

### TLPGE23TP(F),TLFGE23TP(F),TLGE23TP(F),TLPYE23TP(F)

#### Panel Circuit Indicator

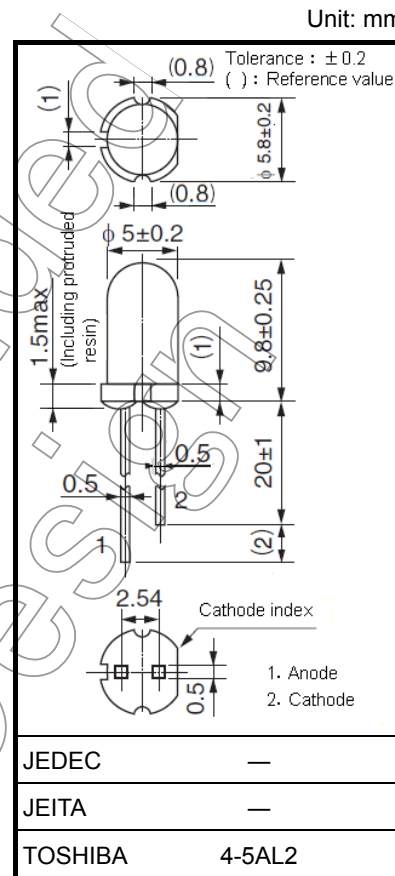
Unit: mm

- $\phi$  5mm package
- InGaAlP technology
- Transparent lens
- Lineup: 3 colors (pure green, green, pure yellow)
- High intensity light emission
- Excellent low current light output
- Applications: Various types of information panels, backlightings, etc.
- Stopper lead type is also available

TLPGE23T(F), TLFGE23T(F), TLGE23T(F), TLPYE23T(F)

#### Lineup

| Product Name | Color       | Material |
|--------------|-------------|----------|
| TLPGE23TP(F) | Pure Green  | InGaAlP  |
| TLFGE23TP(F) | Green       |          |
| TLGE23TP(F)  | Green       |          |
| TLPYE23TP(F) | Pure Yellow |          |



Weight: 0.31 g (typ.)

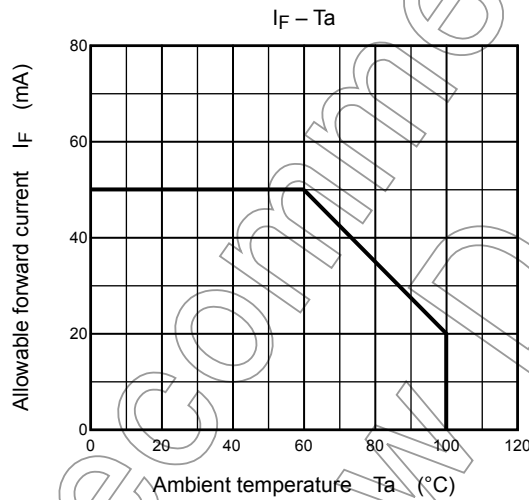
## Absolute Maximum Ratings (Ta = 25°C)

| Product Name | Forward Current<br>I <sub>F</sub> (mA) (Note 1) | Reverse Voltage<br>V <sub>R</sub> (V) | Power Dissipation<br>P <sub>D</sub> (mW) | Operating Temperature<br>T <sub>opr</sub> (°C) | Storage Temperature<br>T <sub>stg</sub> (°C) |
|--------------|-------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------------|----------------------------------------------|
| TLPGE23TP(F) | 50                                              | 4                                     | 120                                      | -40 to 100                                     | -40 to 120                                   |
| TLFGE23TP(F) | 50                                              | 4                                     | 120                                      |                                                |                                              |
| TLGE23TP(F)  | 50                                              | 4                                     | 120                                      |                                                |                                              |
| TLPYE23TP(F) | 50                                              | 4                                     | 120                                      |                                                |                                              |

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).

