

LITEON**0.8" (20mm) BIG LAMP****LTJ-811 HR/811G/811Y**

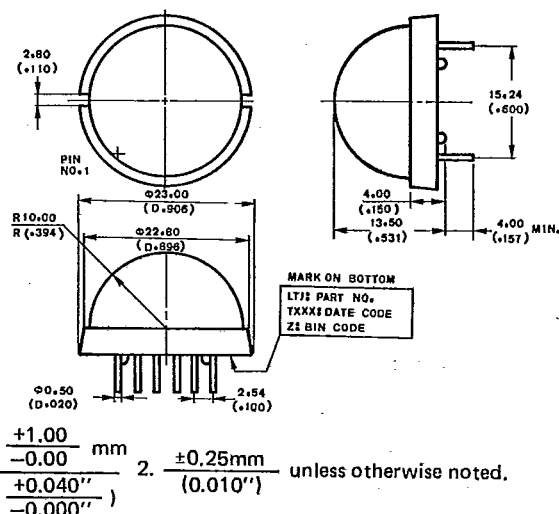
T-41-21

FEATURES

- 0.8 INCH (20.0mm) DIAMETER BIG LAMP.
- CHOICE OF THREE BRIGHT COLORS-GREEN/ YELLOW/HIGH EFFICIENCY RED.
- WIDE VIEWING ANGLE.
- GRAPHIC STACKING ALLOWABLE.
- HIGH LUMINOUS INTENSITY.
- LOW POWER REQUIREMENT.
- SOLID STATE RELIABILITY.
- CATEGORIZED FOR LUMINOUS INTENSITY.
- EXCELLENT ON-OFF CONTRAST.
- SUITABLE FOR MULTIPLEX OPERATION.
- EASY MOUNTING ON P.C. BOARD OR SOCKETS.

DESCRIPTION

The LTJ-811 series big lamp are sphere light sources designed for a variety of application where a large, bright source of light is required. The green series devices utilize LED chips which are made from GaP on a transparent GaP substrate. The yellow and high efficiency red series devices utilize LED chips which are made from GaAsP on a transparent GaP substrate. The green devices have green diffused lens color. The yellow devices have yellow diffused lens color. The high efficiency red devices have red diffused lens color.

PACKAGE DIMENSIONS

NOTE: All dimensions are in $\frac{\text{millimeters}}{(\text{inches})}$ tolerance are:

- Lead length (from seating plane): minimum value $\frac{+1.00}{-0.00} \text{ mm}$ ($\frac{+0.040}{-0.000} \text{ inch}$)
- $\pm 0.25 \text{ mm}$ (0.010") unless otherwise noted.

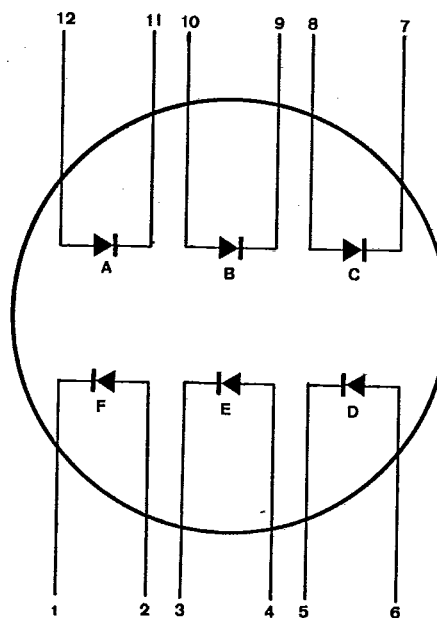
DEVICES

PART NO. LTJ-			DESCRIPTION
GREEN	YELLOW	HI-EFF. RED	
811G	811Y	811HR	Universal, Sphere Lens

PIN CONNECTION

PIN NO.	CONNECTION
1	Cathode F
2	Anode F
3	Cathode E
4	Anode E
5	Cathode D
6	Anode D
7	Cathode C
8	Anode C
9	Cathode B
10	Anode B
11	Cathode A
12	Anode A

INTERNAL CIRCUIT DIAGRAM

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

PARAMETER	GREEN	YELLOW	HI.-EFF. RED	UNIT
Power Dissipation Per Chip	75	60	75	mW
Peak Forward Current Per Chip (1/10 Duty Cycle, 0.1ms Pulse Width)	100	80	100	mA
Continuous Forward Current Per Chip	25	20	25	mA
Derating Linear From 25°C Per Chip	0.3	0.24	0.3	mA/°C
Reverse Voltage Per Chip	5	5	5	V
Operating Temperature Range	-25°C to +85°C			
Storage Temperature Range	-25°C to +85°C			
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260°C				



