



# Through Hole Lamp Product Data Sheet

LTL1CHJXTNN

LTL2F7JXTNN

Spec No.: DS20-2000-246

Effective Date: 07/20/2000

Revision: A

**LITE-ON DCC**

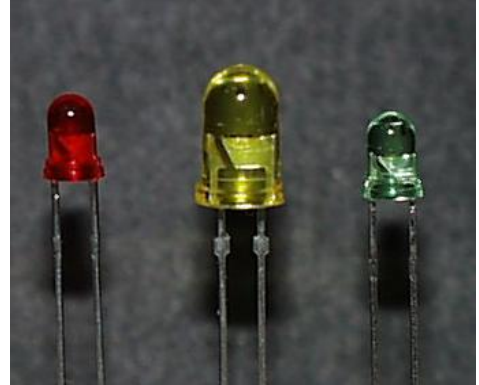
**RELEASE**

BNS-OD-FC001/A4

## General Purpose

LTL1CHJxTNN 45 degree

LTL2F7JxTNN 45 degree



### Features

- T-1(3mm) and T-1 3/4(5mm) General Purpose LED Lamps.
- Low Power Consumption.
- High Luminous Intensity Output.
- Tinted Lens Options.
- Variety Of Colors.
- High Efficiency.

### Description

This family 3mm and 5mm LED lamps are standard designed for applications requiring higher intensity level. The source color devices are made with Aluminum Indium Gallium Phosphide(AlInGaP) on Gallium Arsenide light emitting diode.

### Application

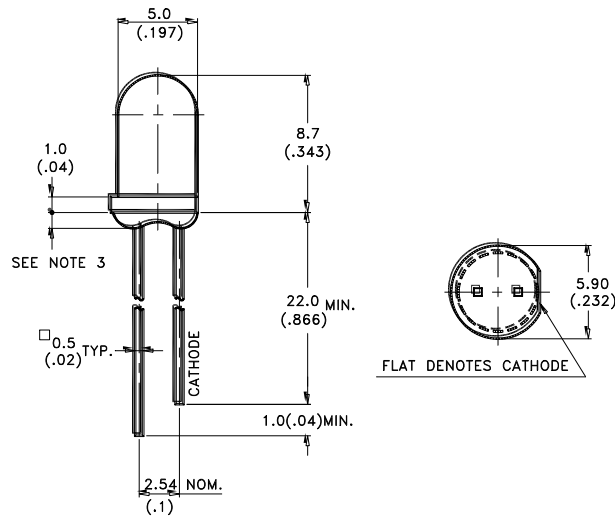
- General Purpose.
- Indicator Lights.

### Devices

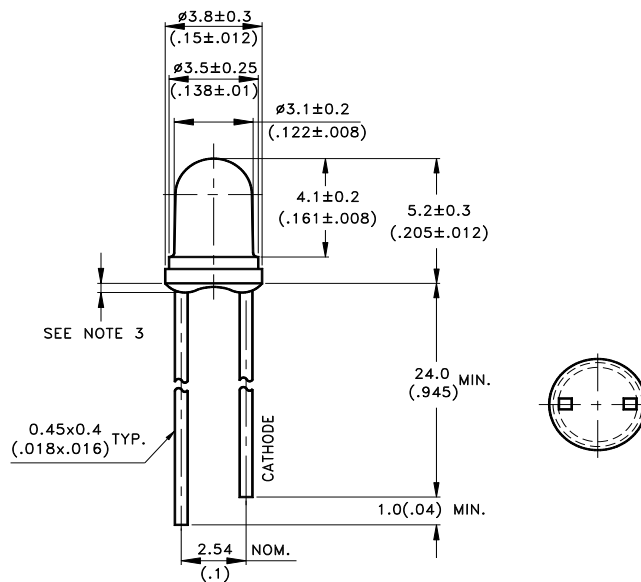
Part No. (LTL)	Lens	Source Color
1CHJDTNN / 2F7JDTNN	Red Transparent	AllnGap Hyper Red
1CHJRTNN / 2F7JRTNN	Red Transparent	AllnGap Super Red
1CHJETNN / 2F7JETNN	Red Transparent	AllnGap Red
1CHJFTNN / 2F7JFTNN	Amber Transparent	AllnGap Yellow Orange
1CHJYTNN / 2F7JYTNN	Yellow Transparent	AllnGap Amber Yellow
1CHJSTNN / 2F7JSTNN	Yellow Transparent	AllnGap Yellow
1CHJGTNN / 2F7JGTNN	Green Transparent	AllnGap Green