Note 1: Forward current derating



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

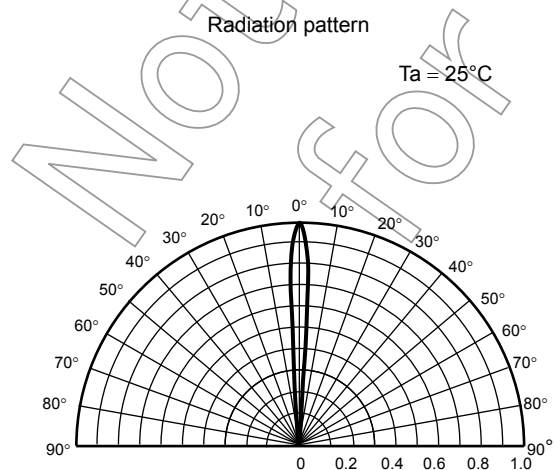
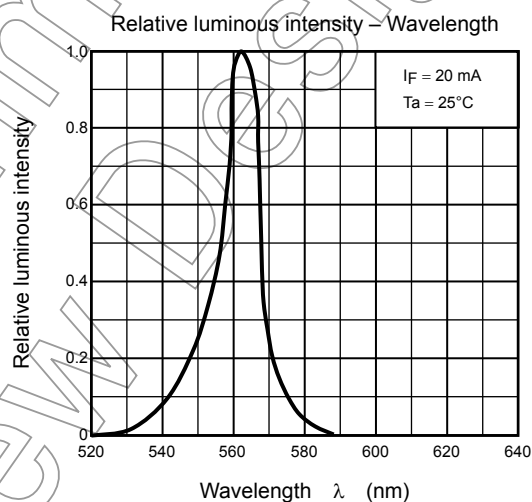
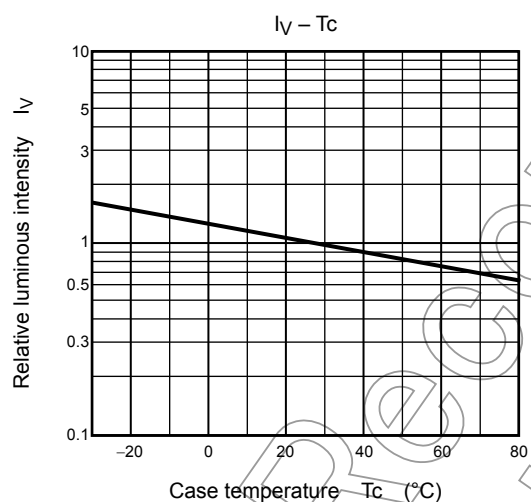
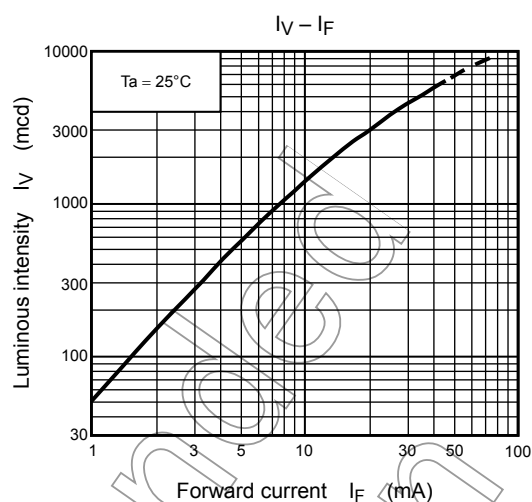
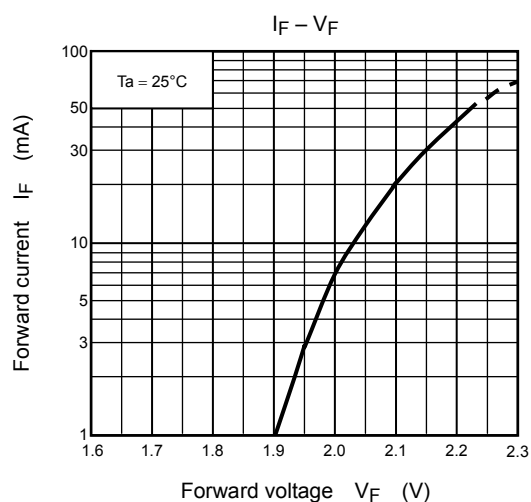
| Product Name | Emission Wavelength |      |     |                |      |                | Luminous Intensity<br>I <sub>V</sub> |      |                | Forward Voltage<br>V <sub>F</sub> |     |                | Reverse Current<br>I <sub>R</sub> |                |
|--------------|---------------------|------|-----|----------------|------|----------------|--------------------------------------|------|----------------|-----------------------------------|-----|----------------|-----------------------------------|----------------|
|              | λ <sub>d</sub>      |      |     | λ <sub>p</sub> | Δλ   | I <sub>F</sub> | Min                                  | Typ. | I <sub>F</sub> | Typ.                              | Max | I <sub>F</sub> | Max                               | V <sub>R</sub> |
|              | Min                 | Typ. | Max | Typ.           | Typ. |                |                                      |      |                |                                   |     |                |                                   |                |
| TLPGE23TP(F) | -                   | 558  | 564 | 562            | 14   | 20             | 850                                  | 3000 | 20             | 2.1                               | 2.4 | 20             | 50                                | 4              |
| TLFGE23TP(F) | 559                 | 565  | 570 | 568            | 15   | 20             | 1530                                 | 5000 | 20             | 2.0                               | 2.4 | 20             | 50                                | 4              |
| TLGE23TP(F)  | 565                 | 571  | 576 | 574            | 17   | 20             | 2720                                 | 7000 | 20             | 2.0                               | 2.4 | 20             | 50                                | 4              |
| TLPYE23TP(F) | 574                 | 580  | 586 | 583            | 14   | 20             | 2720                                 | 8000 | 20             | 2.0                               | 2.4 | 20             | 50                                | 4              |
| Unit         | nm                  |      |     |                |      | mA             | mcd                                  |      |                | V                                 |     | mA             | μA                                | V              |

