



DUAL COLOR INDICATOR LAMP

LTL-293SJ CaAIAS RED-GREEN

T-41.25

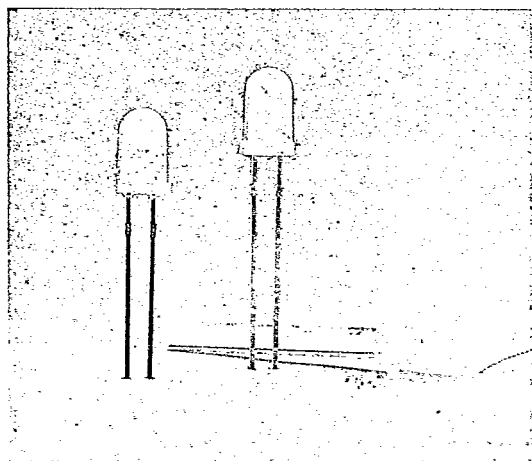
FEATURES

- ULTRA-BRIGHTNESS.
- T-1 1/4 TYPE PACKAGE.
- LONG LIFE-SOLID STATE RELIABILITY.
- LOW POWER CONSUMPTION.
- I.C. COMPATIBLE.

DESCRIPTION

The Red/Green LTL-293SJ bicolor lamp is white diffused, wide viewing angle, dual chips utilizing Gallium Aluminum Arsenide Ultra-brightness Red Light Emitting Diode and Gallium Phosphide on Gallium Phosphide Green Light Emitting Diode.

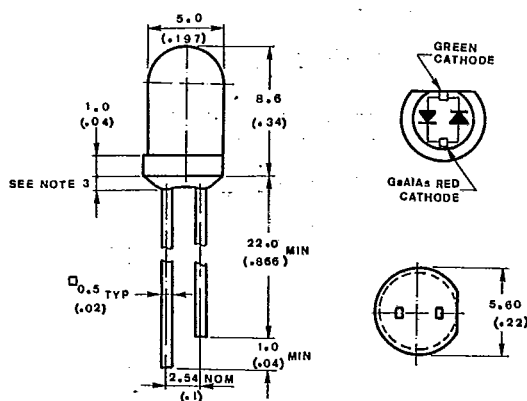
The Red and the Green operating dependently of each other.



DEVICES

PART NO. LTL-	LENS		SOURCE COLOR
	COLOR	DIFFUSION	
293SJ	White	Diffused	GaAlAs Red
			Green

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Protruded resin under flange is 1.5mm (.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

T-41-25

ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

PARAMETER	GREEN	GaAlAs 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 25°C	0.4	0.5	mA/ $^\circ\text{C}$
Reverse Voltage	5	4	V
Operating Temperature Range	-55°C to $+100^\circ\text{C}$		
Storage Temperature Range	-55°C to $+100^\circ\text{C}$		
Lead Soldering Temperature [1.6mm (0.063in) From Body]	260°C for 5 Seconds		

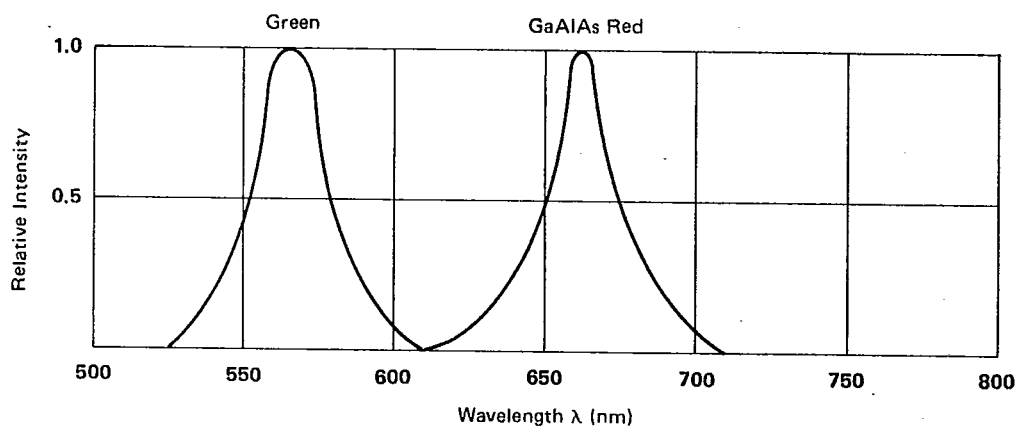


FIG. 1 RELATIVE INTENSITY VS. WAVELENGTH

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL-293SJ	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Luminous Intensity	I_v	GaAlAs Red Green	5.6 4.0	19.0 12.0		md	$I_F = 20\text{ mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	GaAlAs Red Green		80		deg.	Note 2 (Fig. 6)
Peak Emission Wavelength	λ_{PEAK}	GaAlAs Red Green		660 565		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$	GaAlAs Red Green		20 30		nm	
Forward Voltage	V_F	GaAlAs Red Green		1.8 2.1	2.4 2.8	V	$I_F = 20\text{ mA}$
Reverse Current	I_R	GaAlAs Red Green			100 100	μA	$V_R = 4\text{V}$ $V_R = 5\text{V}$
Capacitance	C	GaAlAs Red Green		30 35		PF	$V_F = 0$ $f = 1\text{ MHz}$

NOTES: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale 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.

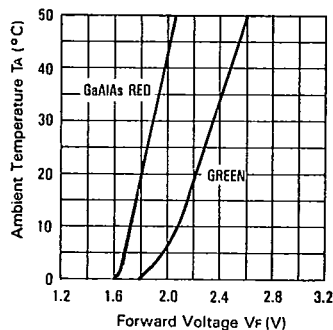


FIG. 2 FORWARD CURRENT VS. FORWARD VOLTAGE

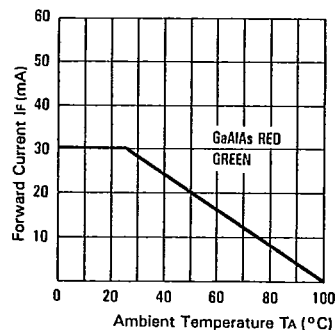


FIG. 3 FORWARD CURRENT DERATING CURVE

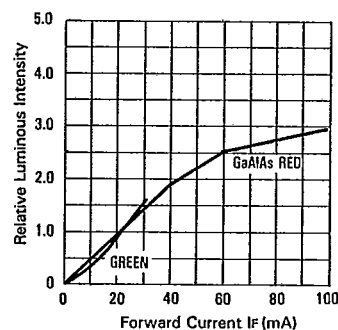
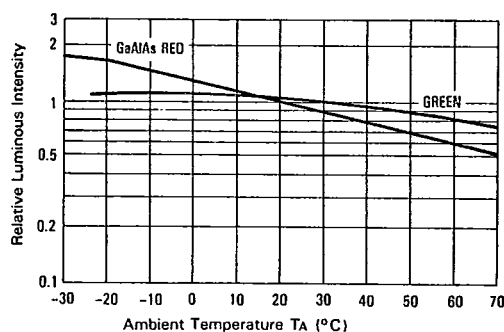
FIG. 4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT I_F (mA)

FIG. 5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

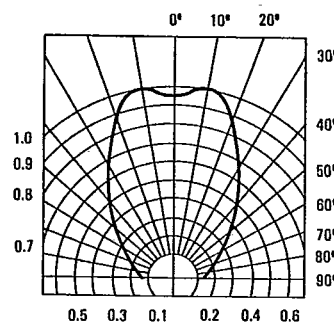


FIG. 6 SPATIAL DISTRIBUTION