

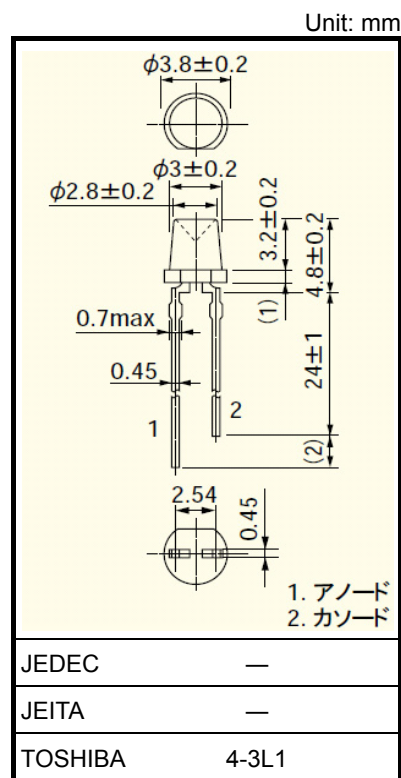
# TLRE60T(F), TLOE60T(F), TLYE60T(F), TLGE60T(F)

### Panel Circuit Indicators

- Lead(Pb)-free products (lead: Sn-Ag-Cu)
- 3mm package
- InGaAlP technology
- All plastic mold type
- Transparent lens
- Lineup: 4 colors (red, orange, yellow and green)
- High intensity light emission
- Excellent low current light output
- Wide radiation pattern
- Applications: backlighting

### Lineup

Product Name	Color	Material
TLRE60T(F)	Red	InGaAlP
TLOE60T(F)	Orange	
TLYE60T(F)	Yellow	
TLGE60T(F)	Green	



Weight: 0.12 g(Typ.)

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

Product Name	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)
TLRE60T(F)	50	4	120	-40~100	-40~120
TLOE60T(F)					
TLYE60T(F)					
TLGE60T(F)					