## Precautions

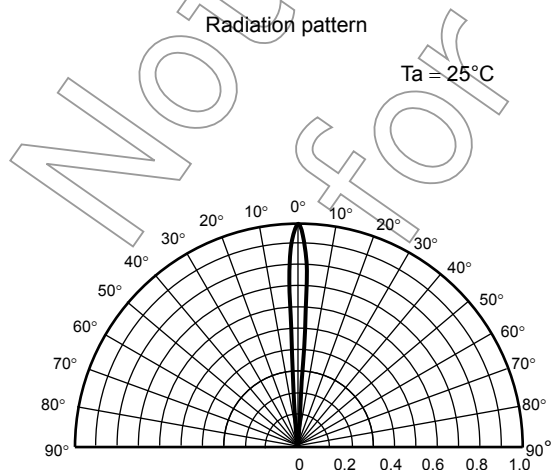
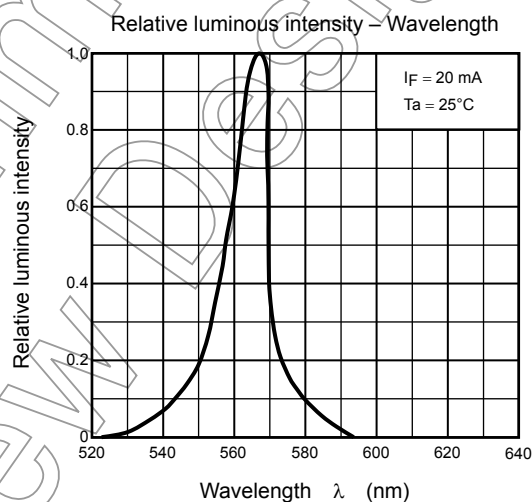
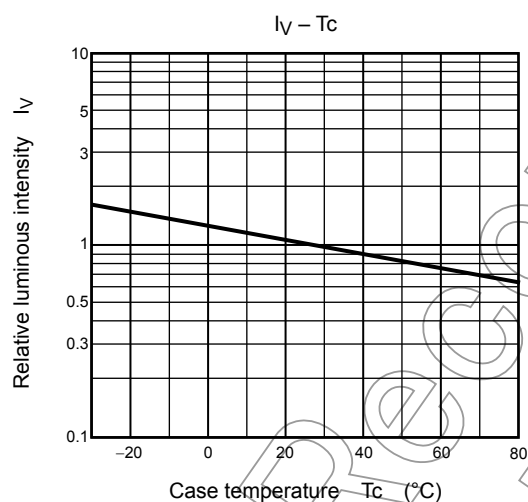
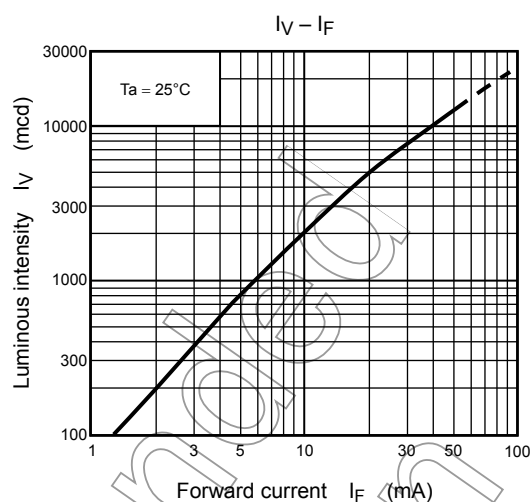
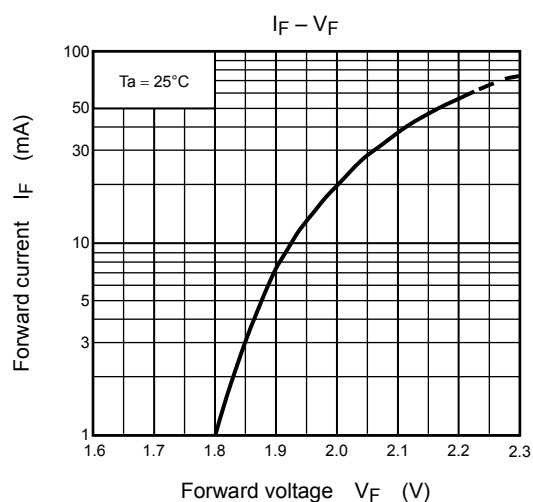
Please be careful of the following:

- Soldering temperature: 260°C max, soldering time: 3 s max  
(soldering portion of lead: up to 1.6 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 1.6 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 photo detector is located near the LED lamp, please ensure that it will not be affected by this IR light.

