LITEON®
OPTOELECTRONICS

Through Hole Lamp

Product Data Sheet

LTL30ECBKRJS-042A

Spec No.: DS20-2007-0070

Effective Date: 05/24/2012

Revision: A

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

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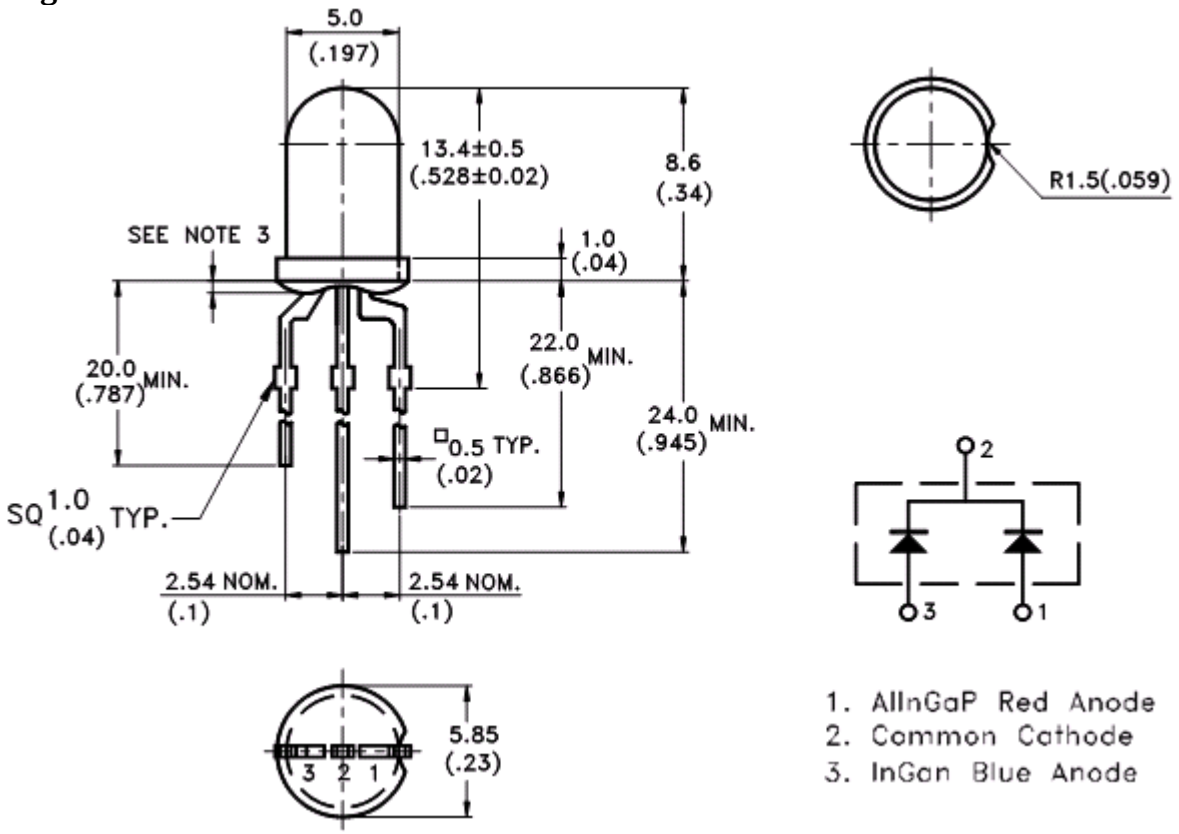
Features

* AllnGaP Red and InGan Blue chips are matched for uniform light output.
* T-1 3/4 type package.
* Long life-solid state reliability.
* Low power consumption.
* Pb Free and RoHS compliant

Package Dimensions



Part No.	Lens	Source Color
LTL30ECBKRJS-042A	White Diffused	AllnGaP Red /InGan Blue

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. Specification is subject to change without notice.