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)**

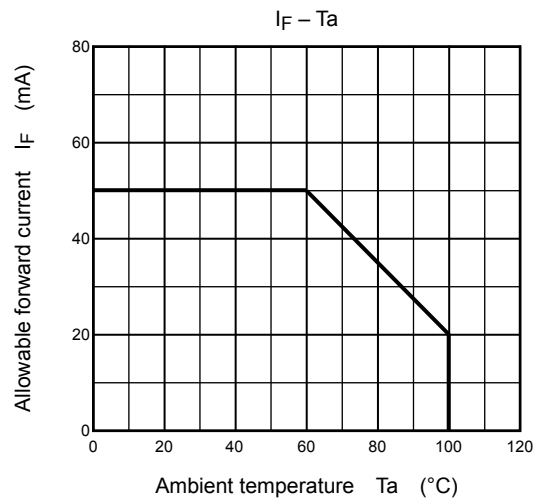
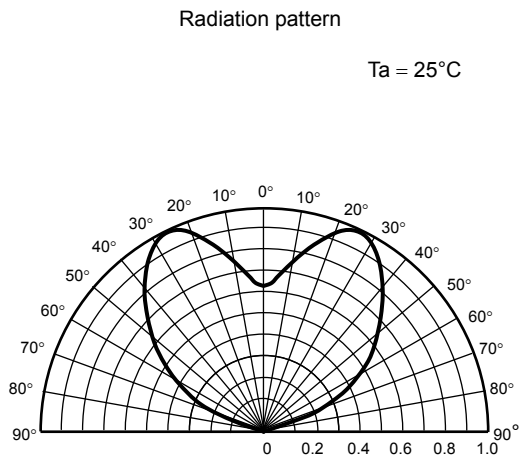
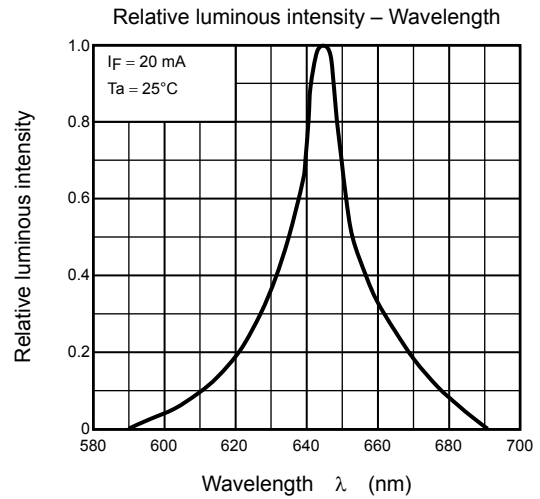
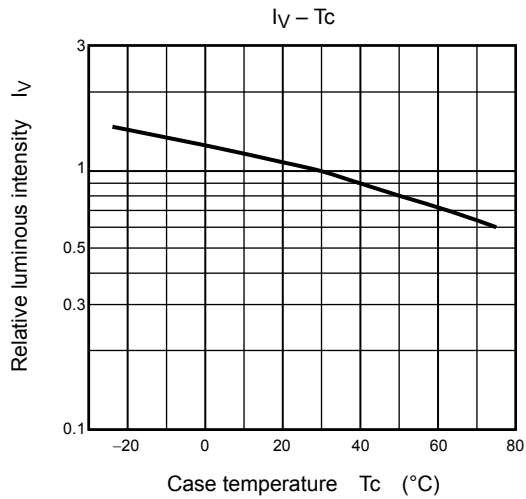
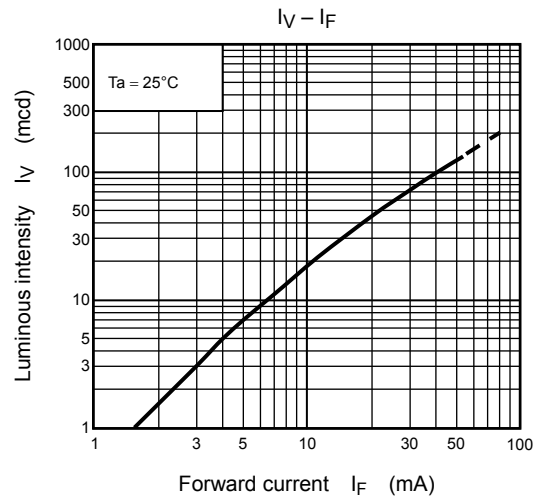
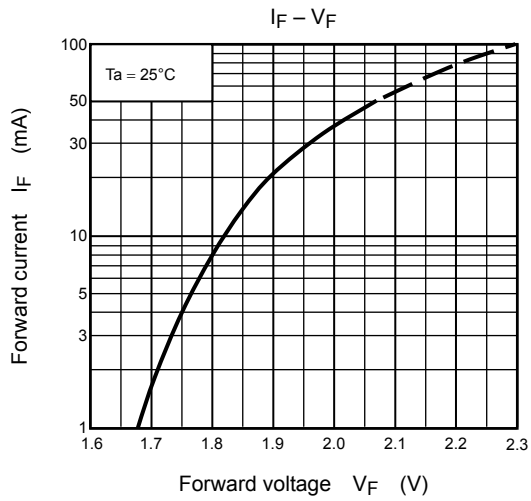
Product Name	Typ. Emission Wavelength				Luminous Intensity I <sub>V</sub>			Forward Voltage V <sub>F</sub>			Reverse Current I <sub>R</sub>	
	λ <sub>d</sub>	λ <sub>p</sub>	Δλ	I <sub>F</sub>	Min	Typ.	I <sub>F</sub>	Min	Typ.	I <sub>F</sub>	Max	V <sub>R</sub>
TLRE60T(F)	630	(644)	20	20	15.3	45	20	1.9	2.4	20	50	4
TLOE60T(F)	605	(612)	20	20	27.2	100	20	2.0	2.4	20	50	4
TLYE60T(F)	587	(590)	17	20	27.2	85	20	2.0	2.4	20	50	4
TLGE60T(F)	571	(574)	17	20	15.3	50	20	2.0	2.4	20	50	4
Unit	nm			mA	mcd		mA	V		mA	μA	V

