

TOSHIBA InGaAlP LED

TLRE50T(F),TLRME50T(F),TLSE50T(F),TLOE50T(F),TLYE50T(F), TLPYE50T(F),TLGE50T(F),TLFGE50T(F),TLPGE50T(F)

Panel Circuit Indicators

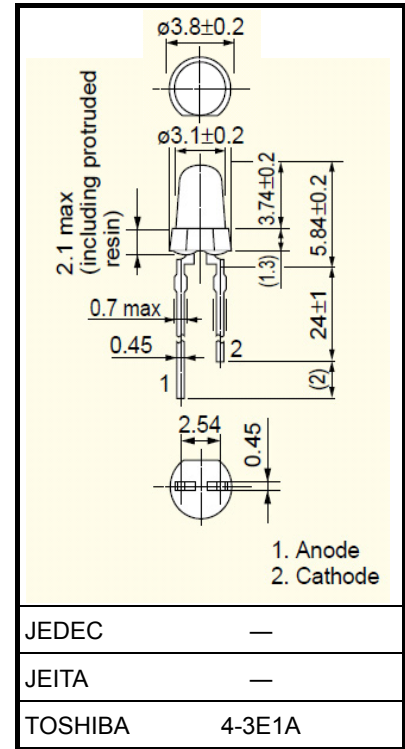
Unit: mm

Lead(Pb)-free products (lead: Sn-Ag-Cu)

- 3mm package
- InGaAlP technology
- All plastic mold type
- Transparent lens
- Line-up: 6 colors (red, orange, yellow, pure yellow, green and pure green)
- High intensity light emission
- Excellent low current light output
- Applications: message boards, security devices and dashboard displays

Lineup

| Product Name | Color | Material |
|--------------|-------------|----------|
| TLRE50T(F) | Red | InGaAlP |
| TLRME50T(F) | Red | |
| TLSE50T(F) | Red | |
| TLOE50T(F) | Orange | |
| TLYE50T(F) | Yellow | |
| TLPYE50T(F) | Pure Yellow | |
| TLGE50T(F) | Green | |
| TLFGE50T(F) | Green | |
| TLPGE50T(F) | Pure Green | |



Weight: 0.14 g(Typ.)

Absolute Maximum Ratings (Ta = 25°C)

| Product Name | Forward Current I _F (mA) | Reverse Voltage V _R (V) | Power Dissipation P _D (mW) | Operating Temperature T _{opr} (°C) | Storage Temperature T _{stg} (°C) |
|--------------|--|---------------------------------------|--|--|--|
| TLRE50T(F) | 50 | 4 | 120 | -40~100 | -40~120 |
| TLRME50T(F) | 50 | 4 | 120 | | |
| TLSE50T(F) | 50 | 4 | 120 | | |
| TLOE50T(F) | 50 | 4 | 120 | | |
| TLYE50T(F) | 50 | 4 | 120 | | |
| TLPYE50T(F) | 50 | 4 | 120 | | |
| TLGE50T(F) | 50 | 4 | 120 | | |
| TLFGE50T(F) | 50 | 4 | 120 | | |
| TLPGE50T(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).

Electrical and Optical Characteristics (Ta = 25°C)