T-41-21

**ELECTRICAL/OPTICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$
LTJ-811Y**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Lamp	I_V	11	25		mcd	$I_F = 60\text{ mA}$
Peak Emission Wavelength Per Lamp	λ_P		585		nm	$I_F = 120\text{ mA}$
Spectral Line Half-Width Per Lamp	$\Delta\lambda$		35		nm	$I_F = 120\text{ mA}$
Forward Voltage any Chip	V_F		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	I_R			100	μA	$V_R = 5\text{V}$

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

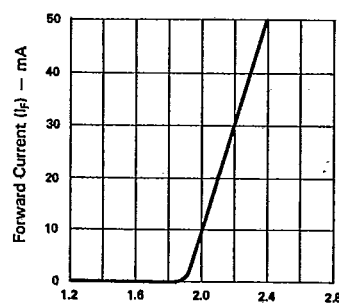


Fig. 1 FORWARD CURRENT VS. FORWARD VOLTAGE.

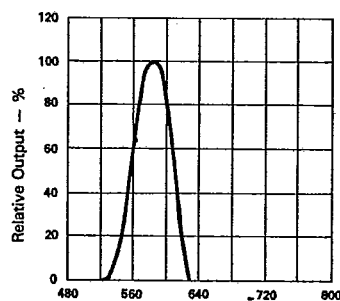


Fig. 2 SPECTRAL RESPONSE.

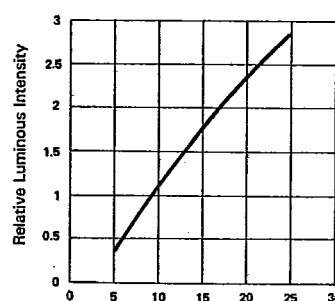


Fig. 3 RELATIVE, LUMINOUS INTENSITY VS. FORWARD CURRENT (PER SEGMENT).

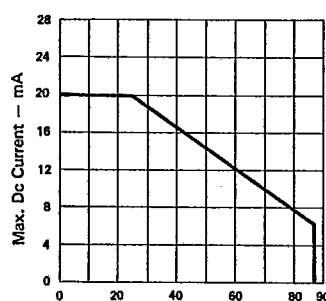


Fig. 4 MAX. ALLOWABLE DC CURRENT PER SEG. VS AMBIENT TEMPERATURE.

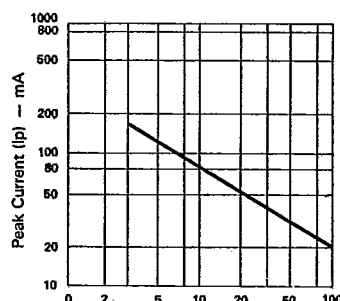


Fig. 5 MAX. PEAK CURRENT VS. DUTY CYCLE. (REFRESH RATE - $F = 1\text{ KHz}$)

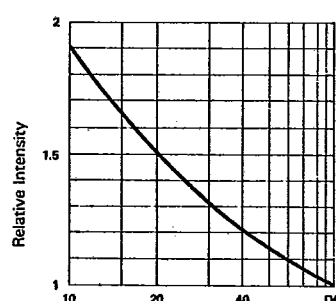


Fig. 6 LUMINOUS INTENSITY VS. DUTY CYCLE% (AVERAGE $I_F = 10\text{ mA PER SEG.}$)

T-41-21

ELECTRICAL/OPTICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$ LTJ-811G

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Lamp	I_v	11	25		mcd	$I_F = 60\text{ mA}$
Peak Emission Wavelength Per Lamp	λ_P		565		nm	$I_F = 120\text{ mA}$
Spectral Line Half-Width Per Lamp	$\Delta\lambda$		30		nm	$I_F = 120\text{ mA}$
Forward Voltage any Chip	V_F		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	I_R			100	μA	$V_R = 5\text{ V}$

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

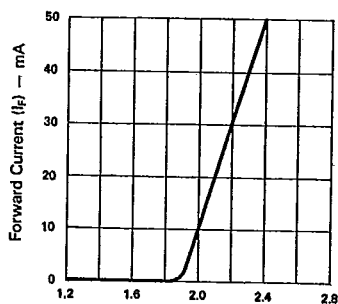


Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE.

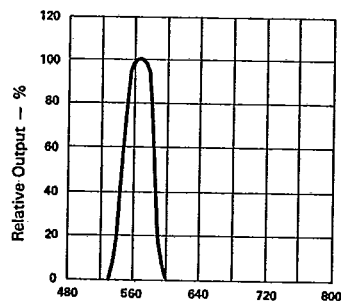


Fig. 2 SPECTRAL RESPONSE.

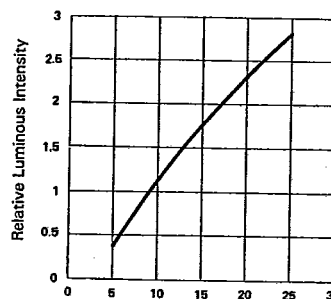


Fig. 3 RELATIVE, LUMINOUS INTENSITY Vs. FORWARD CURRENT (PER SEGMENT).

