

**TENTATIVE**

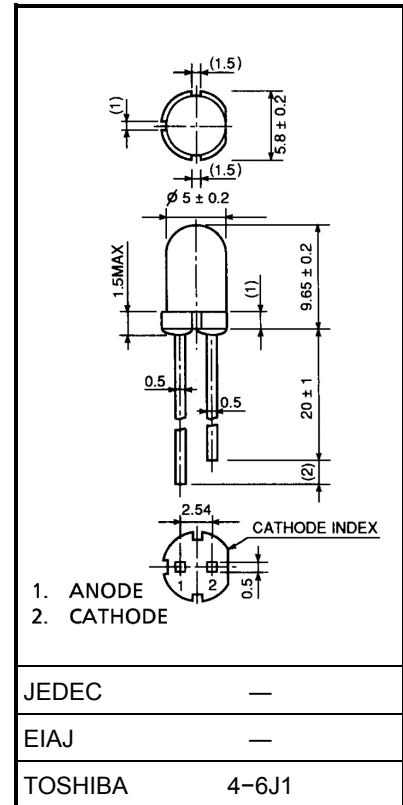
TOSHIBA LED Lamp InGaAlP Red Light Emission

# TLSE180P

## Panel Circuit Indicator

- 5 mm diameter (T1-3/4)
- 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
- Without stand-offs
- Applications: Suitable for outdoor message signboard, safety equipment. Automatic use.

Unit in mm



Weight: 0.31 g

## Maximum Ratings (T = 25°C)

Characteristic	Symbol	Rating	Unit
Forward current (DC)	$I_F$	50	mA
Reverse voltage	$V_R$	4	V
Power dissipation	$P_D$	120	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		1.95	2.4	V
Reverse current	$I_R$	$V_R = 4$ V	—	—	50	μA
Luminous intensity	$I_V$	$I_F = 20$ mA	1530	8000	—	mcd
Peak emission wavelength	$\lambda_P$	$I_F = 20$ mA	—	623	—	nm
Spectral line half width	$\Delta\lambda$	$I_F = 20$ mA	—	15	—	nm
Dominant wavelength	$\lambda_d$	$I_F = 20$ mA	—	613	—	nm

(Note): Lamps are classified into the following ranks according to their luminous intensity.