## Package Dimensions

### LTL2F7x Series



### LTL1CHx Series



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$ mm (.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	Hyper Red	Super Red	Red	Yellow Orange	Amber Yellow	Yellow	Green	Unit
Power Dissipation	75	75	75	75	75	75	75	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	90	90	90	60	60	60	60	mA
Continuous Forward Current	30	30	30	30	30	30	30	mA
Derating Linear From 70°C	0.4	0.4	0.4	0.4	0.4	0.4	0.4	mA / °C
Reverse Voltage (IR =100 $\mu$ A)	5	5	5	5	5	5	5	V
Operating Temperature Range	-40°C to + 100°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 (F Series)**

Parameter	Symbol	Part No. (LTL)	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I <sub>v</sub>	1CHJDTNN	65	120		mcd	I <sub>F</sub> = 20mA Note 1 Note 2
		1CHJRTNN	65	140			
		1CHJETNN	65	180			
		1CHJFTNN	65	180			
		1CHJYTNN	65	180			
		1CHJSTNN	65	180			
		1CHJGTNN	65	180			
Viewing Angle	2 θ <sub>1/2</sub>			45		deg	Note 3 (Fig.5)
Peak Emission Wavelength	λ <sub>P</sub>	1CHJDTNN		650		nm	Measurement @ peak (Fig.1)
		1CHJRTNN		639			
		1CHJETNN		632			
		1CHJFTNN		611			
		1CHJYTNN		595			
		1CHJSTNN		588			
		1CHJGTNN		575			
Dominant Wavelength	λ <sub>d</sub>	1CHJDTNN		639		Nm	Note 5
		1CHJRTNN		632			
		1CHJETNN		624			
		1CHJFTNN		605			
		1CHJYTNN		592			
		1CHJSTNN		587			
		1CHJGTNN		572			
Spectral Line Half-Width	Δλ	1CHJDTNN		20		Nm	
		1CHJRTNN		20			
		1CHJETNN		20			
		1CHJFTNN		17			
		1CHJYTNN		15			
		1CHJSTNN		15			
		1CHJGTNN		15			
Forward Voltage	V <sub>F</sub>	1CHJDTNN		2.0	2.4	V	I <sub>F</sub> = 20mA
		1CHJRTNN		2.0	2.3		
		1CHJETNN		2.05	2.4		
		1CHJFTNN		2.05	2.4		
		1CHJYTNN		2.05	2.4		
		1CHJSTNN		2.05	2.4		
		1CHJGTNN		2.05	2.4		
Reverse Current	I <sub>R</sub>				100	μA	V <sub>R</sub> = 5V
Capacitance	C			40		pF	V <sub>F</sub> = 0, f = 1 MHz

NOTES:

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- Luminous intensity rank classified products support two ranks.
- θ 1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- I<sub>v</sub> classification code is marked on each packing bag.
- The dominant wavelength, λ<sub>d</sub> is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.



## Electrical / Optical Characteristics at TA=25°C (H Series)

Parameter	Symbol	Part No. (LTL)	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I <sub>v</sub>	2F7JDTNN	65	120		mcd	I <sub>F</sub> = 20mA Note 1 Note 2
		2F7JRTNN	65	140			
		2F7JETNN	65	180			
		2F7JFTNN	65	180			
		2F7JYTNN	65	180			
		2F7JSTNN	65	180			
		2F7JGTNN	65	180			
Viewing Angle	2 θ <sub>1/2</sub>			45		deg	Note 3 (Fig.5)
Peak Emission Wavelength	λ <sub>P</sub>	2F7JDTNN		650		nm	Measurement @ peak (Fig.1)
		2F7JRTNN		639			
		2F7JETNN		632			
		2F7JFTNN		611			
		2F7JYTNN		595			
		2F7JSTNN		588			
		2F7JGTNN		575			
Dominant Wavelength	λ <sub>d</sub>	2F7JDTNN		639		nm	Note 5
		2F7JRTNN		632			
		2F7JETNN		624			
		2F7JFTNN		605			
		2F7JYTNN		592			
		2F7JSTNN		587			
		2F7JGTNN		572			
Spectral Line Half-Width	Δλ	2F7JDTNN		20		nm	
		2F7JRTNN		20			
		2F7JETNN		20			
		2F7JFTNN		17			
		2F7JYTNN		15			
		2F7JSTNN		15			
		2F7JGTNN		15			
Forward Voltage	V <sub>F</sub>	2F7JDTNN		2.0	2.4	V	I <sub>F</sub> = 20mA
		2F7JRTNN		2.0	2.3		
		2F7JETNN		2.05	2.4		
		2F7JFTNN		2.05	2.4		
		2F7JYTNN		2.05	2.4		
		2F7JSTNN		2.05	2.4		
		2F7JGTNN		2.05	2.4		
Reverse Current	I <sub>R</sub>				100	μA	V <sub>R</sub> = 5V
Capacitance	C			40		pF	V <sub>F</sub> = 0, f = 1 MHz