Absolute Maximum Ratings at T_A=25℃

Parameter	AllnGaP Red	InGan Blue	Unit
Power Dissipation	75	120	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	90	100	mA
Continuous Forward Current	30	30	mA
Derating Linear From 50℃ ,30 ℃	0.4	0.4	mA/℃
Operating Temperature Range	-55℃ to + 100℃		
Storage Temperature Range	-55℃ to + 100℃		
Lead Soldering Temperature [2.0 mm(.078") From Body]	260℃ for 5 Seconds		

Electrical Optical Characteristics at T_A=25°C

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Iv	Red Blue	180 180	310 310		mcd	I_F = 20mA I_F = 20mA Note 1,4
Viewing Angle	$2\theta_{1/2}$	Red Blue		25 25		deg	Note 2 (Fig.6)
Peak Emission	λp	Red Blue		639 468		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λd	Red Blue		631 470		nm	Note 3
Spectral Line Half-Width	Δλ	Red Blue		20 26		nm	
Forward Voltage	V_F	Red Blue		2.0 3.1	2.4 3.9	V	I_F = 20mA
Reverse Current	I_R	Red Blue			100	μA	V_R = 5V
Electrostatic Discharge Threshold	HBM				700	V	

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. θ1/2 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. The Iv guarantee should be added ±15%.
5. Reverse voltage (VR) condition is applied for IR test only. The device is not designed reverse operation

Typical Electrical / Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

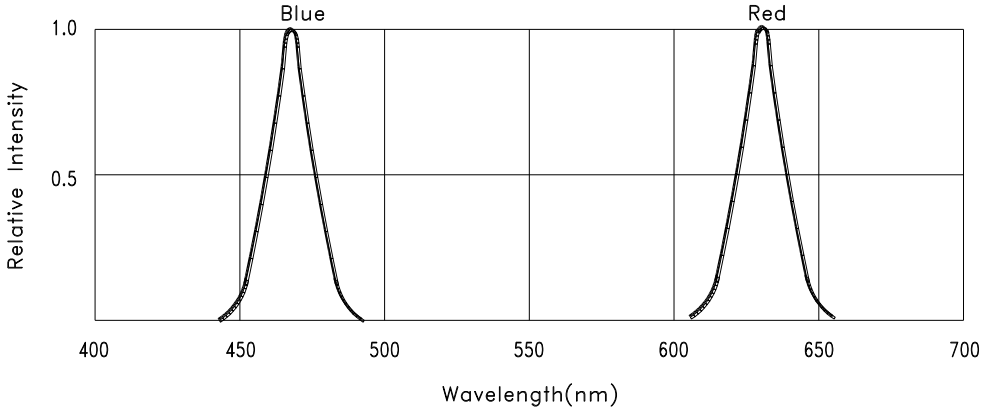


Fig.1 Relative Intensity vs. Wavelength

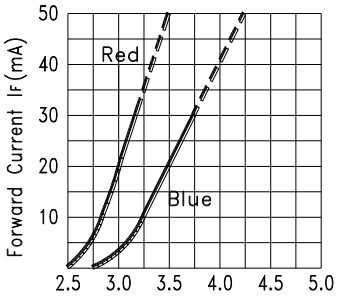


Fig.2 Forward Current vs. Forward Voltage

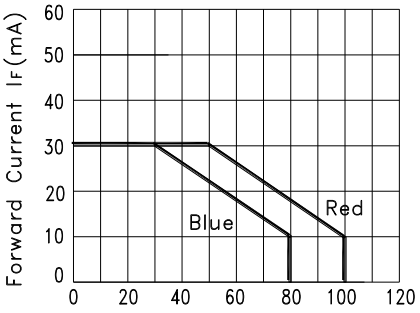


Fig.3 Forward Current Derating Curve

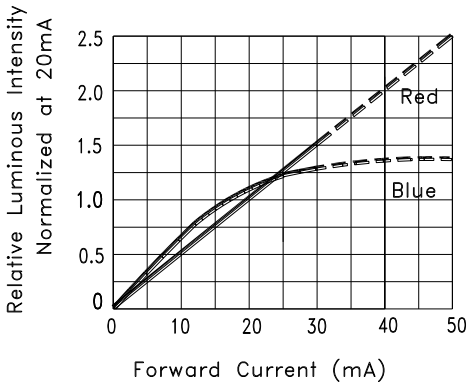


Fig.4 Relative Luminous Intensity vs. Forward Current

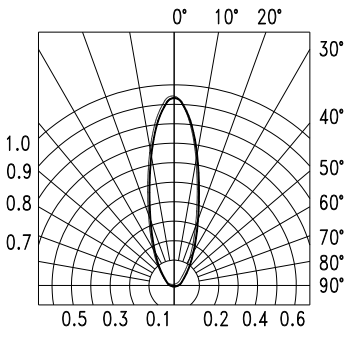


Fig.5 Spatial Distribution

Bin Table Specifications

Luminous Intensity AllnGaP Red Unit : mcd @20mA		
Bin Code	Min.	Max.
H	180	240
J	240	310
K	310	400
L	400	520