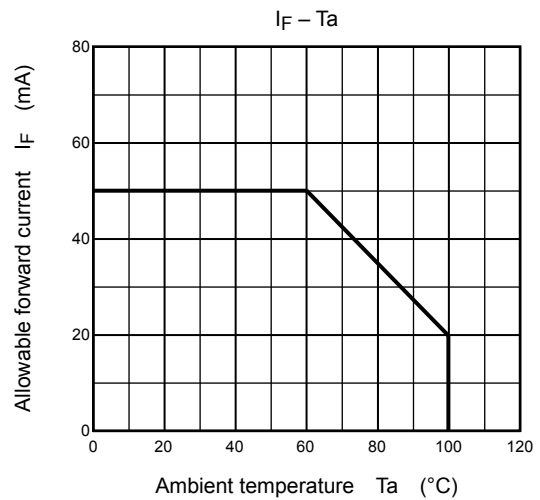
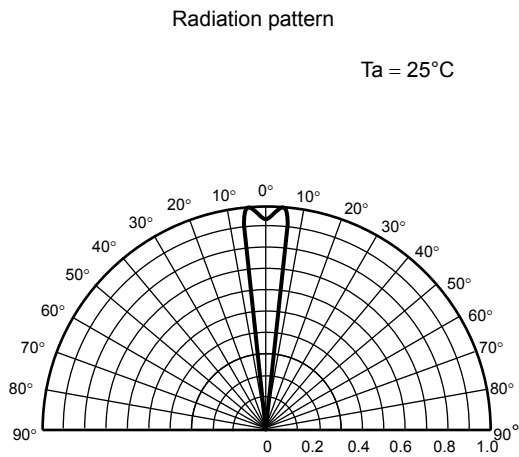
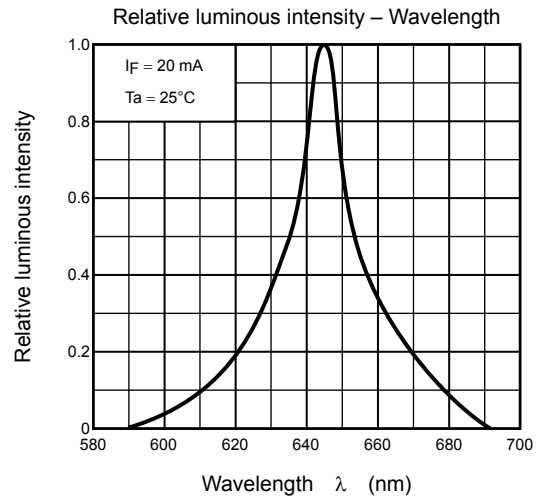
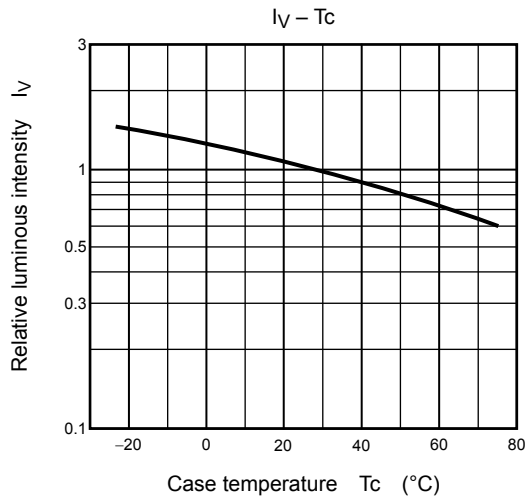
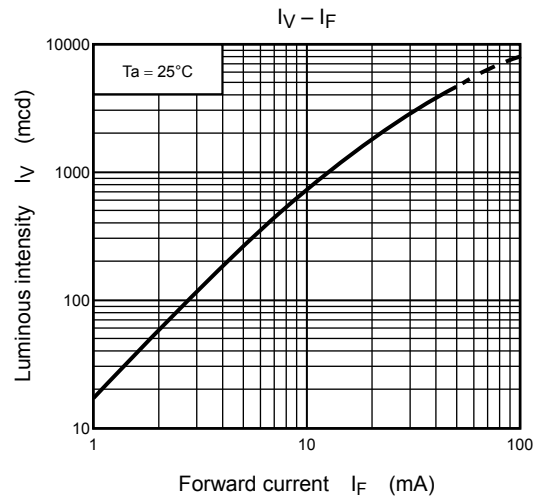
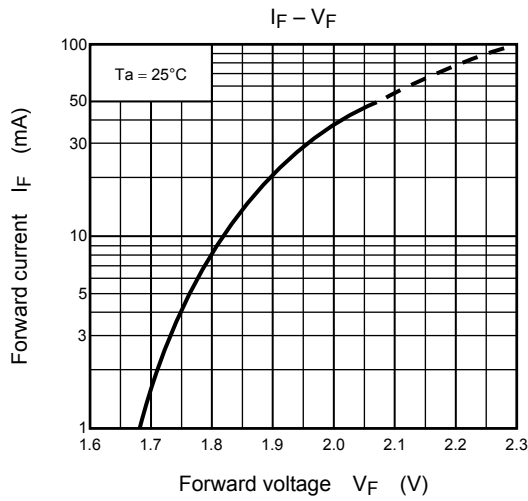
| Product Name | Typ. Emission Wavelength | | | | Luminous Intensity I _V | | | Forward Voltage V _F | | | Reverse Current I _R | |
|--------------|--------------------------|----------------|----|----------------|--------------------------------------|------|----------------|-----------------------------------|-----|----------------|-----------------------------------|----------------|
| | λ _d | λ _p | Δλ | I _F | Min | Typ. | I _F | Typ. | Max | I _F | Max | V _R |
| TLRE50T(F) | 630 | (644) | 20 | 20 | 850 | 1800 | 20 | 1.9 | 2.4 | 20 | 50 | 4 |
| TLRME50T(F) | 626 | (636) | 23 | 20 | 850 | 2200 | 20 | 1.9 | 2.4 | 20 | 50 | 4 |
| TLSE50T(F) | 613 | (623) | 20 | 20 | 1530 | 3500 | 20 | 1.9 | 2.4 | 20 | 50 | 4 |
| TLOE50T(F) | 605 | (612) | 20 | 20 | 1530 | 4500 | 20 | 2.0 | 2.4 | 20 | 50 | 4 |
| TLYE50T(F) | 587 | (590) | 17 | 20 | 1530 | 3500 | 20 | 2.0 | 2.4 | 20 | 50 | 4 |
| TLPYE50T(F) | 580 | (583) | 14 | 20 | 850 | 2500 | 20 | 2.0 | 2.4 | 20 | 50 | 4 |
| TLGE50T(F) | 571 | (574) | 17 | 20 | 476 | 1500 | 20 | 2.0 | 2.4 | 20 | 50 | 4 |
| TLFGE50T(F) | 565 | (568) | 15 | 20 | 272 | 1000 | 20 | 2.0 | 2.4 | 20 | 50 | 4 |
| TLPGE50T(F) | 558 | (562) | 14 | 20 | 153 | 600 | 20 | 2.1 | 2.4 | 20 | 50 | 4 |
| Unit | nm | | | mA | mcd | | mA | V | | mA | μA | V |

Precautions

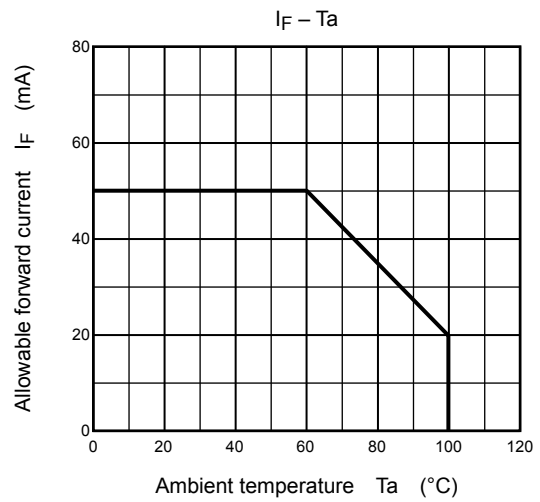
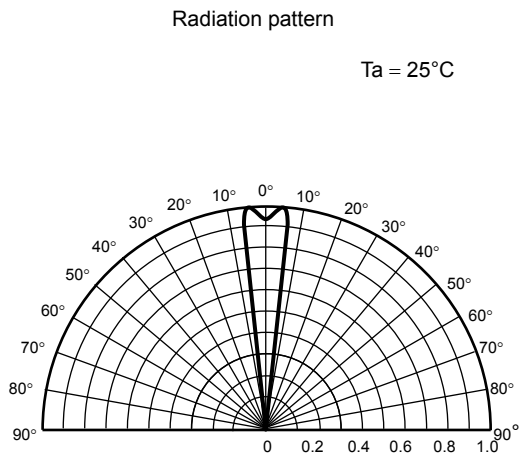
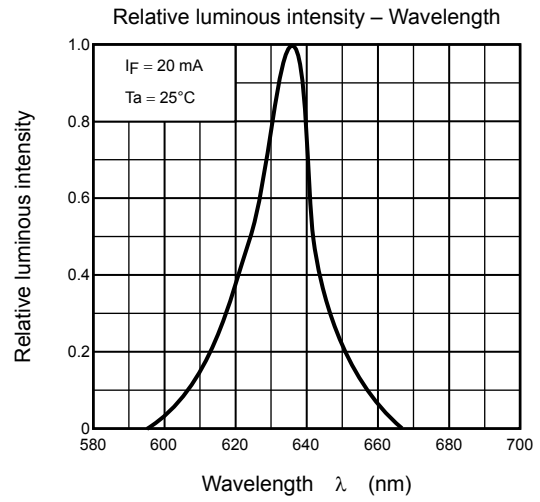
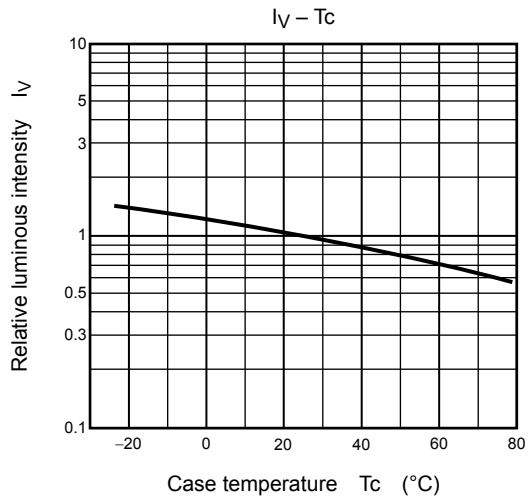
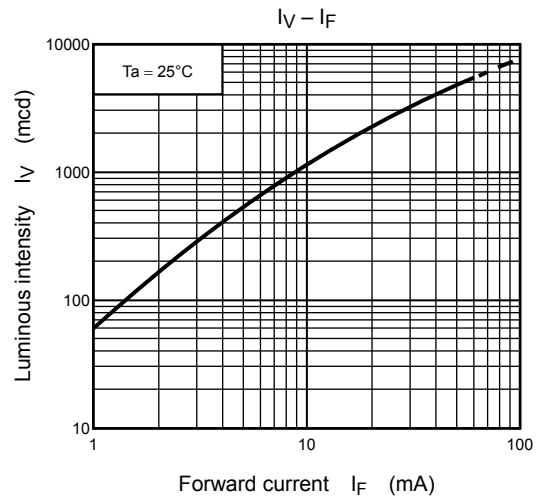
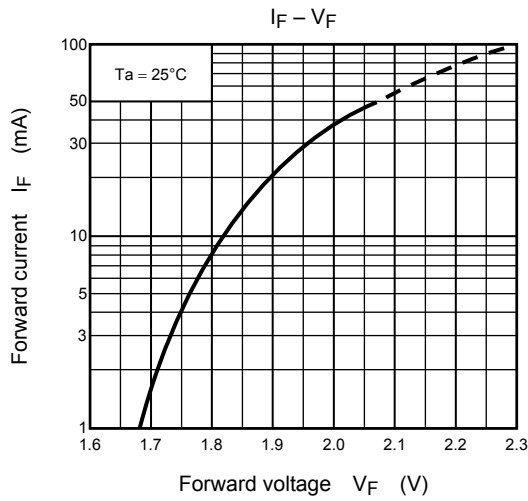
Please be careful of the following:

- 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 photodetector is located near the LED lamp, please ensure that it will not be affected by this IR light.

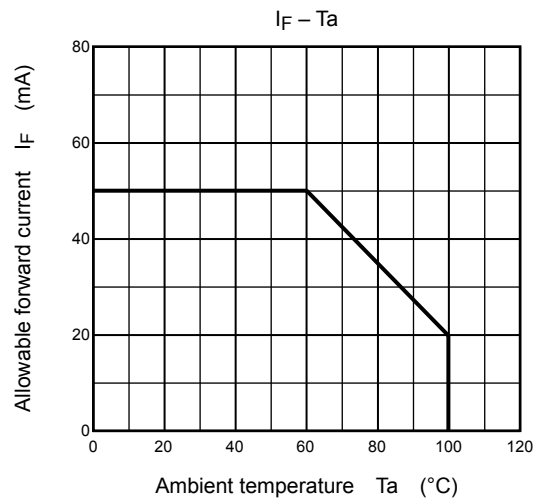
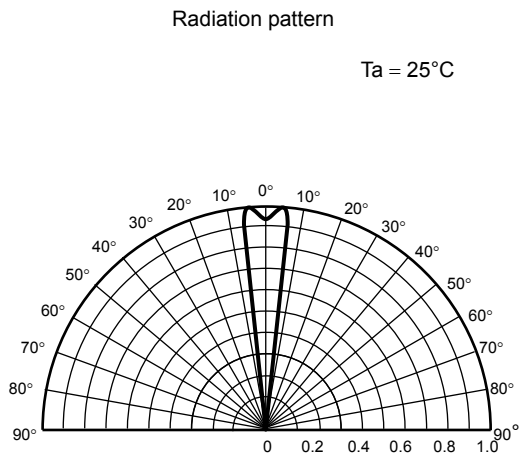
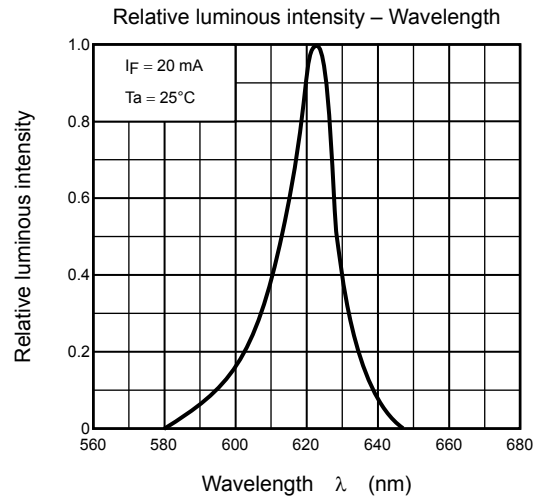
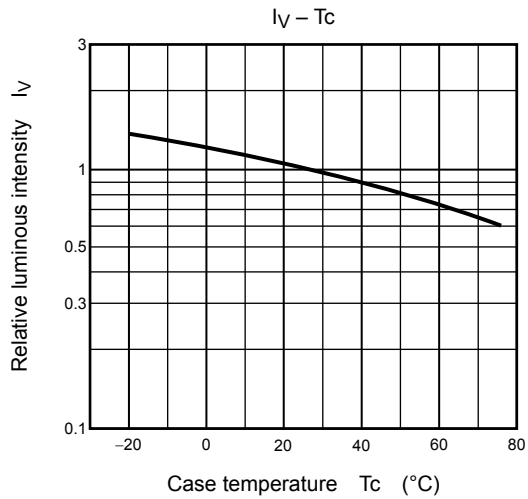
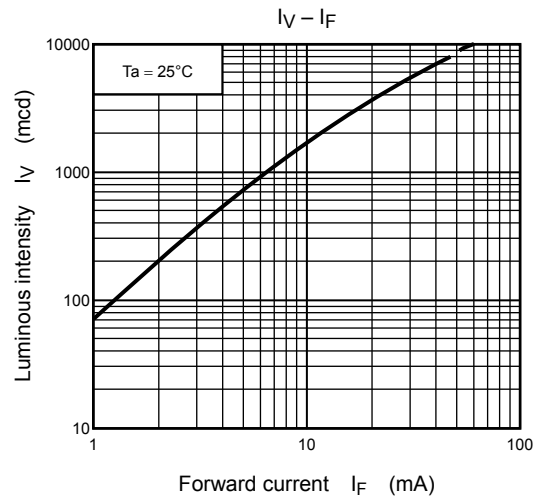
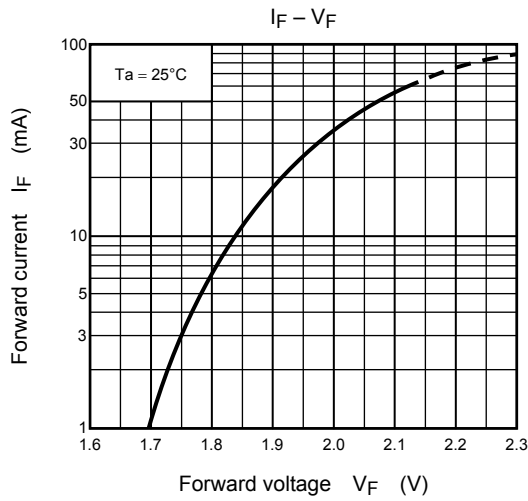
TLRE50T(F)