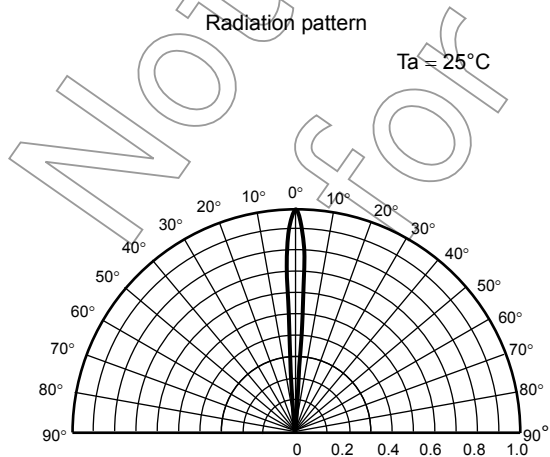
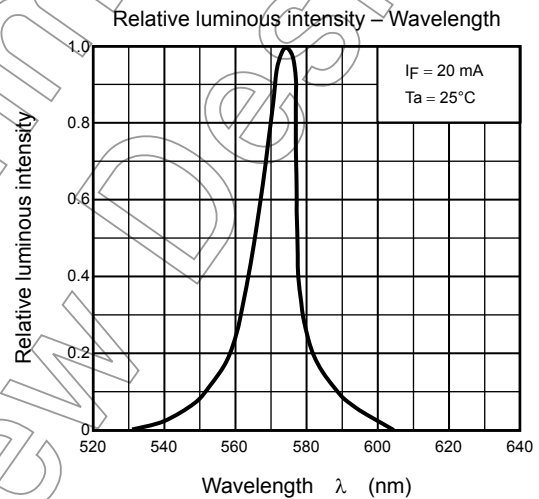
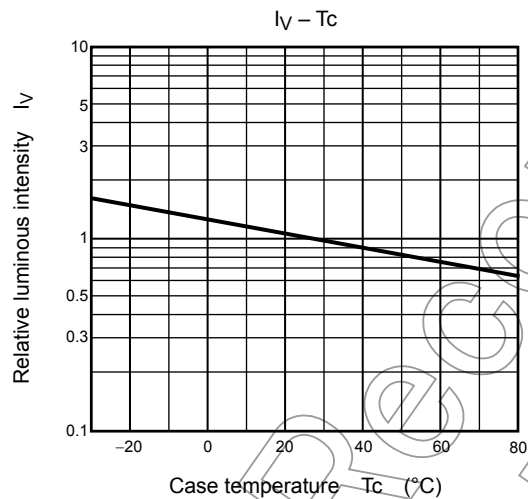
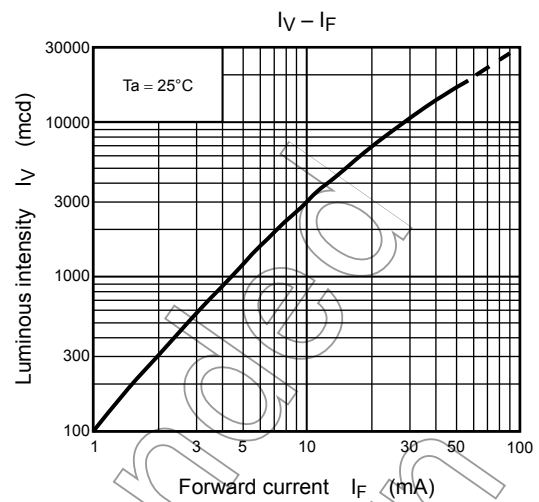
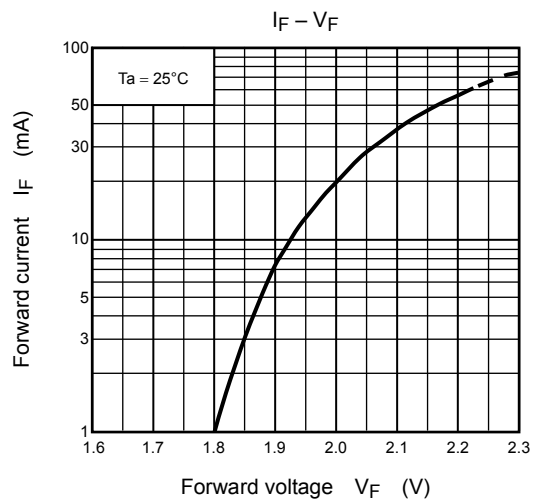
## TLPGE23TP(F)