**Precautions**

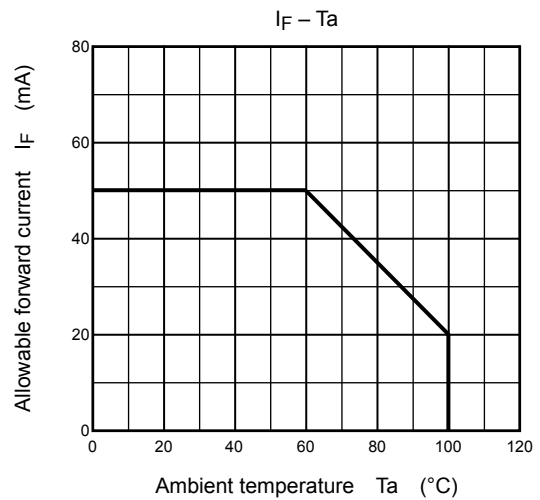
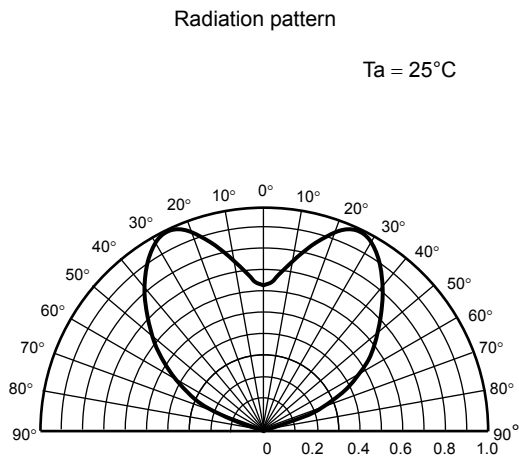
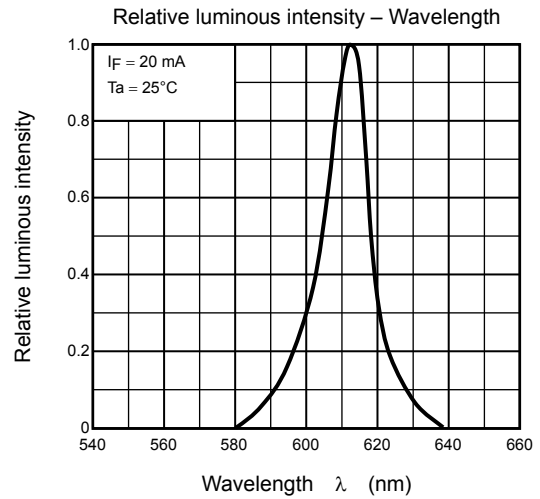
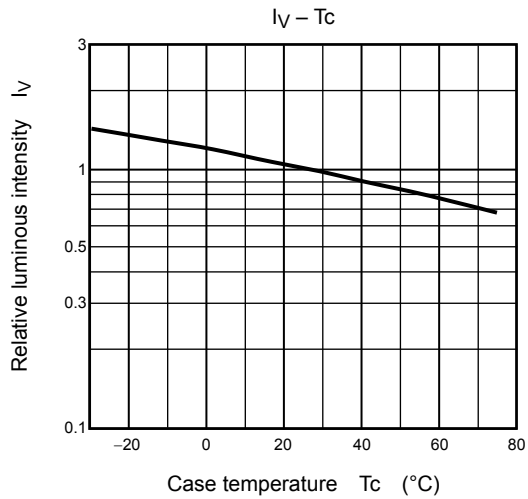
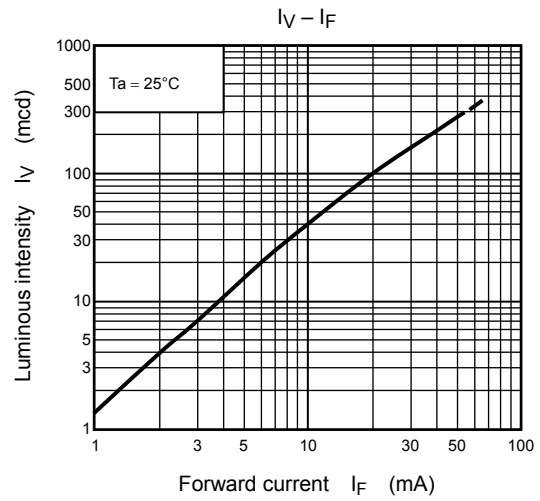
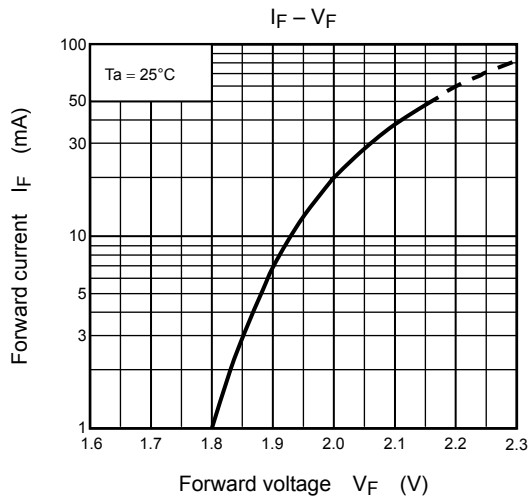
Please be careful of the following:

- 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.

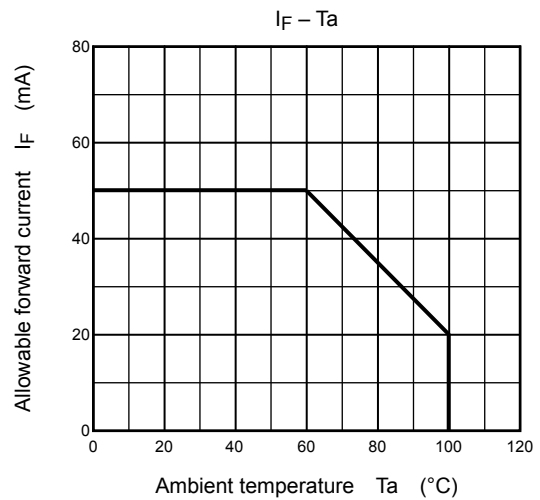
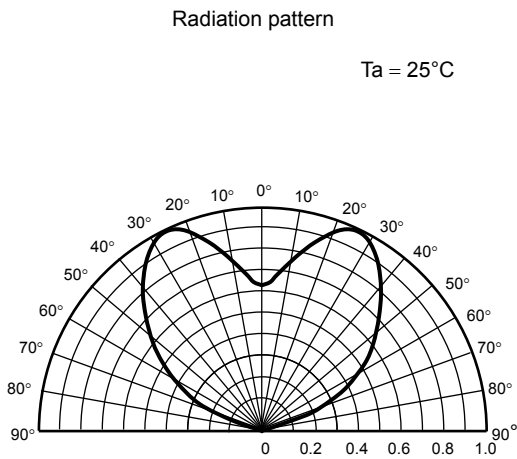
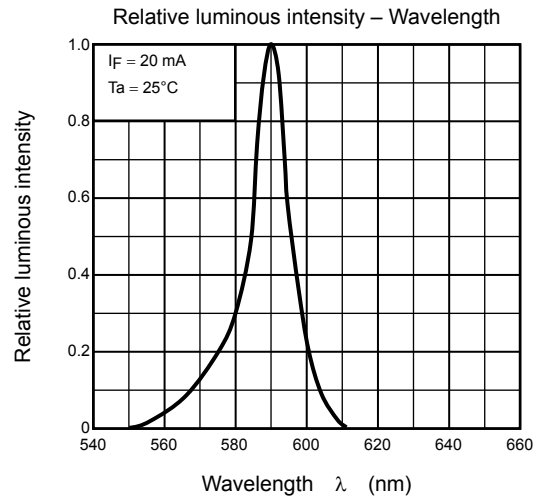
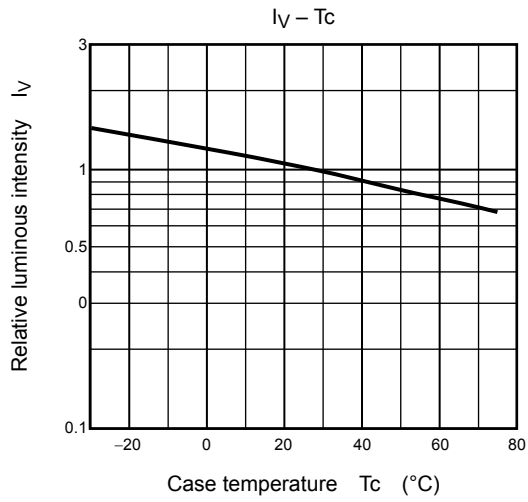
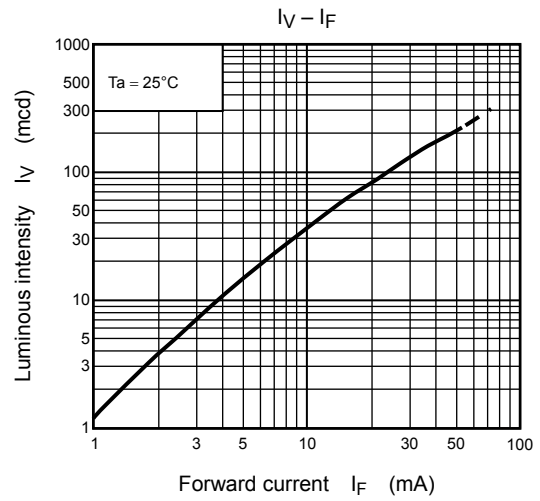
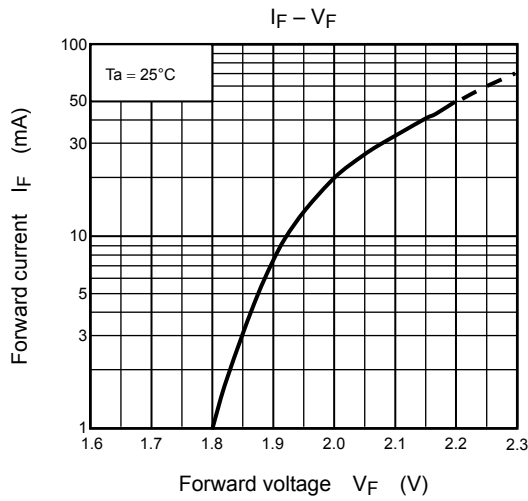
**TLRE60T(F)**



