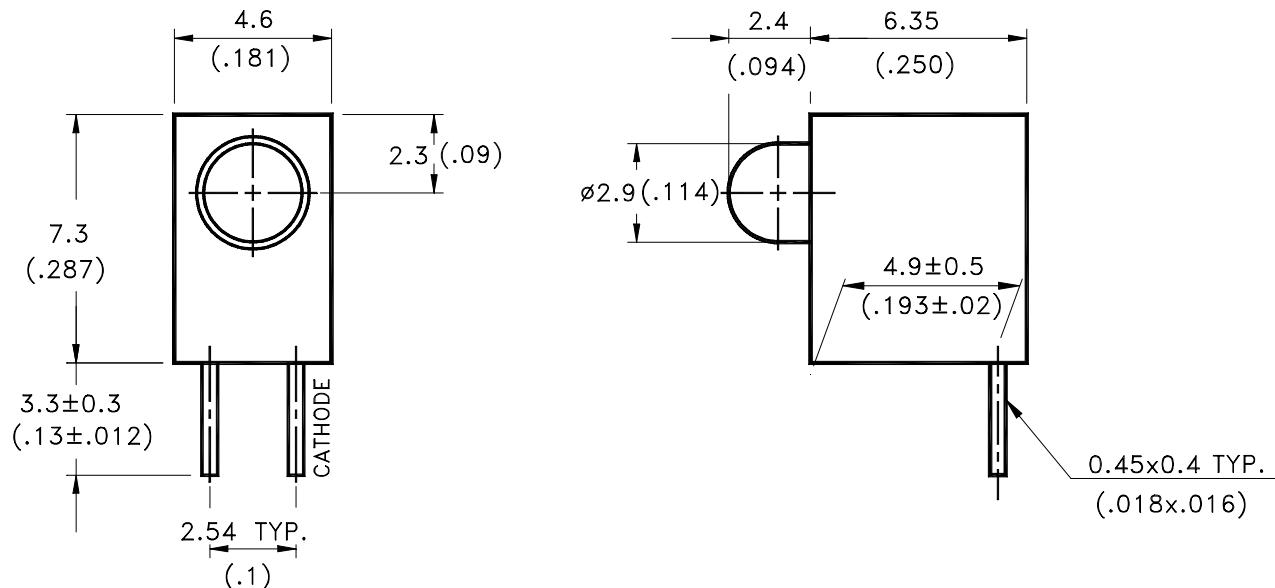


**Features**

- \* Designed for ease in circuit board assembly.
- \* Black case enhance contrast ratio.
- \* Solid state light source.
- \* Reliable and rugged.

**Package Dimensions**

Part No.	Lens	Source Color
LTL-4221N	Red Diffused	Hi.Eff.Red

**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm} (.010")$  unless otherwise noted.
3. The holder color is black.
4. The holder raw material is PBT.
5. The LED lamp is LTL-4221N.



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**Absolute Maximum Ratings at Ta=25°C**

Parameter	Maximum Rating	Unit
Power Dissipation	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	120	mA
Continuous Forward Current	30	mA
Derating Linear From 50°C	0.4	mA/°C
Reverse Voltage	5	V
Operating Temperature Range	-55°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	



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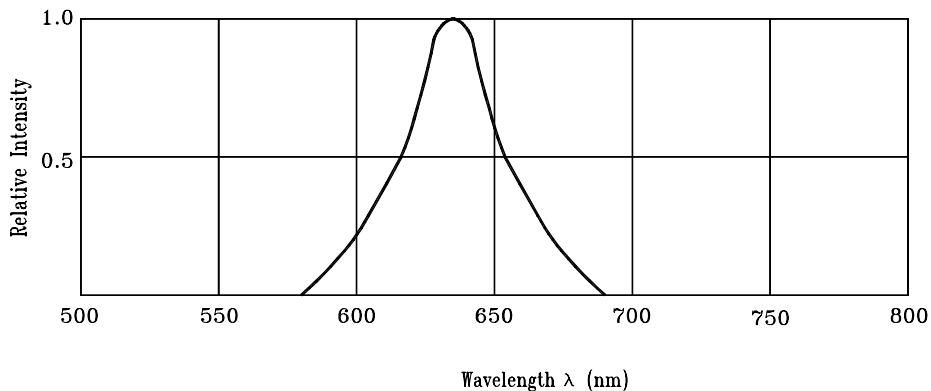
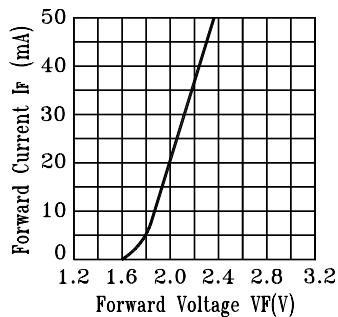
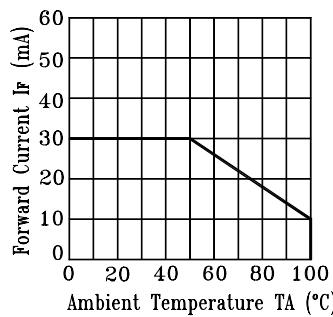
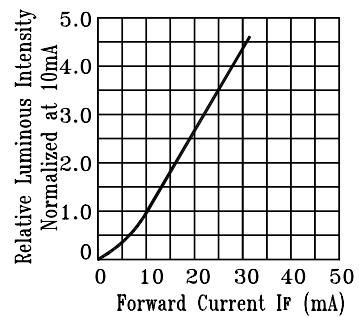
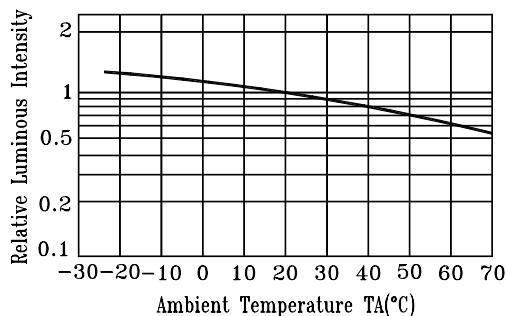
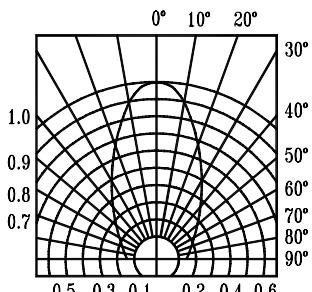
**Electrical Optical Characteristics at Ta=25°C**

Parameter	Symbol	Part No. LTL-	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I <sub>V</sub>	4221NHCP	2.5	8.7		mcd	I <sub>F</sub> = 10mA Note 1,4
Viewing Angle	2θ <sub>1/2</sub>	4221NHCP		60		deg	Note 2 (Fig.6)
Peak Emission Wavelength	λ <sub>P</sub>	4221NHCP		635		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ <sub>d</sub>	4221NHCP		623		nm	Note 3
Spectral Line Half-Width	Δλ	4221NHCP		40		nm	
Forward Voltage	V <sub>F</sub>	4221NHCP		2.0	2.6	V	I <sub>F</sub> = 20mA
Reverse Current	I <sub>R</sub>	4221NHCP			100	μA	V <sub>R</sub> = 5V
Capacitance	C	4221NHCP		20		PF	V <sub>F</sub> = 0, f = 1MHz

- Note: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. 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.
4. I<sub>V</sub> needs ± 15% additional for guaranteed limits.

**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** Luminous Intensity vs. Ambient Temperature**Fig.6** Spatial Distribution