

TOSHIBA LED Lamp InGaAlP Red Light Emission

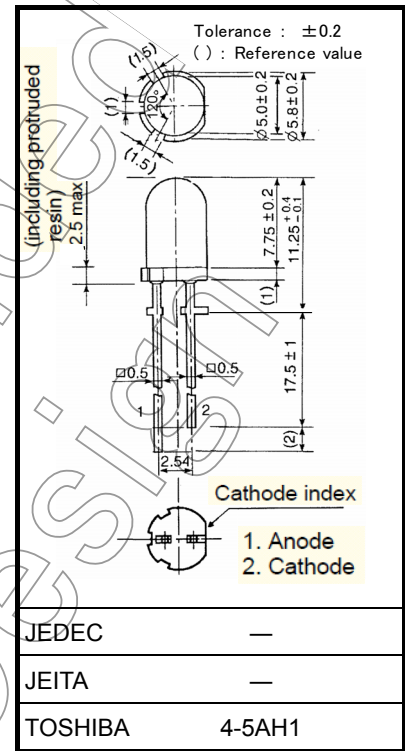
# TLRMK16TA(F)

## Panel Circuit Indicator

- $\phi$  5 mm package
- InGaAlP technology
- Transparent lens
- High intensity light emission
- Excellent low current light output
- Applications : Various types of information panels, backlightings, etc.
- Straight lead type is also available.

TLRMK16TAP(F)

Unit: mm



Weight: 0.31 g (typ.)

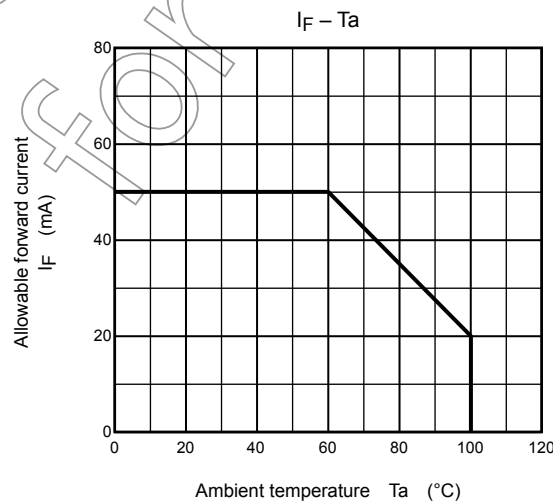
## Absolute Maximum Ratings (Ta = 25°C)

| Characteristic              | Symbol        | Rating     | Unit |
|-----------------------------|---------------|------------|------|
| Forward current             | $I_F$ (Note1) | 50         | mA   |
| Reverse voltage             | $V_R$         | 4          | V    |
| Power dissipation           | $P_D$         | 125        | mW   |
| Operating temperature range | $T_{opr}$     | -40 to 100 | °C   |
| Storage temperature range   | $T_{stg}$     | -40 to 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).

Note1: Forward current derating



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

| Characteristic           | Symbol          | Test Condition                 | Min  | Typ. | Max | Unit          |
|--------------------------|-----------------|--------------------------------|------|------|-----|---------------|
| Forward voltage          | $V_F$           | $I_F = 20 \text{ mA}$          | 1.8  | 2.15 | 2.5 | V             |
| Reverse current          | $I_R$           | $V_R = 4 \text{ V}$            | —    | —    | 50  | $\mu\text{A}$ |
| Luminous intensity       | $I_V$           | $I_F = 20 \text{ mA}$ (Note 2) | 1530 | 5400 | —   | mcd           |
| Peak emission wavelength | $\lambda_P$     | $I_F = 20 \text{ mA}$          | —    | 636  | —   | nm            |
| Spectral line half width | $\Delta\lambda$ | $I_F = 20 \text{ mA}$          | —    | 14   | —   | nm            |
| Dominant wavelength      | $\lambda_d$     | $I_F = 20 \text{ mA}$          | —    | 626  | —   | nm            |

Note 2: Lamps are classified into the following ranks according to their luminous intensity. Each packing box includes single luminous Intensity class.