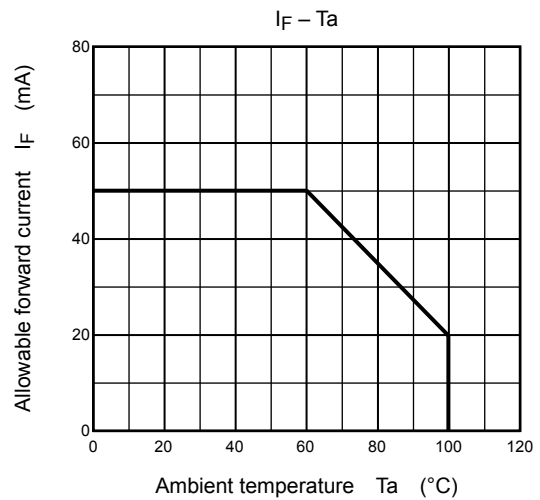
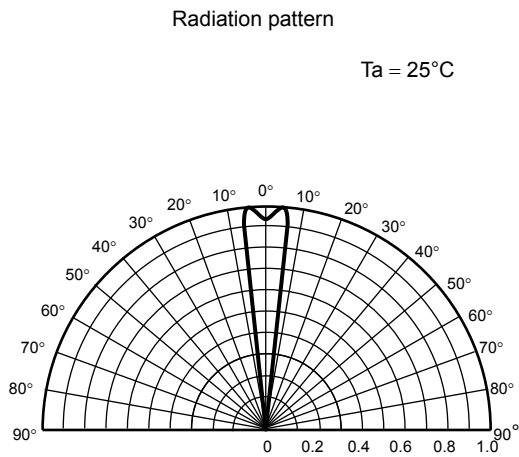
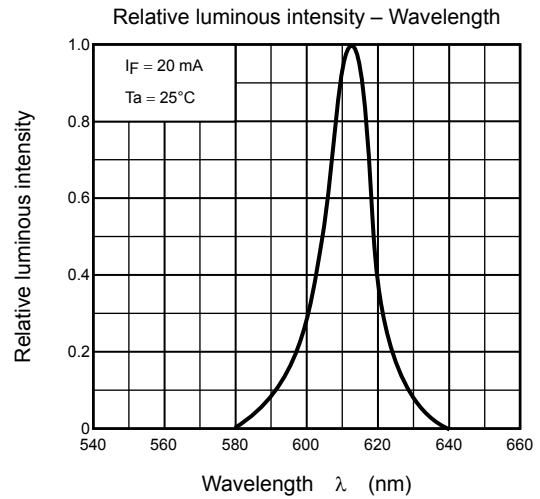
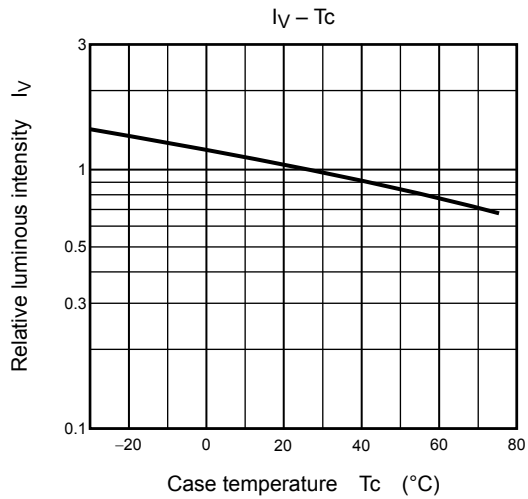
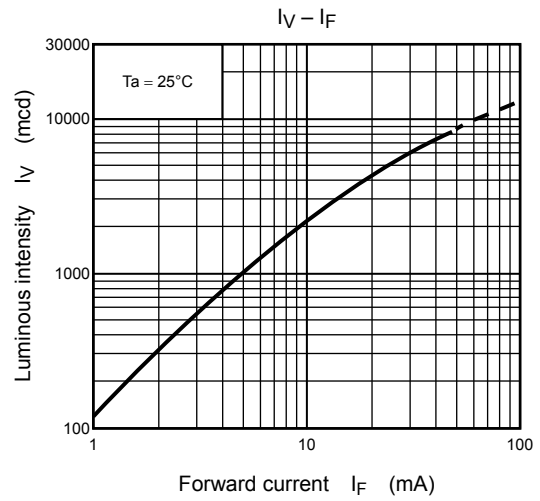
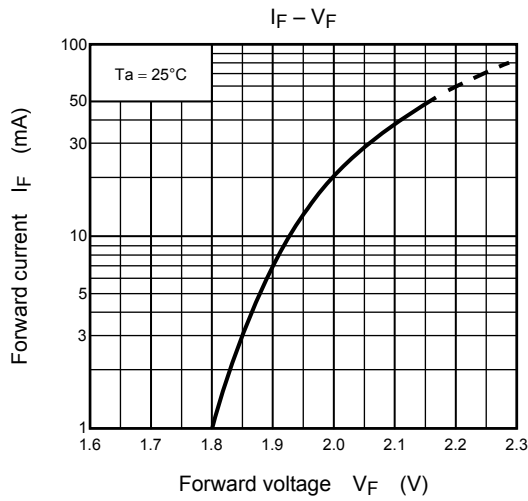
TLRME50T(F)