Luminous Intensity InGan Blue Unit : mcd @20mA		
Bin Code	Min.	Max.
H	180	240
J	240	310
K	310	400
L	400	520

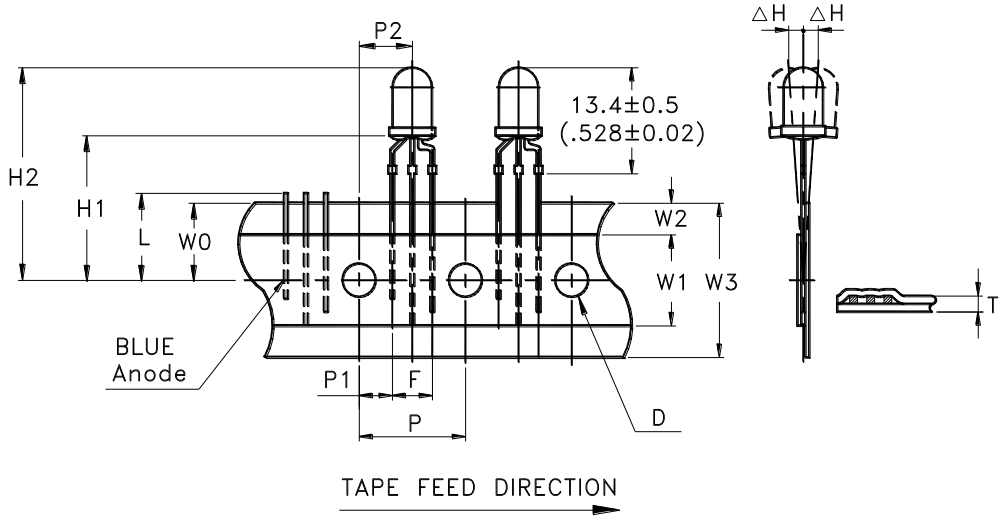
Note: Tolerance of each bin limit is ±15%

Bin Code : X-X (Luminous Intensity BLUE – Luminous Intensity RED)

Features

* Compatible with radial lead automatic insertion equipment.
* Most radial lead plastic lead lamps available packaged in tape and folding.
* 3 leads with 2.54mm (0.1") straight lead spacing available.
* Folding packaging simplifies handling and testing.

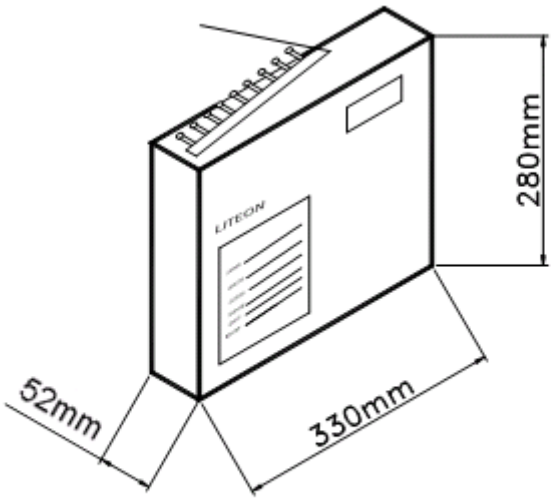
Package Dimensions



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	Δ H	--	--	2.0	0.078
Feed Hole to Bottom of Component	H1	17.8	0.700	20.3	0.799
Feed Hole to Overall Component Height	H2	26.1	1.027	29.2	1.150
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 Taped Thickness	T	--	--	0.90	0.035
Feed Hole Location	W0	8.5	0.334	9.75	0.384
Adhesive Tape Width	W1	12.5	0.492	13.5	0.531
Adhesive Tape Position	W2	0	0	3.0	0.118
Tape Width	W3	17.5	0.689	19.0	0.748