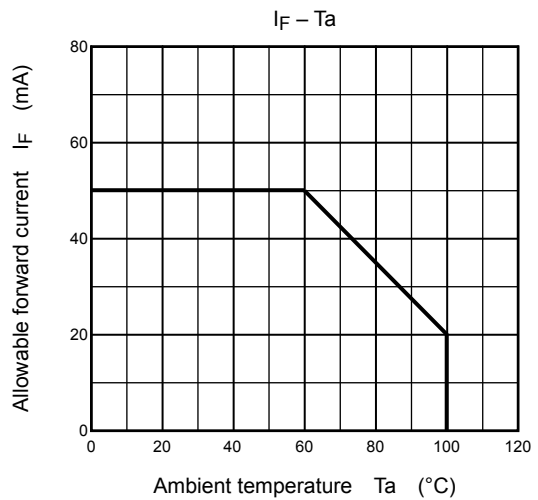
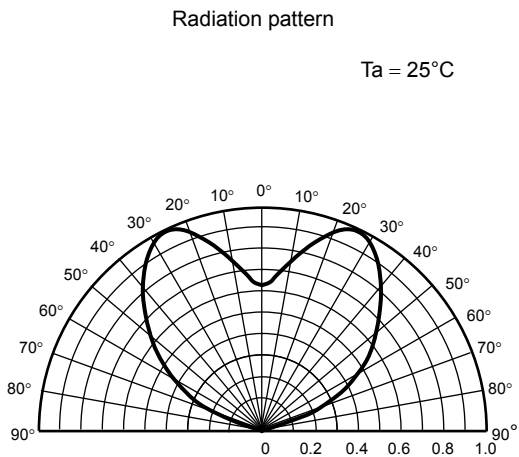
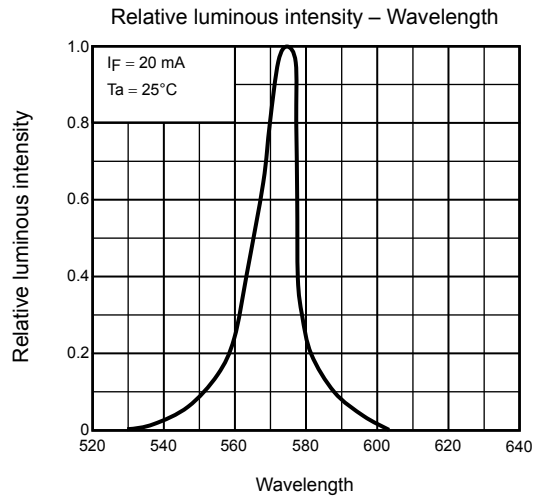
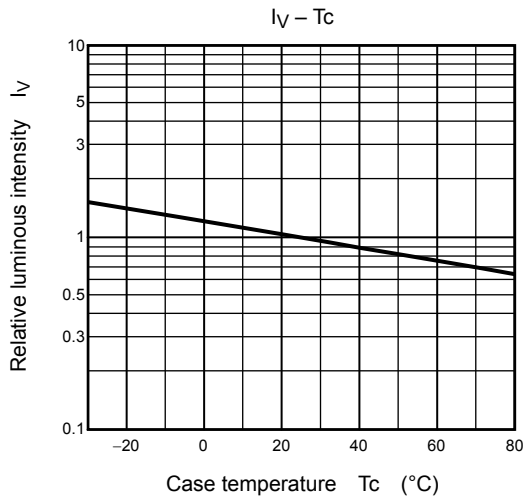
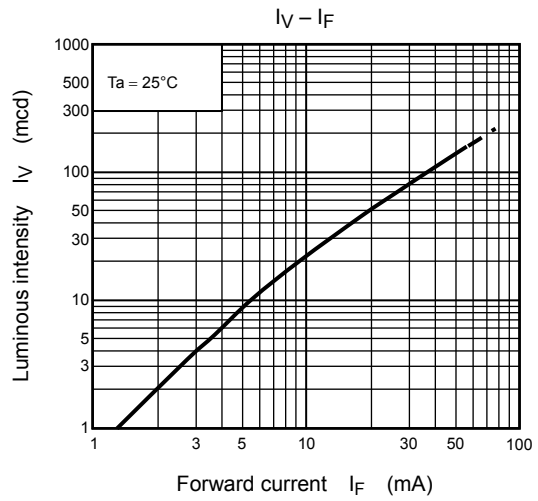
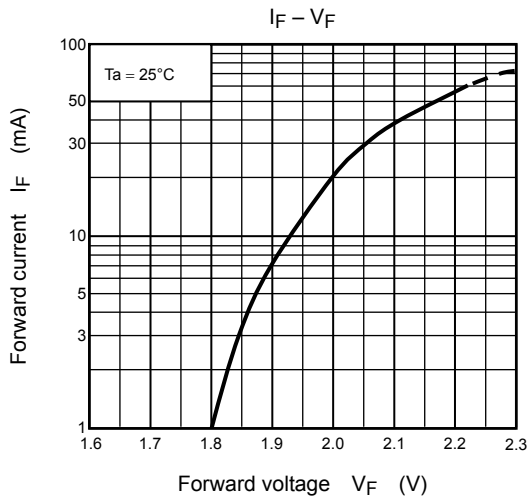
**TLOE60T(F)**



**TLYE60T(F)**



**TLGE60T(F)**



**RESTRICTIONS ON PRODUCT USE**

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