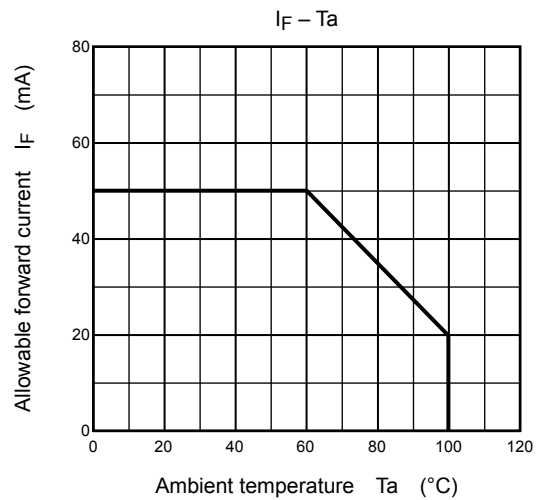
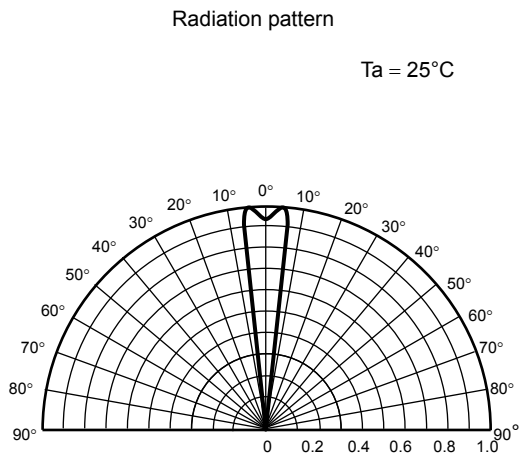
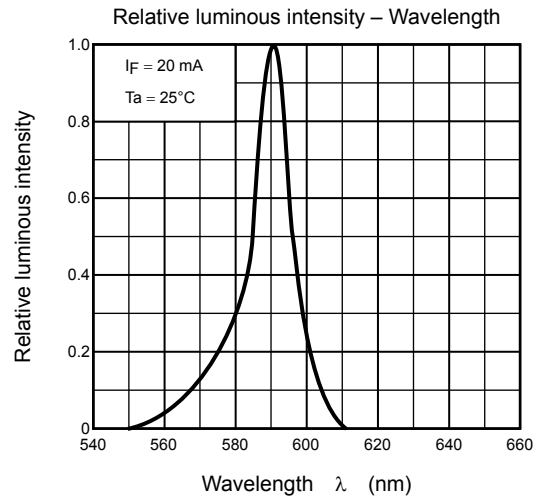
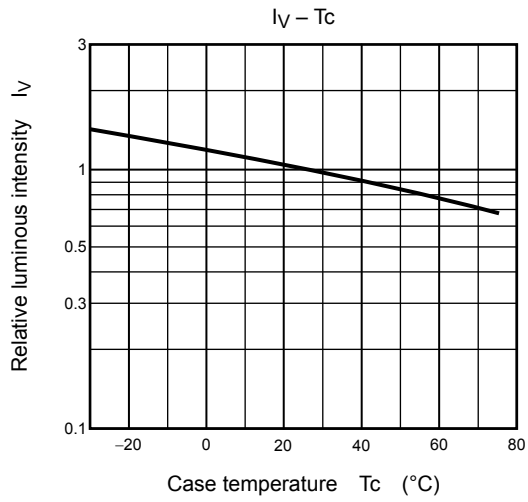
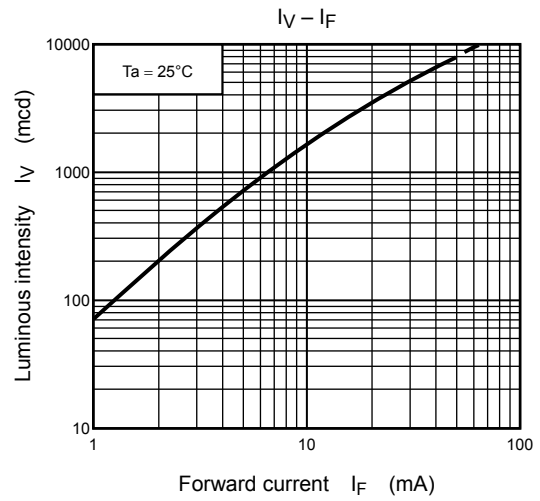
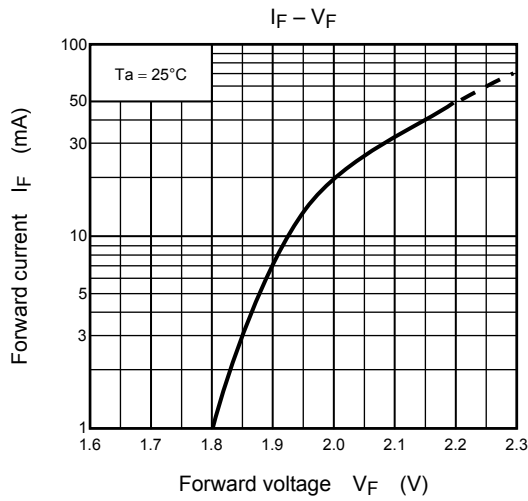
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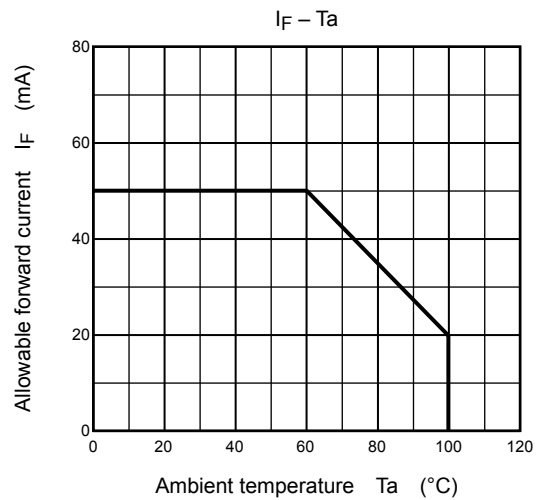
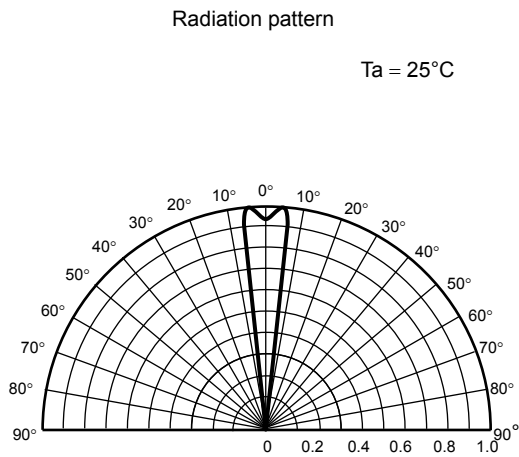