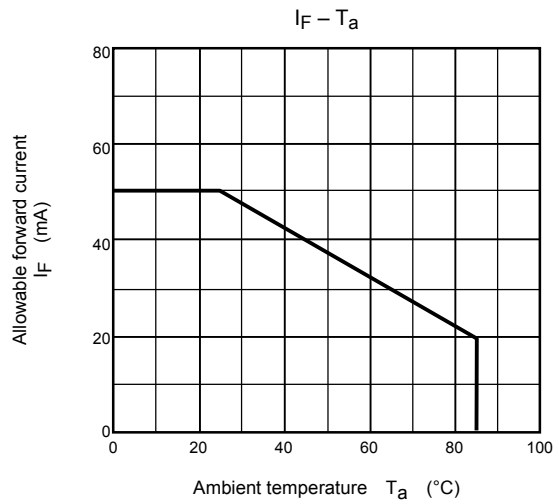
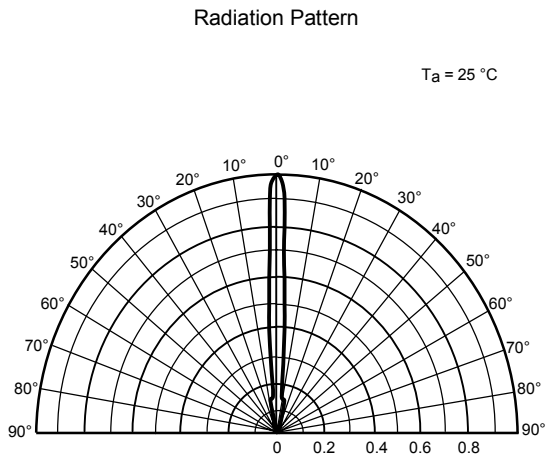
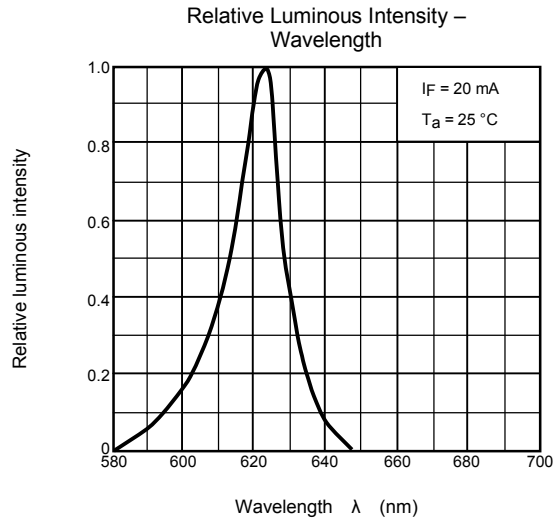
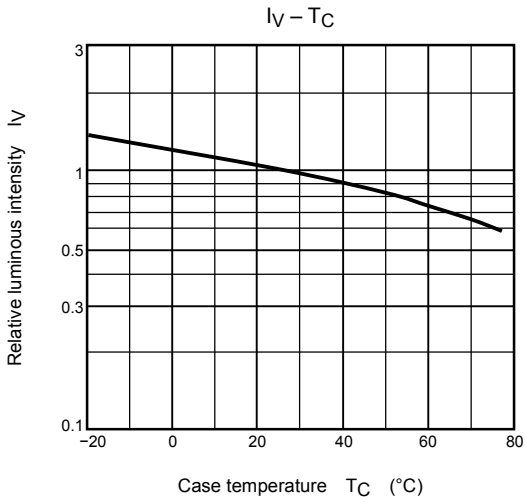
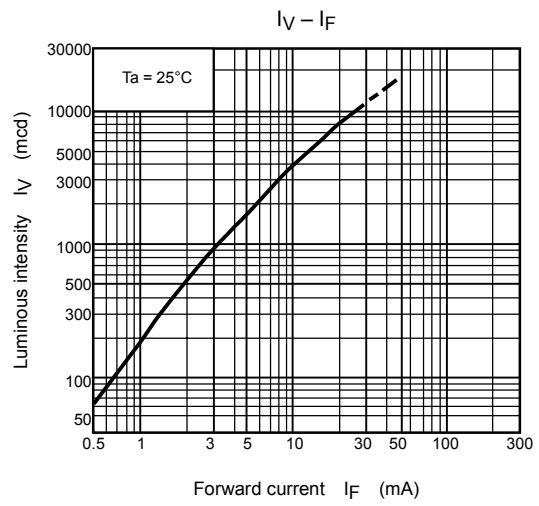
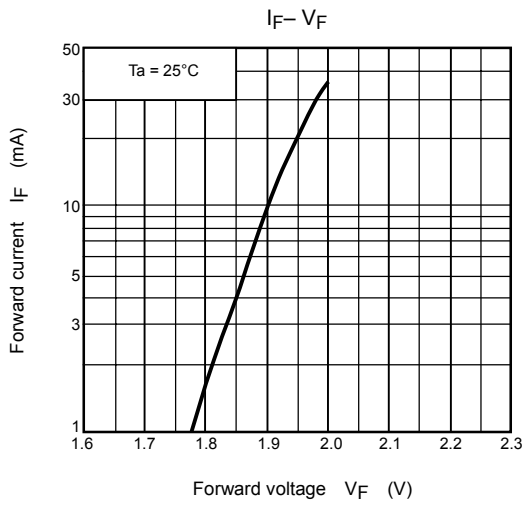
Measurement tolerance for each limit is  $\pm 15$ .

U: 3200-6400 mcd, V: 5600-11200 mcd, W: 8500-23000 mcd.

**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.



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