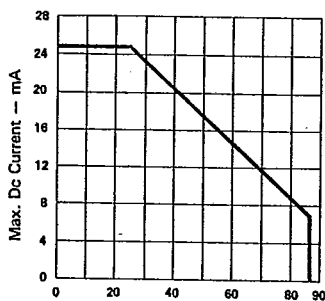


Fig. 4 MAX. ALLOWABLE DC CURRENT PER SEG. Vs AMBIENT TEMPERATURE.

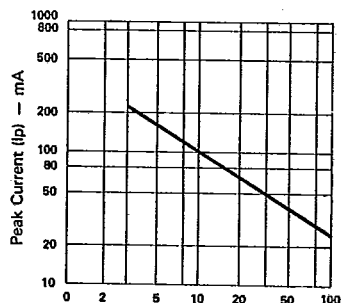


Fig. 5 MAX. PEAK CURRENT Vs. DUTY CYCLE. (REFRESH RATE - $F = 1\text{ KHz}$)

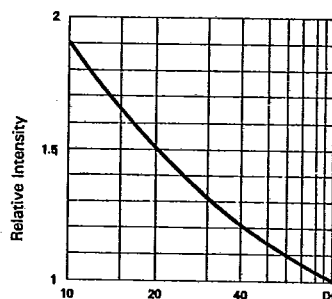


Fig. 6 LUMINOUS INTENSITY Vs. DUTY CYCLE. (AVERAGE $I_F = 10\text{ mA}$ PER SEG.)



ELECTRICAL/OPTICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$ LJT-811HR

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Lamp	I_v	11	25		mcd	$I_F = 60\text{ mA}$
Peak Emission Wavelength Per Lamp	λ_P		685		nm	$I_F = 120\text{ mA}$
Spectral Line Half-Width Per Lamp	$\Delta\lambda$		35		nm	$I_F = 120\text{ mA}$
Forward Voltage any Chip	V_F		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	I_R			100	μA	$V_R = 5\text{ V}$

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

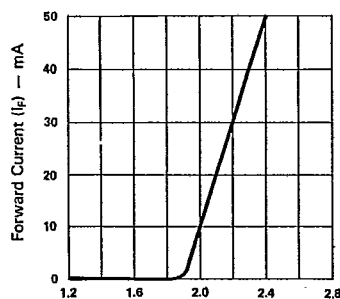


Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE.

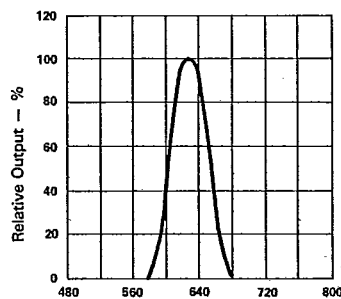


Fig. 2 SPECTRAL RESPONSE.

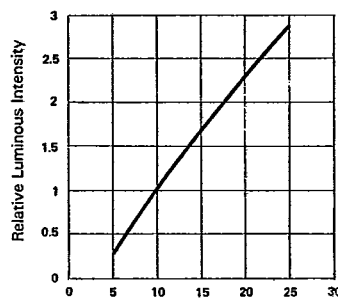


Fig. 3 RELATIVE, LUMINOUS INTENSITY Vs. FORWARD CURRENT (PER SEGMENT).

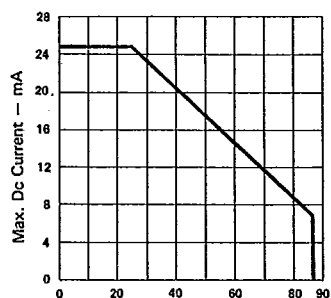


Fig. 4 MAX. ALLOWABLE DC CURRENT PER SEG. Vs AMBIENT TEMPERATURE.

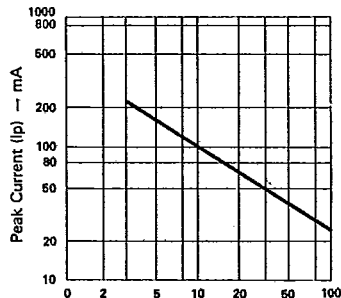


Fig. 5 MAX. PEAK CURRENT Vs. DUTY CYCLE.% (REFRESH RATE - $F = 1\text{ KHz}$)

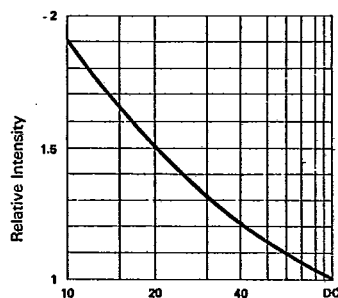


Fig. 6 LUMINOUS INTENSITY Vs. DUTY CYCLE% (AVERAGE $I_F = 10\text{ mA PER SEG.}$)