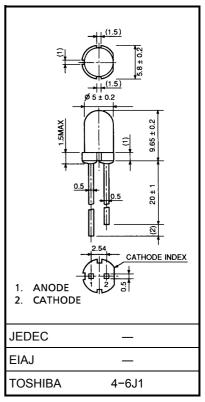
# TENTATIVE TOSHIBA In GaA&P LED TLOU180P,TLSU180P,TLYU180P

#### Panel Circuit Indicator

- InGaAℓP LED
- Without stand-offs
- All plastic mold type
- Colorless clear lens
- Lineup: 3 colors (red,orange,yellow)
- Suitable for high-brightness and less electricity consumption.
- All plastic molded lens, provides an excellent on–off contrast ratio.
- Applications: Backlight, light for decoration, switches,
  - various indicator, personal equipment

#### Lineup

Product	Color	Material		
TLOU180P	Orange	InGaAlP		
TLSU180P	Red	InGaAtP		
TLYU180P	Yellow	InGaAlP		



Weight: 0.31 g

#### Maximum Ratings (Ta = 25°C)

Product	Forward Current I <sub>F</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Power Dissipation P <sub>D</sub> (mW)	Operating Temperature T <sub>opr</sub> (°C)	storage temperature T <sub>stg</sub> (°C)		
TLOU180P	30	4	72	-30~85	-40~120		
TLSU180P	30	4	72	-30~85	-40~120		
TLYU180P	30	4	75	-30~85	-40~120		

Unit in mm

### Electrical And Optical Characteristics(Ta = 25°C)

Product	Typ. Emission Wavelength		Luminous Intensity I <sub>V</sub>		Forward Voltage VF			Reverse Current I <sub>R</sub>			
	λP	Δλ	١ <sub>F</sub>	Min	Тур.	١ <sub>F</sub>	Тур.	Max	١ <sub>F</sub>	Max	V <sub>R</sub>
TLOU180P	612	15	20	850	7000	20	2.0	2.4	20	50	4
TLSU180P	636	17	20	850	4500	20	2.0	2.4	20	50	4
TLYU180P	590	13	20	850	4300	20	2.1	2.5	20	50	4
Unit	n	m	mA	m	cd	mA	١	/	mA	μA	V

#### Precaution

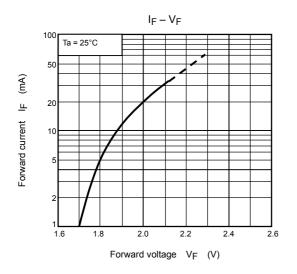
Please be careful of the followings

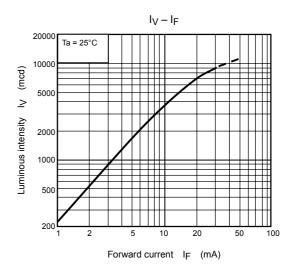
• Soldering temperature: 260°C max Soldering time: 3 s max

(Soldering portion of lead: Up to 2 mm from the body of the device)

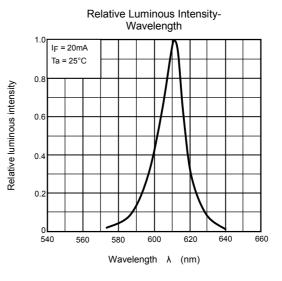
- If the lead is formed, the lead should be formed up to 5 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.
- This visible LED lamp also emits some IR light. If a photodetector is located near the LED lamp, please ensure that it will not be affected by this IR light.

TLOU180P



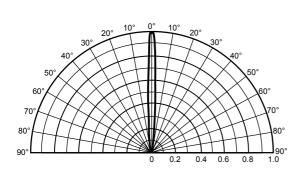


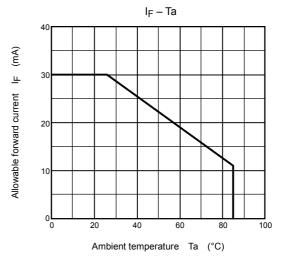
 $I_V - Tc$ 



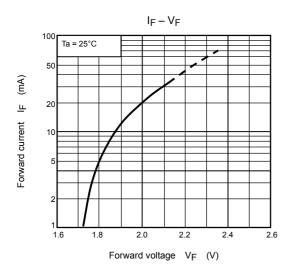
Radiation Pattern

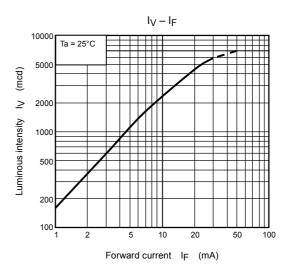
Ta = 25°C



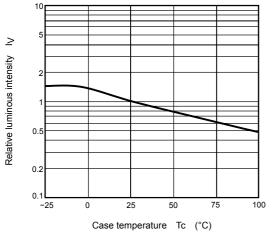


TLSU180P





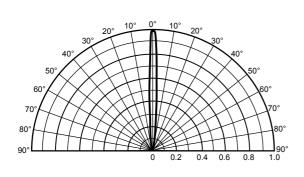


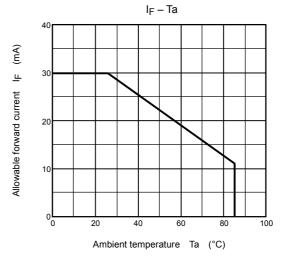


Relative Luminous Intensity-Wavelength 1.0 IF = 20mA Ta = 25°C 0.8 Relative luminous intensity 0.6 0.4 0.2 0 560 580 600 620 640 660 680 Wavelength  $\lambda$  (nm)

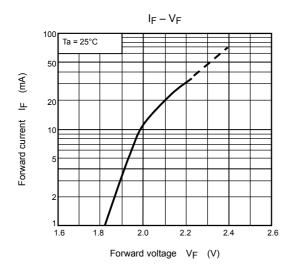
Radiation Pattern

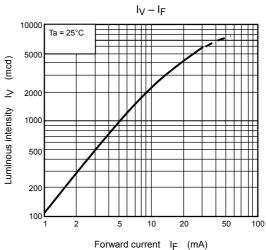
Ta = 25°C

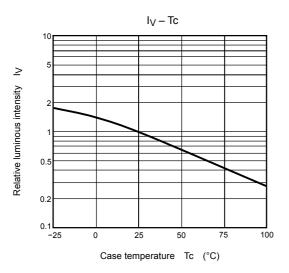




TLYU180P





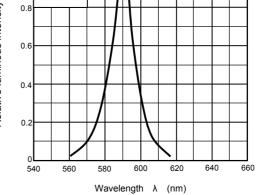




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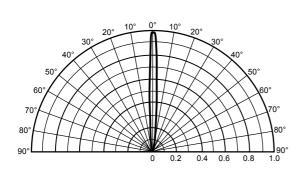
IF = 20mA Ta = 25°C

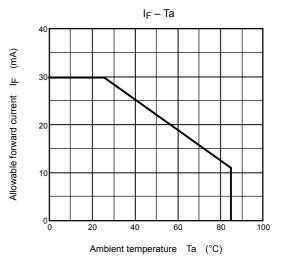
Relative Luminous Intensity-Wavelength



Radiation Pattern







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