wrist band or anti- electrostatic glove when handling these LEDs
- All devices, equipment, and machinery must be properly grounded
- Work tables, storage racks, etc. should be properly grounded
- Use ion blower to neutralize the static charge which might have built up on surface of the LEDs plastic lens as a result of friction between LEDs during storage and handing

Suggested checking list :

Training and Certification

1. Everyone working in a static-safe area is ESD-certified?
2. Training records kept and re-certification dates monitored?

Static-Safe Workstation & Work Areas

1. Static-safe workstation or work-areas have ESD signs?
2. All surfaces and objects at all static-safe workstation and within 1 ft measure less than 100V?
3. All ionizer activated, positioned towards the units?
4. Each work surface mats grounding is good?

Personnel Grounding

1. Every person (including visitors) handling ESD sensitive (ESDS) items wear wrist strap, heel strap or conductive shoes with conductive flooring?
2. If conductive footwear used, conductive flooring also present where operator stand or walk?
3. Garments, hairs or anything closer than 1 ft to ESD items measure less than 100V*?
4. Every wrist strap or heel strap/conductive shoes checked daily and result recorded for all DLs?
5. All wrist strap or heel strap checkers calibration up to date?

   Note: *50V for Blue LED.

Device Handling

1. Every ESDS items identified by EIA-471 labels on item or packaging?
2. All ESDS items completely inside properly closed static-shielding containers when not at static-safe workstation?
3. No static charge generators (e.g. plastics) inside shielding containers with ESDS items?
4. All flexible conductive and dissipative package materials inspected before reuse or recycle?

Others

1. Audit result reported to entity ESD control coordinator?
2. Corrective action from previous audits completed?
3. Are audit records complete and on file?

8. Reliability Test

Classification	Test Item	Test Condition	Reference Standard
Endurance Test	Operation Life	Ta = under room temperature IF = per datasheet maximum drive current *Test time = 1000 hrs (-24Hrs, +72Hrs)	MIL-STD-750D:1026 (1995) MIL-STD-883G:1005 (2006)
	High Temperature High Humidity Storage	Ta= 65±5℃ RH= 90 ～ 95% Test time = 500hrs ± 2hrs.	MIL-STD-202G:103B (2002) JEITA ED-4701:100 103 (2001)
	High Temperature Storage	Ta = 105 ± 5 ℃ * Test time = 1000 hrs (-24Hrs, +72Hrs)	MIL-STD-750D:1031 (1995) MIL-STD-883G:1008 (2006) JEITA ED-4701:200 201 (2001)
	Low Temperature Storage	Ta= -55 ± 5 ℃ *Test time = 1000 hrs (-24Hrs, +72Hrs)	JEITA ED-4701: 200 202 (2001)
Environmental Test	Temperature Cycling	100℃ ~ 25℃ ~ -40℃ ~ 25℃ 30 mins 5 mins 30 mins 5 mins 50 cycles	MIL-STD-750D:1051 (1995) MIL-STD-883G:1010 (2006) JEITA ED-4701:100 105 (2001) JESD22-A104C (2005)
	Thermal Shock	100 ± 5 ℃ ~ -30 ± 5 ℃ 15 mins 15 mins 50 cycles （< 20 secs transfer）	MIL-STD-750D:1056 (1995) MIL-STD-883G:1011 (2006) MIL-STD-202G:107G (2002) JESD22-A106B (2004)
	Solder resistance (no pre-condition)	T.sol = 260℃ Max. Dwell time = 5 sec Max. 3mm from the base of the epoxy buib	MIL-STD-750D:2031 (1995) JEITA ED-4701: 300 302 (2001)
	Solderability (no pre-condition)	T.sol = 245 ± 5℃ Dwell time = 5 ± 0.5 sec	MIL-STD-750D:2026 (1995) MIL-STD-883G:2003 (2006) MIL-STD-202G:208H (2002) IPC/EIA J-STD-002 (2004)
	Soldering Iron (no pre-condition)	T.sol = 350 ± 5℃ Dwell time = 3.5 ± 0.5 sec	MIL-STD-202G:208H (2002) JEITA ED-4701: 300 302 (2001)

9. Others

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