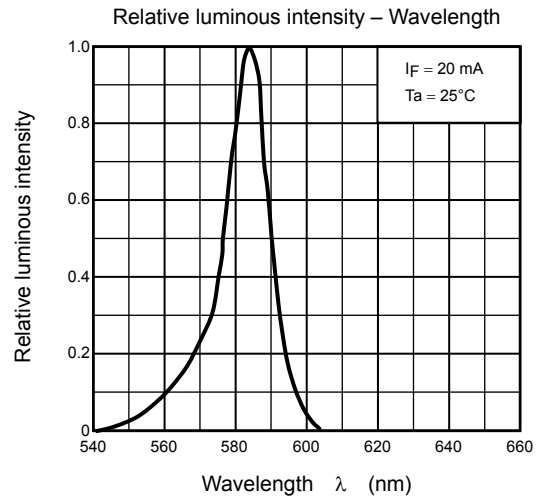
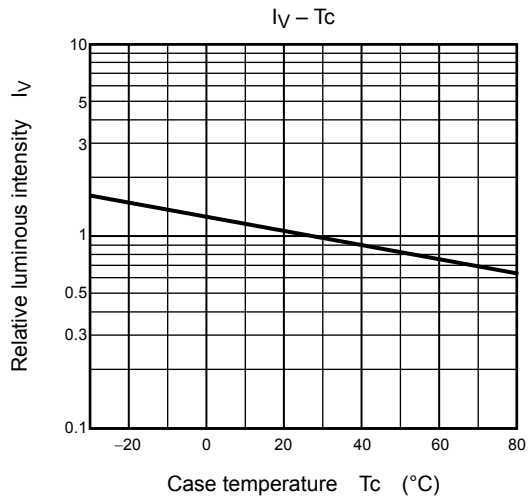
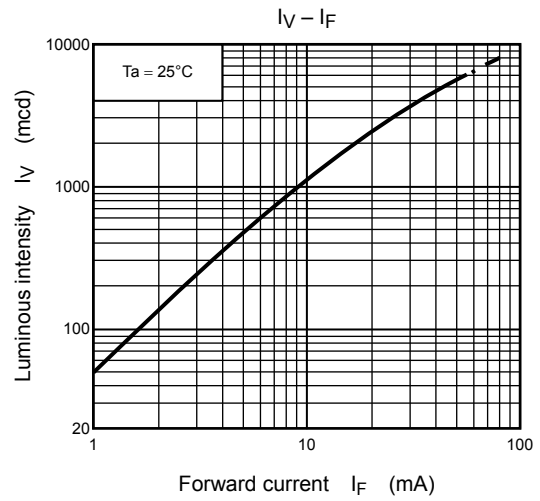
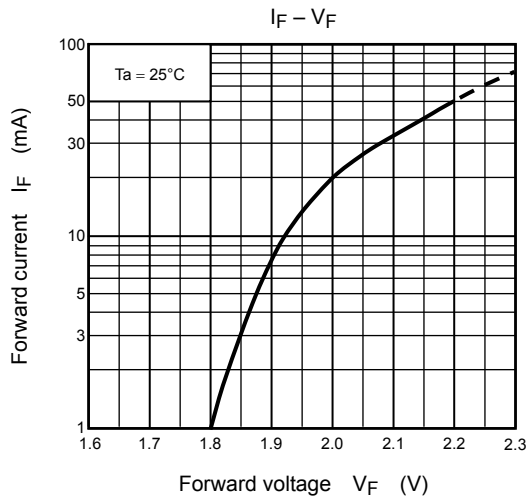
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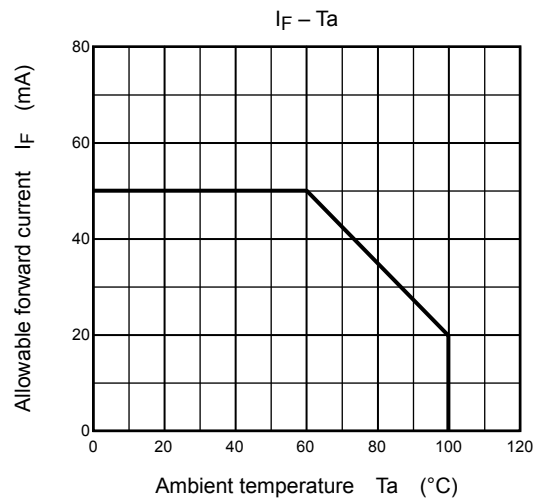
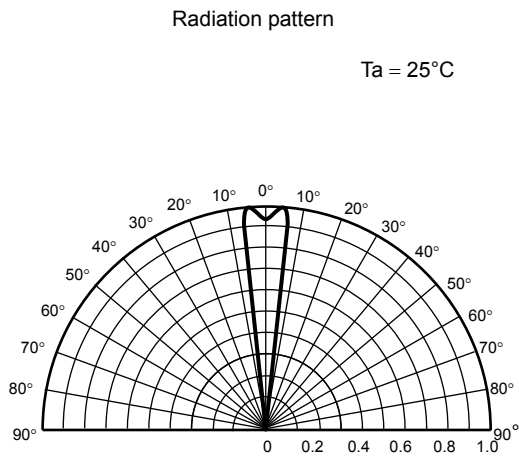
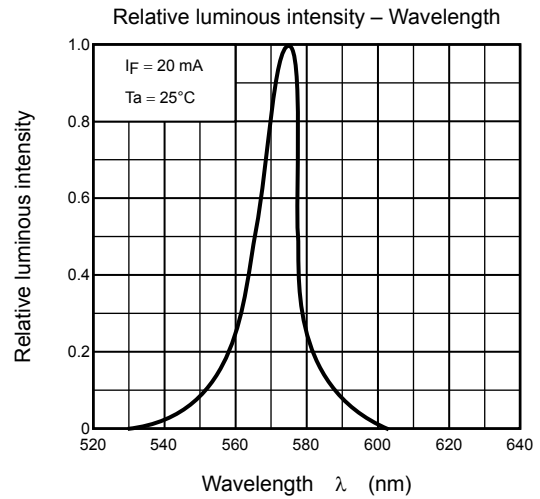
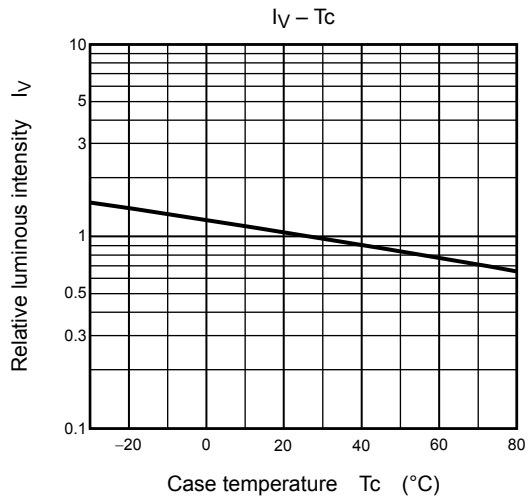
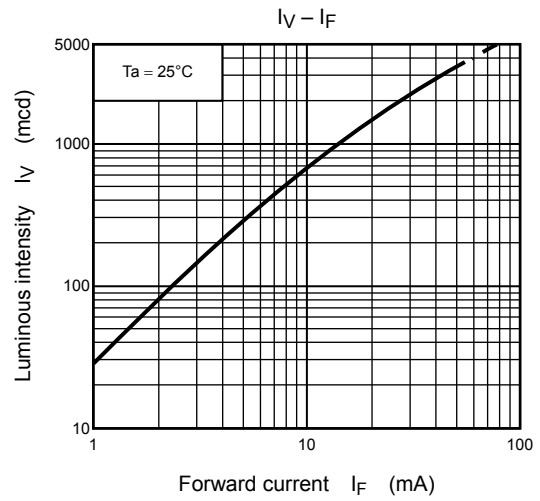