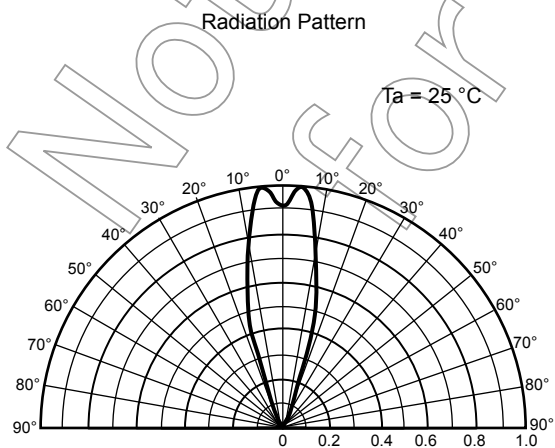
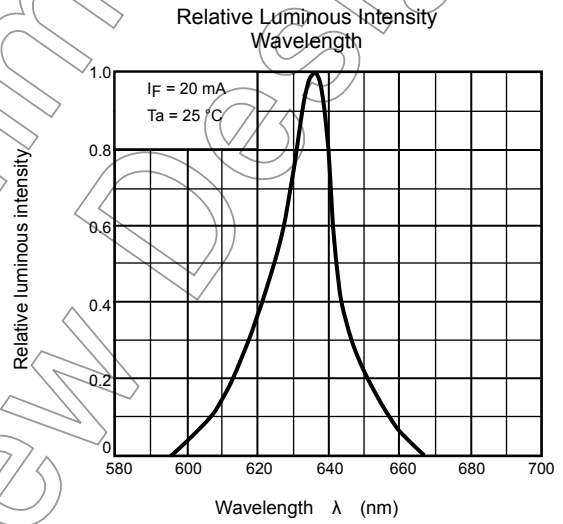
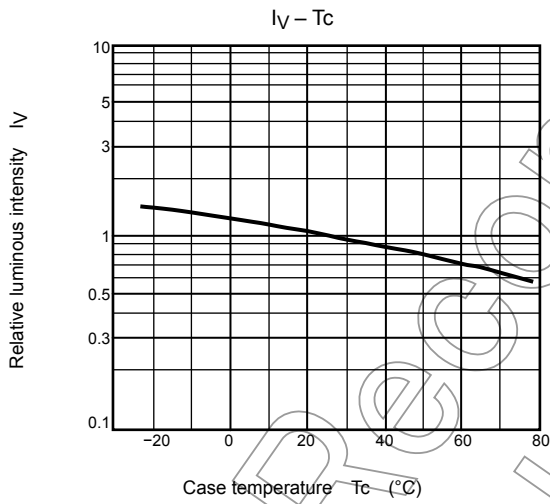
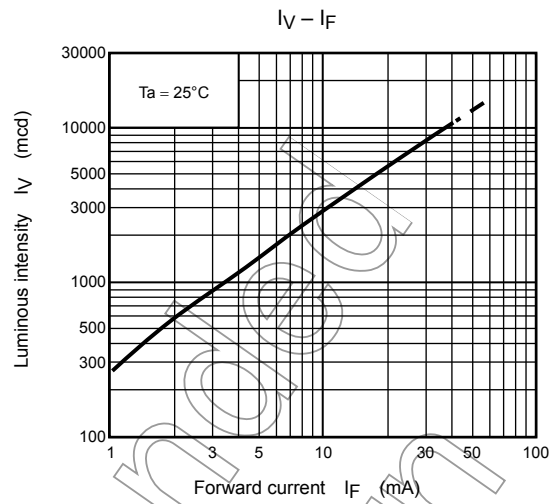
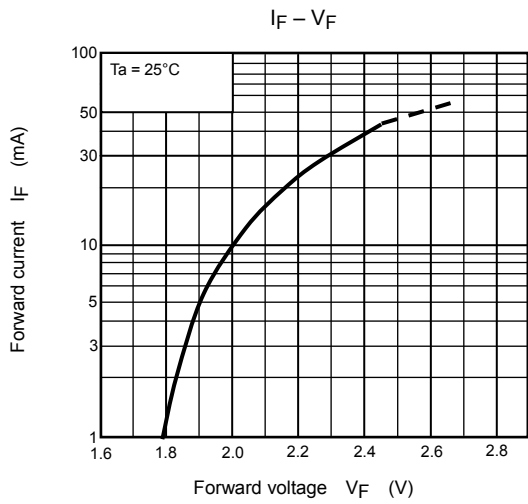
$I_V$ \_rank T:1530 to 4140 mcd, U: 2720 to 7360 mcd, V:4760 mcd and over

## 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 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.

Not Recommended for New Design



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