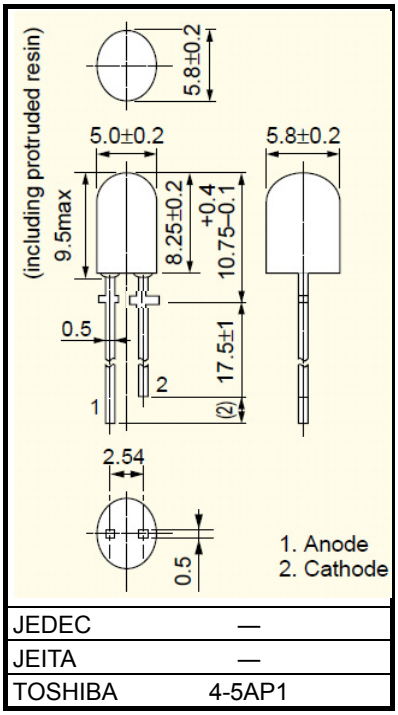
TOSHIBA LED Lamp InGaAℓP Orange Light Emission

TLOU248(F)

Panel Circuit Indicator

Unit in mm



JEDEC	—
JEITA	—
TOSHIBA	4-5AP1

Weight: 0.3 g(Typ.)

- Lead(Pb)-free products (lead: Sn-Ag-Cu)
- InGaAℓP orange LED
- Elliptical lens: Colored transparent lens
- Wide radiation
- Low drive current, high intensity orange light emission
- Plastic molded colored transparent lens provides for high contrast of on−off ratio.
- Fast response time, capable of pulse operation.
- Applications: Suitable for outdoor message signboard, full color panel, backlight.

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Forward current	I_F	30	mA
Reverse voltage	V_R	4	V
Power dissipation	P_D	72	mW
Operating temperature range	T_{opr}	−30~85	°C
Storage temperature range	T_{stg}	−40~120	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical and Optical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V_F	IF = 20 mA	—	2.0	2.4	V
Reverse current	I_R	V_R = 4 V	—	—	50	μA
Luminous intensity	I_V	IF = 20 mA (Note)	85	300	—	mcd
Peak emission wavelength	λ_P	I_F = 20 mA	—	(612)	—	nm
Spectral line half width	Δλ	I_F = 20 mA	—	15	—	nm
Dominant wavelength	λd	I_F = 20 mA	—	605	—	nm

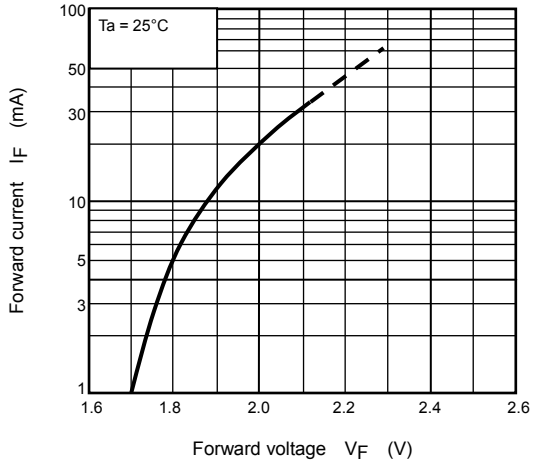
Note: Lamps are classified into the following ranks according to their luminous intensity. Each packing box includes single Luminous Intensity class.
N: 85-230mcd, P: 153-414mcd, Q: 272mcd-

Precaution

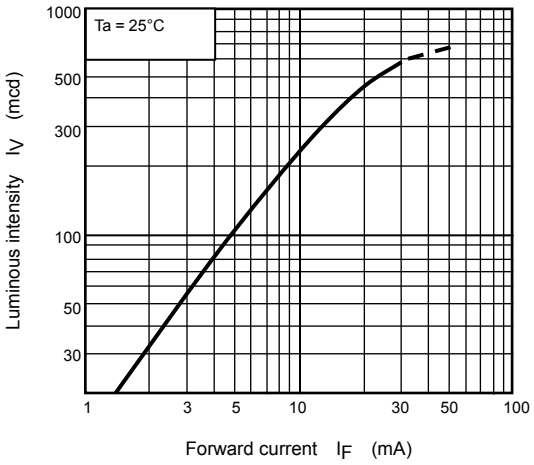
Please be careful of the followings

- Soldering temperature: 260°C max Soldering time: 3 s max
(Soldering portion of lead: below the lead stopper of the device)
- If the lead is formed, the lead should be formed up to below the lead stopper 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.