NOTES:

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- The dominant wavelength, λ<sub>d</sub> is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Property of Lite-On Only

## Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

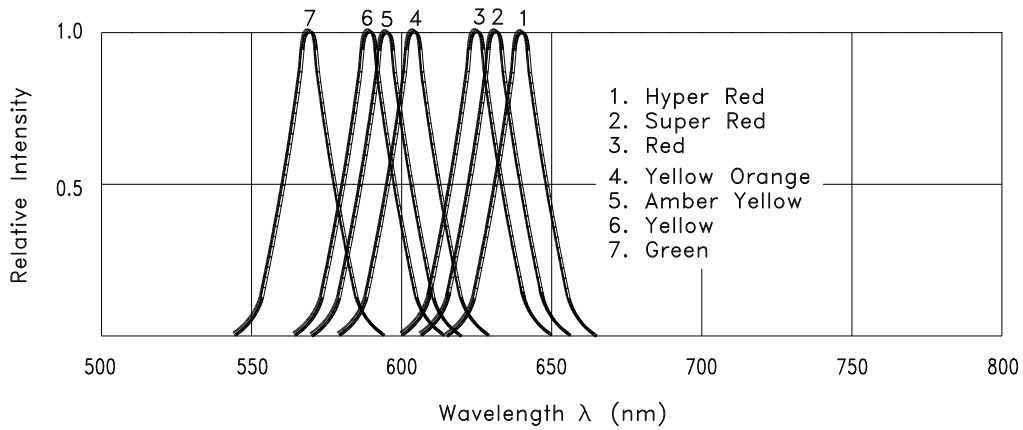


Fig.1 Relative Intensity vs. Wavelength

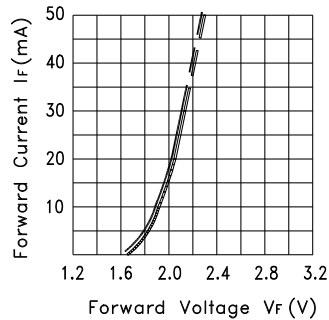


Fig.2 Forward Current vs. Forward Voltage

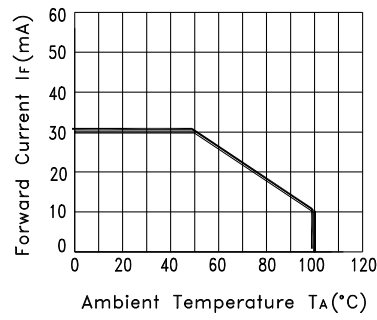


Fig.3 Forward Current Derating Curve

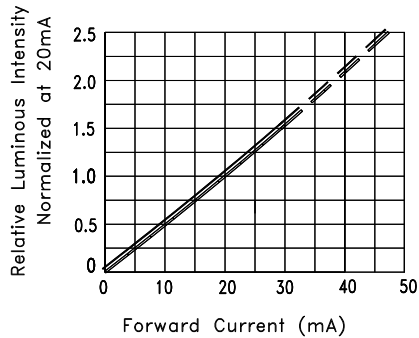


Fig.4 Relative Luminous Intensity vs. Forward Current

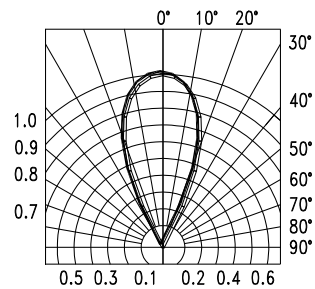


Fig.5 Spatial Distribution