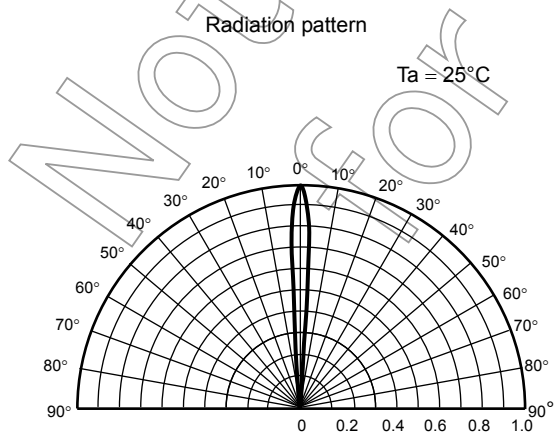
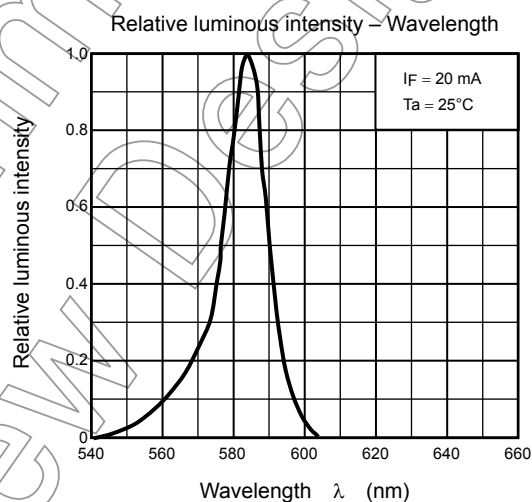
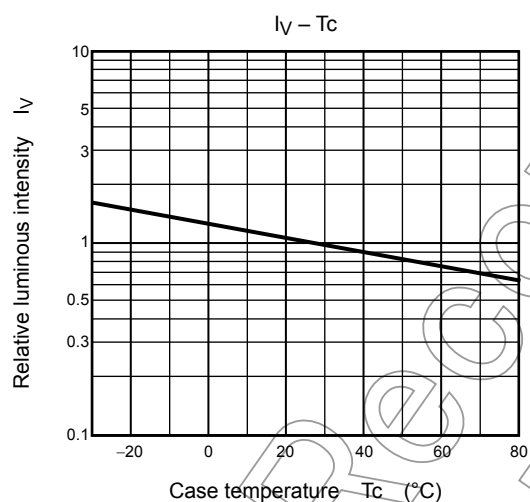
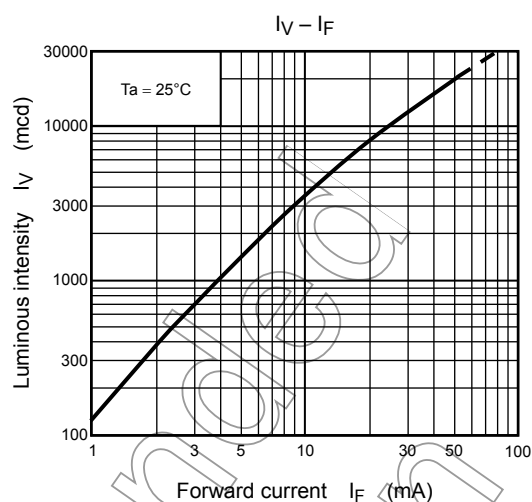
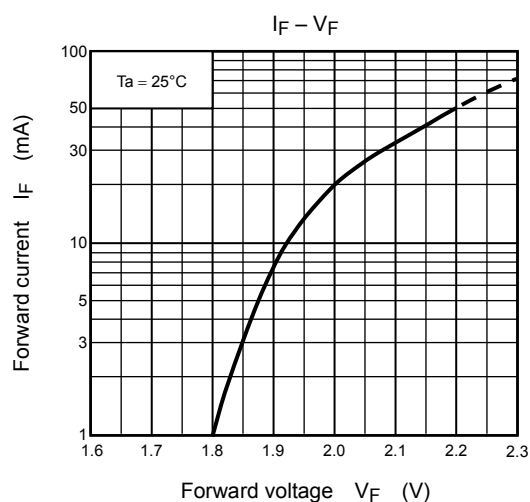
## TLFGE23TP(F)



## TLGE23TP(F)



## TLPYE23TP(F)



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