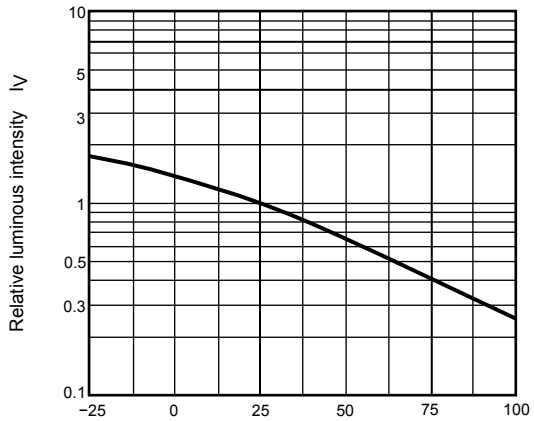
$I_F - V_F$



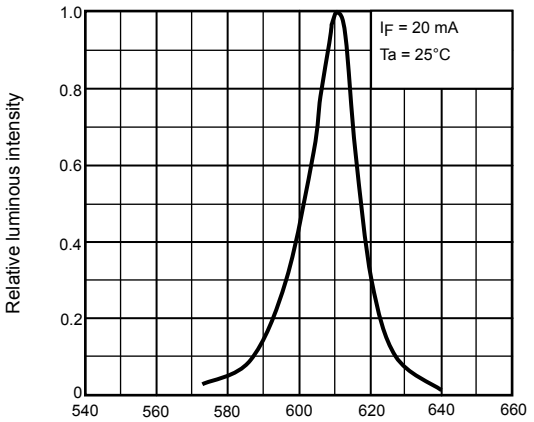
$I_V - I_F$



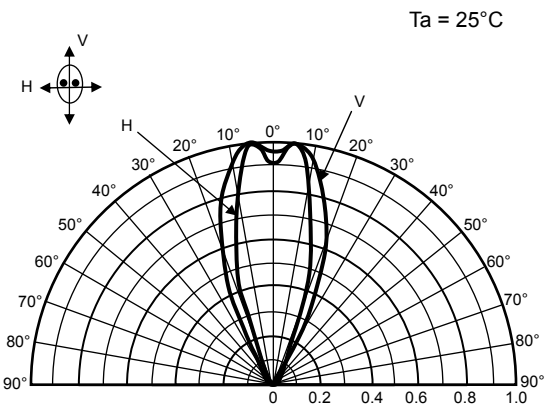
$I_V - Tc$



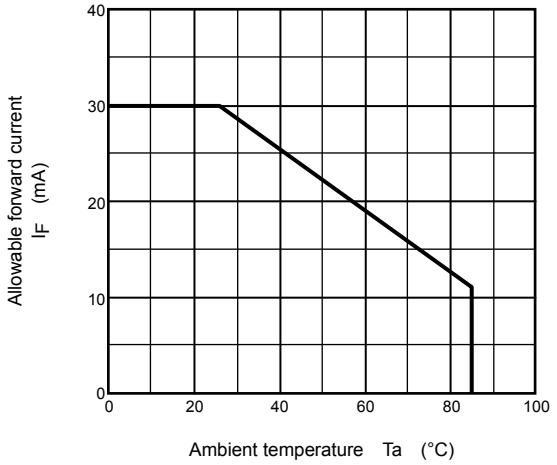
Relative Luminous Intensity
Wavelength



Radiation Pattern



$I_F - Ta$



RESTRICTIONS ON PRODUCT USE

20070701-EN

- The information contained herein is subject to change without notice.
- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
  In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the “Handling Guide for Semiconductor Devices,” or “TOSHIBA Semiconductor Reliability Handbook” etc.
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- GaAs(Gallium Arsenide) is used in this product. The dust or vapor is harmful to the human body. Do not break, cut, crush or dissolve chemically.
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