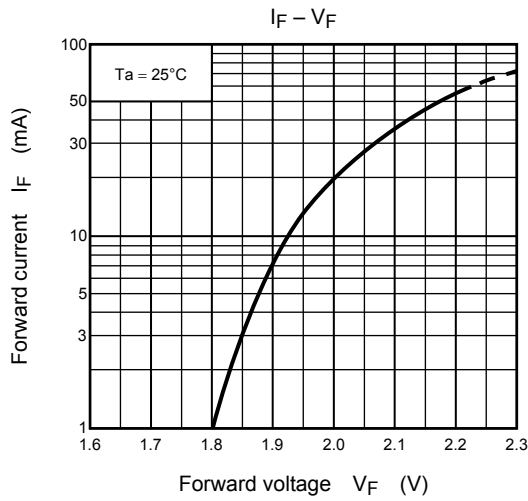
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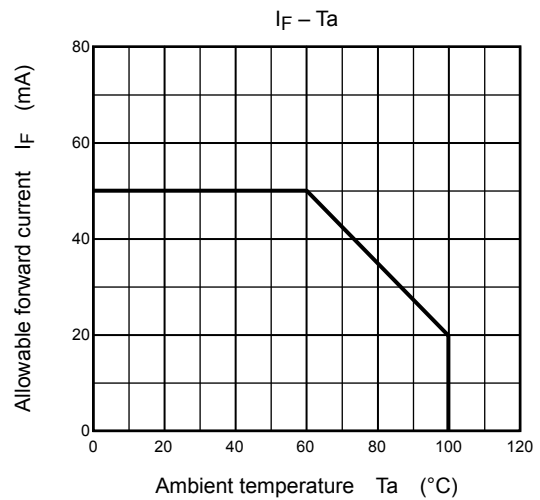
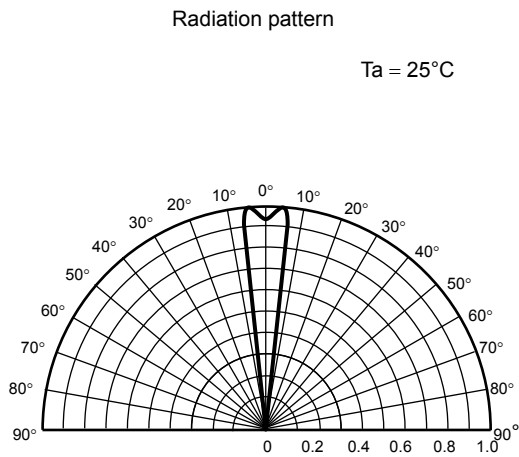
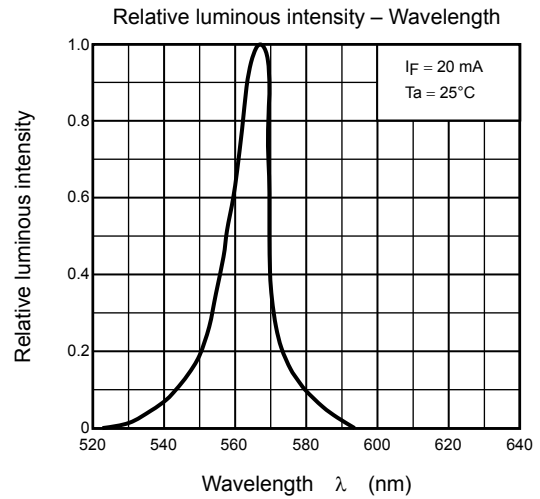
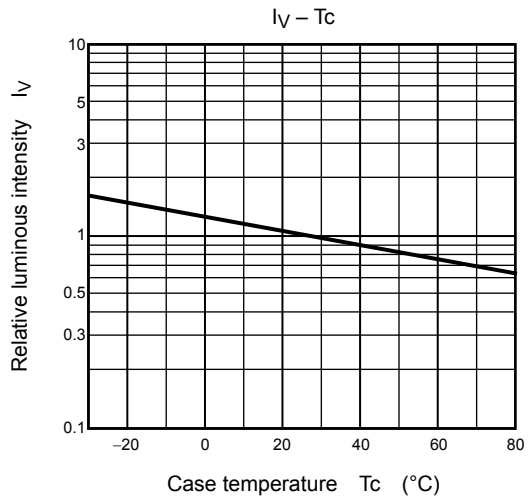
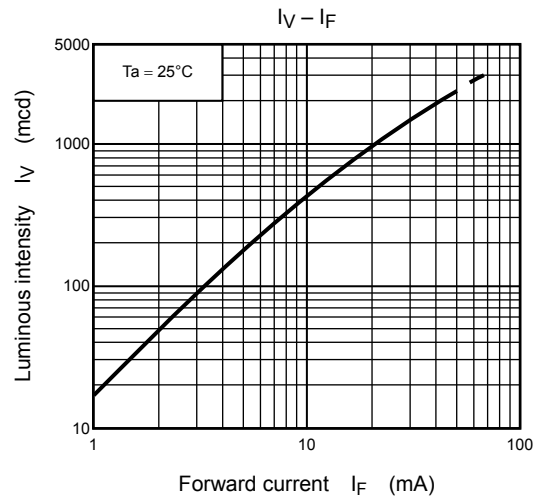
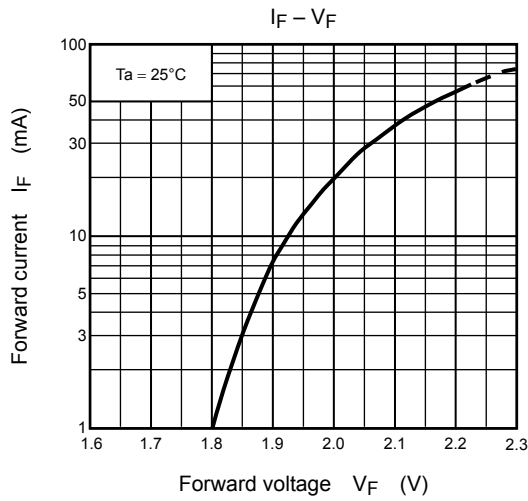
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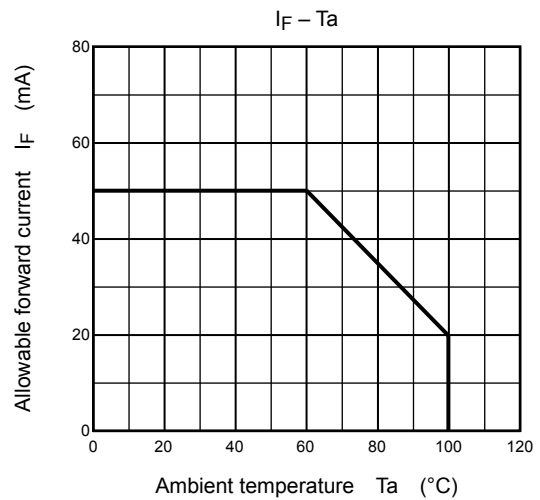
