

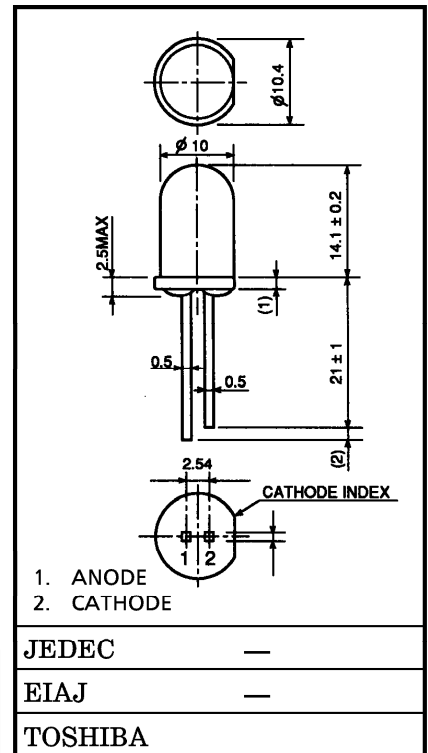
TOSHIBA LED LAMP InGaAlP RED LIGHT EMISSION

TLRH190P

PANEL CIRCUIT INDICATOR

- 10 mm DIAMETER
- InGaAlP RED LED
- All Plastic Mold Type.
- Colorless Clear Lens
- Low Drive Current, High Intensity Red Light Emission
Recommended Forward Current : $I_F = 1\sim 20$ mA (DC)
- All Plastic Molded Lens, Provides an Excellent ON-OFF Contrast Ratio.
- Fast Response Time, Capable of Pulse Operation.
- High Power Luminous Intensity
- Without Stand-offs
- APPLICATIONS : Suitable for Outdoor Message Signboard, Safety equipment.

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 1.0 g

MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature Range	T_{stg}	-40~120	°C

ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Forward Voltage	V_F	$I_F = 20$ mA	—	1.9	2.5	V
Reverse Current	I_R	$V_R = 4$ V	—	—	50	μA
Luminous Intensity	I_V	$I_F = 20$ mA (Note)	4760	19000	—	mcd
			8500	—	41400	
Peak Emission Wavelength	λ_p	$I_F = 20$ mA	—	644	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20$ mA	—	18	—	nm
Dominant Wavelength	λ_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 ±15%.
V : 5600-11200 mcd, W : 10000-20000 mcd, X : 18000-36000 mcd.

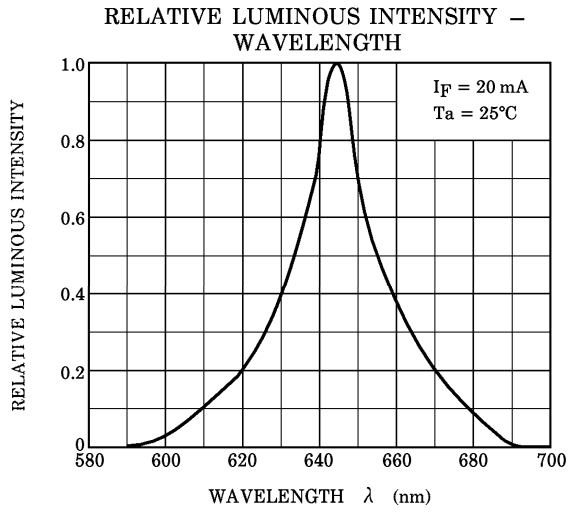
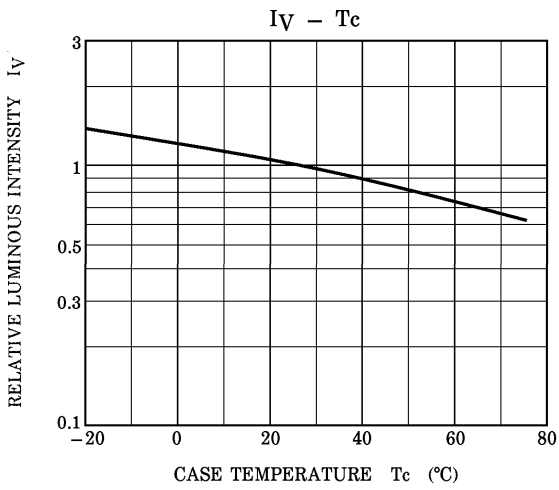
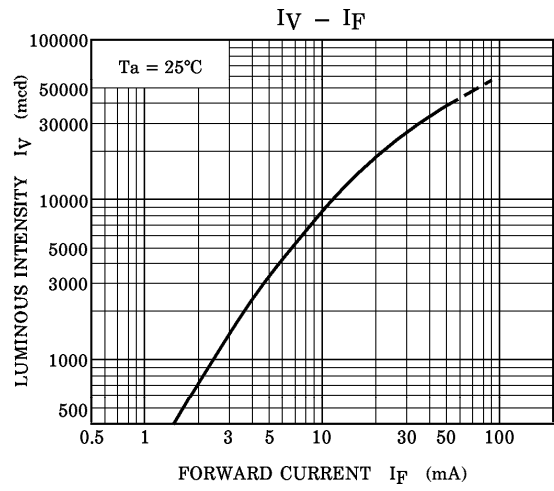
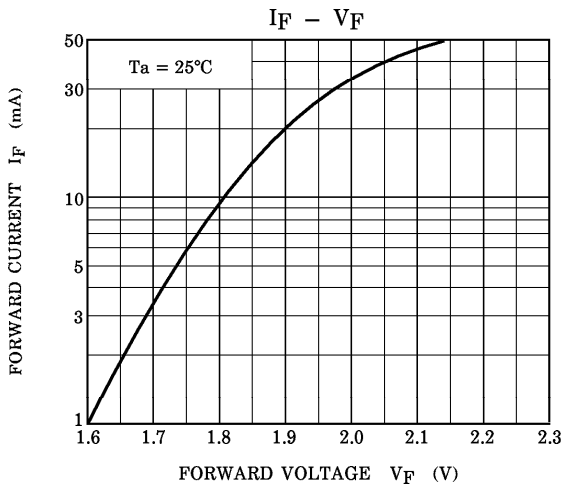
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PRECAUTION

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