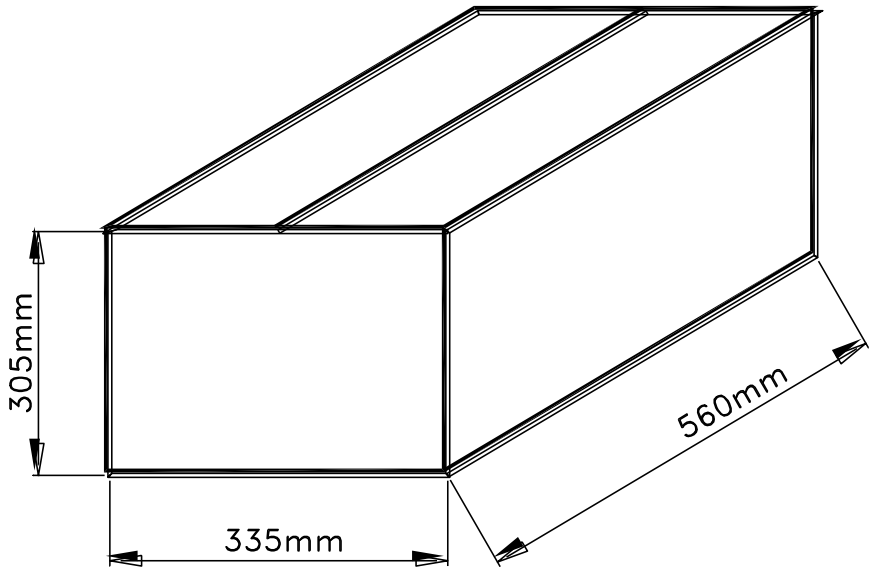
Packing Spec

2000 pcs per inner carton



Tolerance: ±5mm

10 Inner cartons per outer carton
total 20000 pcs per outer carton
In every shipping lot, only the last pack will be non-full packing



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℃ 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 a dessicator 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 3mm from the base of LEDlens.

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, leave a minimum of 2mm clearance from the base of the lens to the soldering point.
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 condition (for Lamp):

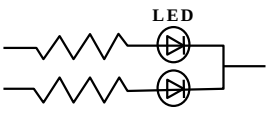
Soldering iron		Wave soldering	
Temperature	300℃ Max.	Pre-heat	100℃ Max.
Soldering time	3 sec. Max. (one time only)	Pre-heat time	60 sec. Max.
		Solder wave	260℃ Max.
		Soldering time	5 sec. Max.

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

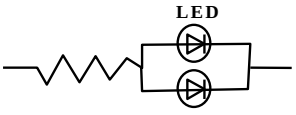
6. Drive Method

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

8. Reliability Test

Classification	Test Item	Test Condition	Reference Standard
Endurance Test	Operation Life	Ta= Under Room Temperature As Per Data Sheet Maximum Rating *Test Time= 1000HRS (-24HRS,+72HRS)	MIL-STD-750D:1026 (1995) MIL-STD-883D:1005 (1991) JIS C 7021:B-1 (1982)
	High Temperature High Humidity Storage	Ta= 65±5℃ RH= 90 ～ 95% Test Time= 240HRS±2HRS	MIL-STD-202F: 103B(1980) JIS C 7021 : B-11(1982)
	High Temperature High Humidity Reverse BIAS	Ta= 65±5℃ RH= 90 ～ 95% VR=5V Test Time = 500HRS (-24HRS, +48HRS)	JIS C 7021 : B-11(1982)
	High Temperature Storage	Ta= 105±5℃ *Test Time= 1000HRS (-24HRS,+72HRS)	MIL-STD-883D:1008 (1991) JIS C 7021:B-10 (1982)
	Low Temperature Storage	Ta= -55±5℃ *Test Time=1000HRS (-24HRS,+72HRS)	JIS C 7021:B-12 (1982)
Environmental Test	Temperature Cycling	105℃ ～ 25℃ ～ -55℃ ～ 25℃ 30mins 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)
	Thermal Shock	105 ± 5℃ ～ -55℃ ± 5℃ 10mins 10mins 10 Cycles	MIL-STD-202F:107D(1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1011 (1991)
	Solder Resistance	T.sol = 260 ± 5℃ Max. Dwell Time= 5 secs Max 3 times dip.	MIL-STD-202F:210A(1980) MIL-STD-750D:2031(1995) JIS C 7021: A-1(1982)
	Solderability	T. sol = 230 ± 5℃ Dwell Time= 5 ± 1secs	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 prior notice.