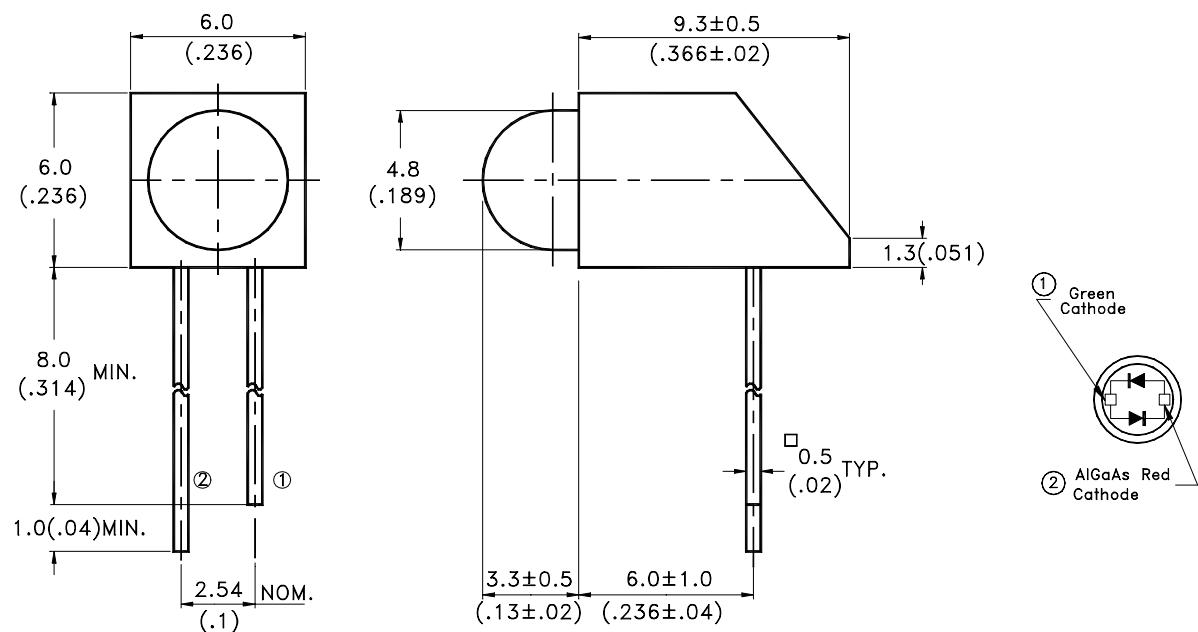


**Features**

- \* 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
LTL-		Color
313SJ	White Diffused	AlGaAs Red / Green

**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 PC.
5. The LED lamp is LTL-313SJ.



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

Parameter	Green	AlGaAs Red	Unit
Power Dissipation	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	120	200	mA
Continuous Forward Current	30	40	mA
Derating Linear From 50°C	0.4	0.5	mA/°C
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		

Electrical Optical Characteristics at  $T_a=25^\circ C$ 

Parameter	Symbol	LTL-313SJ	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	$I_V$	Green AlGaAs Red	4 11	13 38		mcd	$I_F = 20mA$ Note 1,4
Viewing Angle	$2\theta_{1/2}$	Green AlGaAs Red		60		deg	Note 2 (Fig.6)
Peak Emission Wavelength	$\lambda_p$	Green AlGaAs Red		565 660		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	$\lambda_d$	Green AlGaAs Red		569 638		nm	Note 3
Spectral Line Half-Width	$\Delta\lambda$	Green AlGaAs Red		30 20		nm	
Forward Voltage	$V_F$	Green AlGaAs Red		2.1 1.8	2.6 2.4	V	$I_F = 20mA$
Reverse Current	$I_R$	Green AlGaAs Red			100 100	$\mu A$	$V_R = 5V$ , Note 5 $V_R = 4V$ , Note 5
Capacitance	C	Green AlGaAs Red		35 30		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. The dominant wavelength,  $\lambda_d$  is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
  4.  $I_V$  needs  $\pm 15\%$  additional for guaranteed limits.
  5. Reverse current is controlled by dice source.

## Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

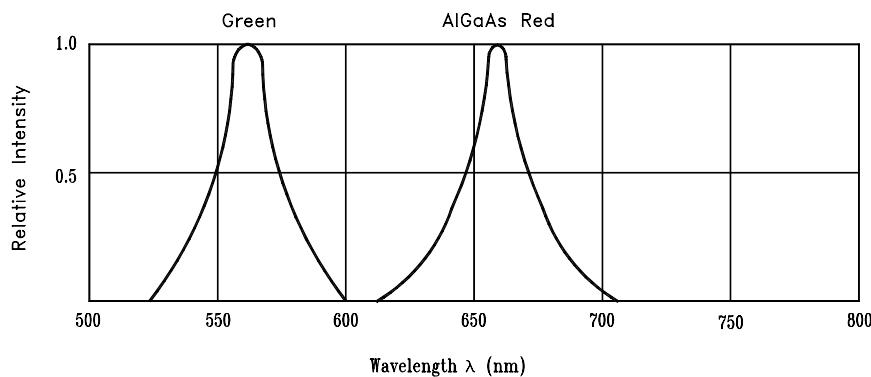


Fig.1 Relative Intensity vs. Wavelength

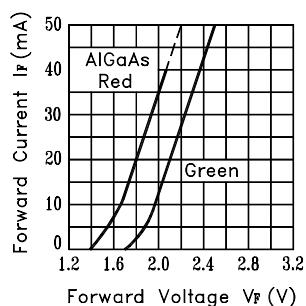


Fig.2 Forward Current vs. Forward Voltage

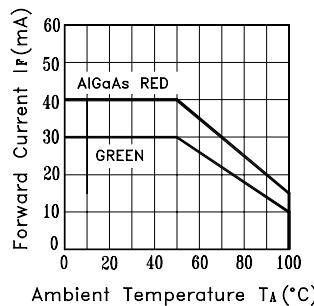


Fig.3 Forward Current Derating Curve

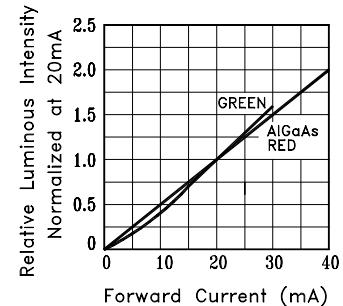


Fig.4 Relative Luminous Intensity vs. Forward Current

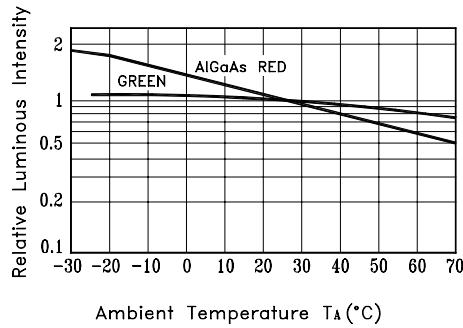


Fig.5 Luminous Intensity vs. Ambient Temperature

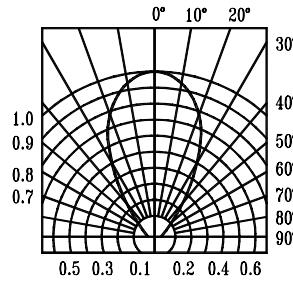


Fig.6 Spatial Distribution