

TOSHIBA LED LAMP InGaAlP RED LIGHT EMISSION

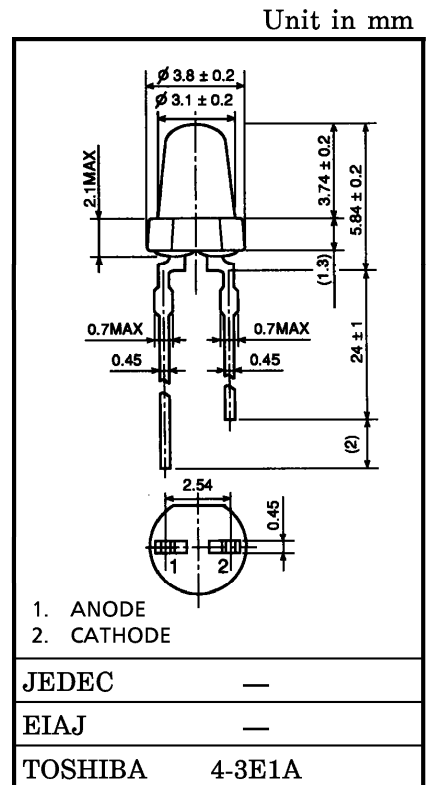
# TLRE160A

PANEL CIRCUIT INDICATOR

- 3.1 mm DIAMETER (T1)
- InGaAlP RED LED
- All Plastic Mold Type.
- Colorless Clear Lens
- Low Drive Current, High Intensity Red Light Emission  
Recommended Forward Current :  $I_F = 15 \sim 20$  mA (DC)
- All Plastic Molded Lens, Provides an Excellent ON-OFF Contrast Ratio.
- Fast Response Time, Capable of Pulse Operation.
- High Power Luminous Intensity
- APPLICATIONS : Suitable for Safety equipment.  
Outdoor displays.

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current (DC)	$I_F$	50	mA
Reverse Voltage	$V_R$	4	V
Power Dissipation	$P_D$	125	mW
Operating Temperature Range	$T_{opr}$	-30~85	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40~120	$^\circ\text{C}$



Weight : 0.14 g

ELECTRICAL AND OPTICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Forward Voltage	$V_F$	$I_F = 20$ mA	—	1.85	2.4	V
Reverse Current	$I_R$	$V_R = 4$ V	—	—	50	$\mu\text{A}$
Luminous Intensity	$I_V$	$I_F = 20$ mA (Note)	476	1200	—	mcd
			476	—	2300	
Peak Emission Wavelength	$\lambda_p$	$I_F = 20$ mA	—	644	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20$ mA	—	18	—	nm
Dominant Wavelength	$\lambda_d$	$I_F = 20$ mA	—	630	—	nm

(Note) : Lamps are classified into the following ranks according to their luminous intensity.  
Measurement tolerance for each limit is  $\pm 15\%$ .  
R : 560-1120 mcd, S : 1000-2000 mcd, T : 1800-3600 mcd.

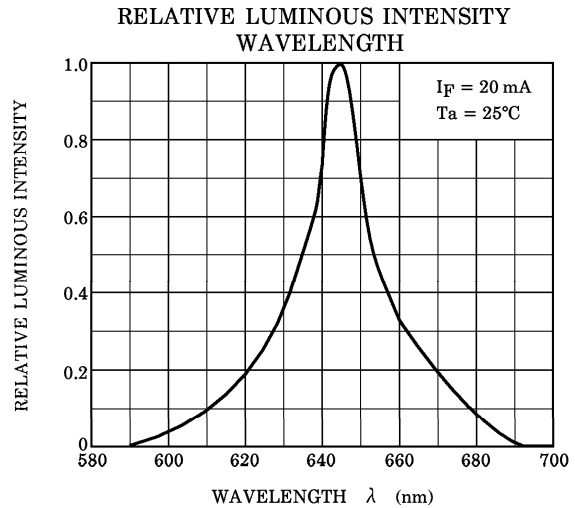
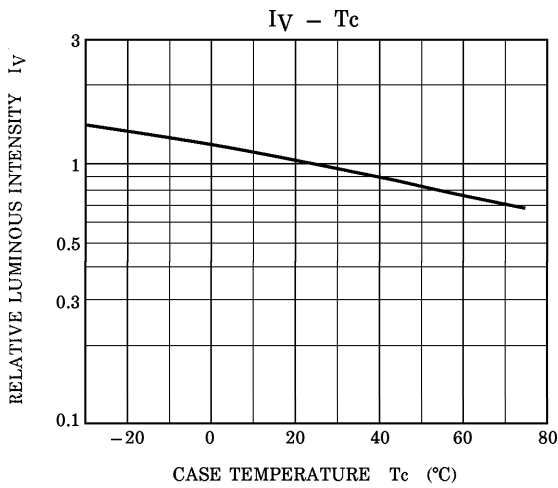
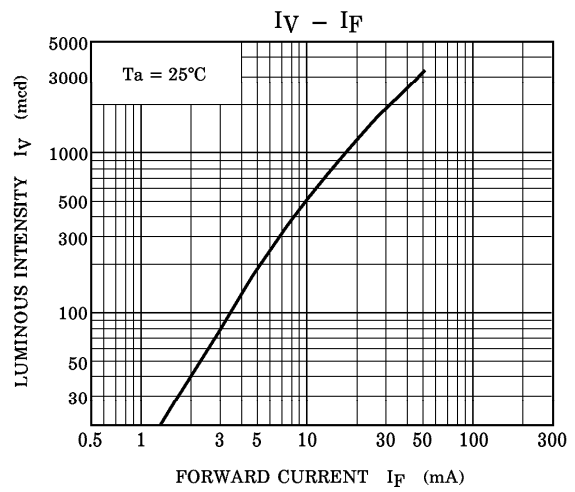
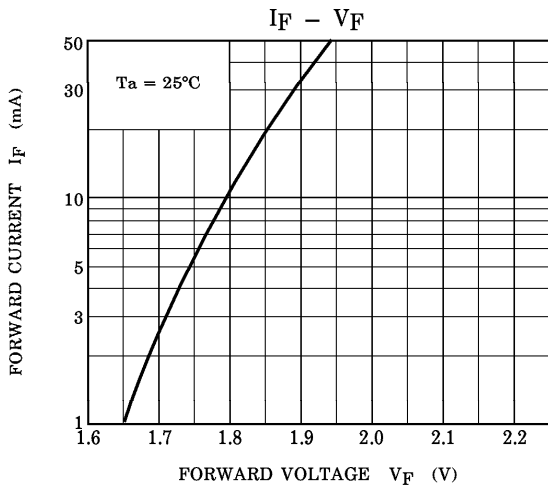
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**PRECAUTION**

Please be careful of the followings

- Soldering temperature : 260°C max      Soldering time : 3 s max  
(Soldering portion of lead : up to 2 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 5 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.
- This visible LED lamp also emits some IR light. If a photodetector is located near the LED lamp, please ensure that it will not be affected by this IR light.



RADIATION PATTERN