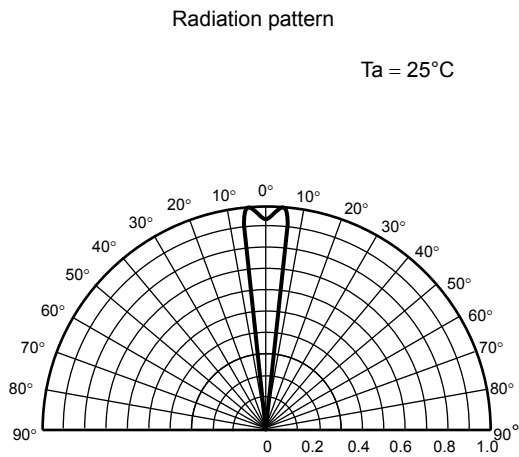
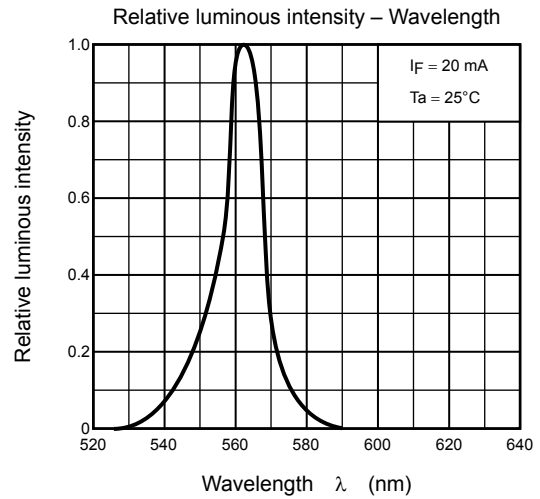
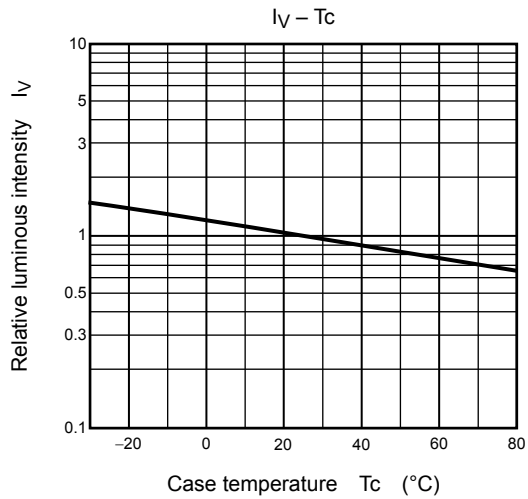
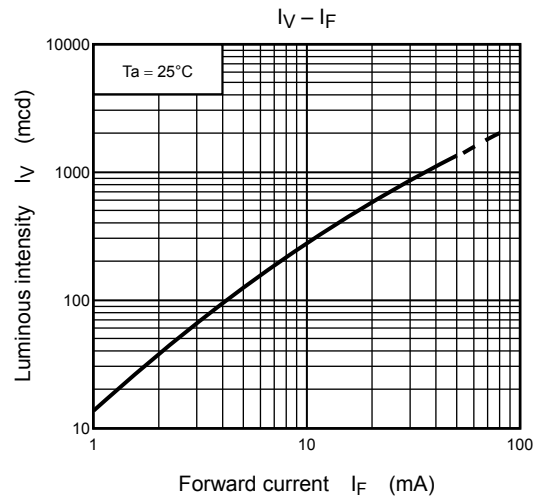
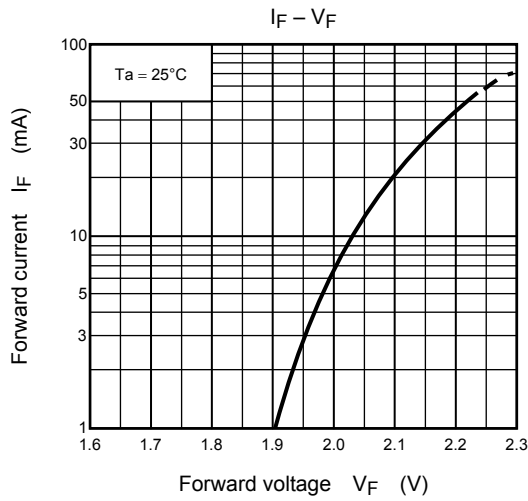
TLGE50T(F)



TLFGE50T(F)



TLPGE50T(F)



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.
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