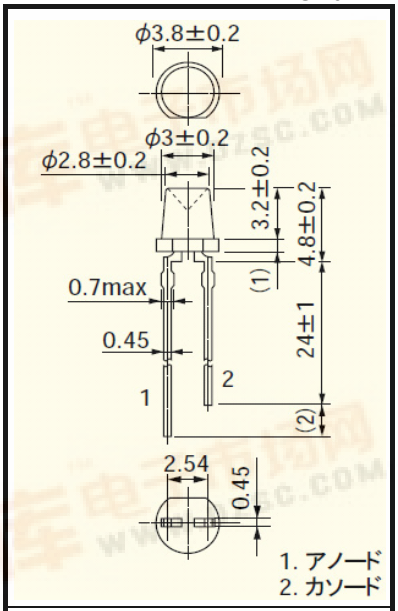
TOSHIBA InGaAℓP LED

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

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	4-3L1

Weight: 0.12 g(Typ.)

Lineup

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

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)
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_V			Forward Voltage V_F			Reverse Current I_R	
	λ_d	λ_P	$\Delta\lambda$	I_F	Min	Typ.	I_F	Min	Typ.	I_F	Max	V_R
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

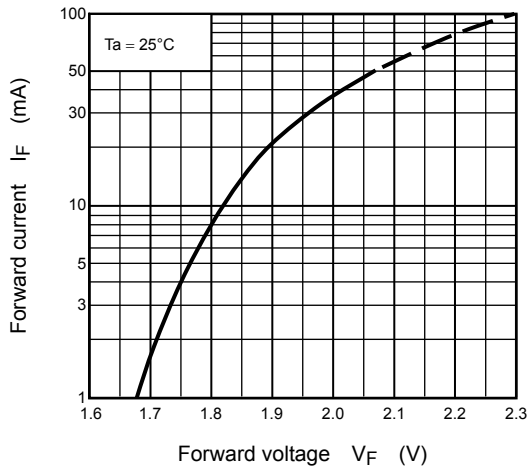
Precautions

Please be careful of the following:

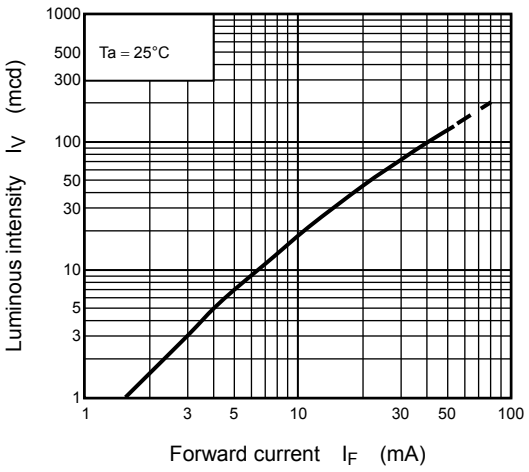
- Soldering temperature: 260°C max, soldering time: 3 s max
  (soldering portion of lead: up to 1.6 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 1.6 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead 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)

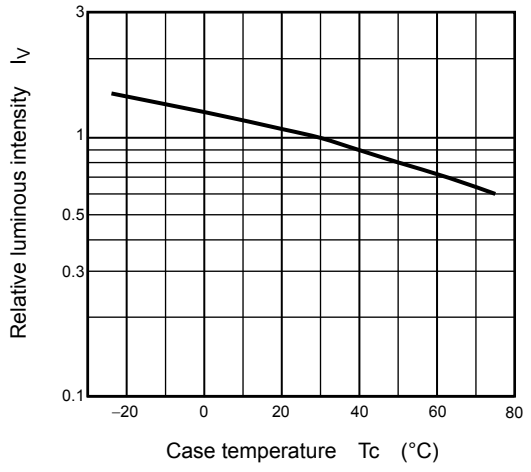
$I_F - V_F$



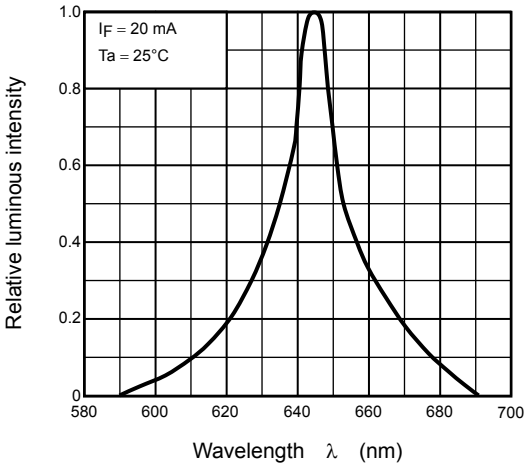
$I_V - I_F$



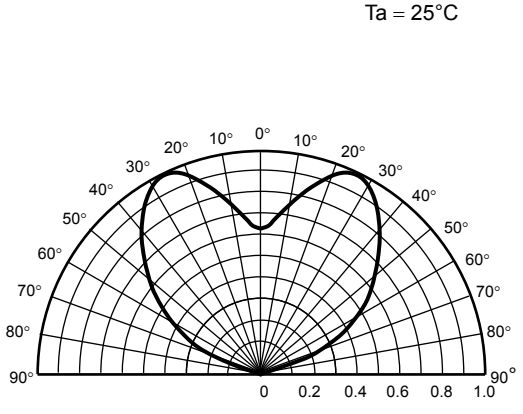
$I_V - Tc$



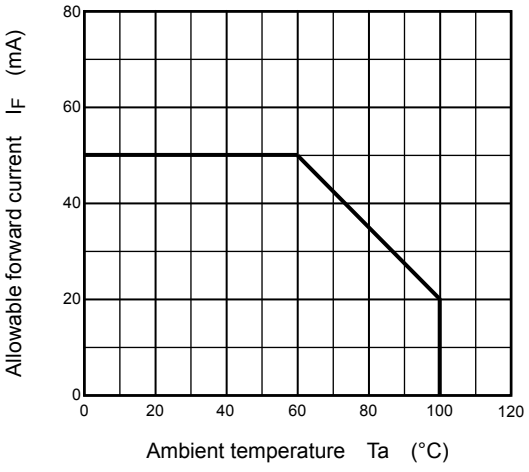
Relative luminous intensity – Wavelength



Radiation pattern

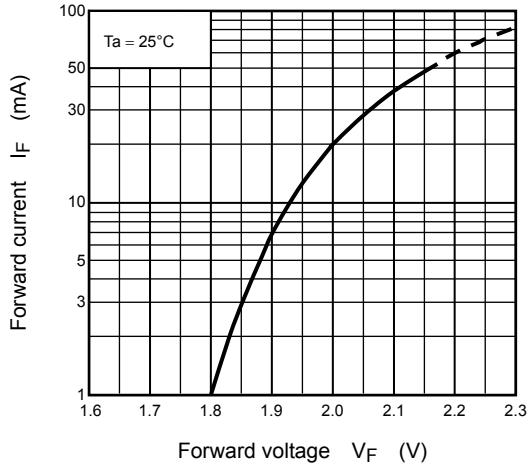


$I_F - Ta$

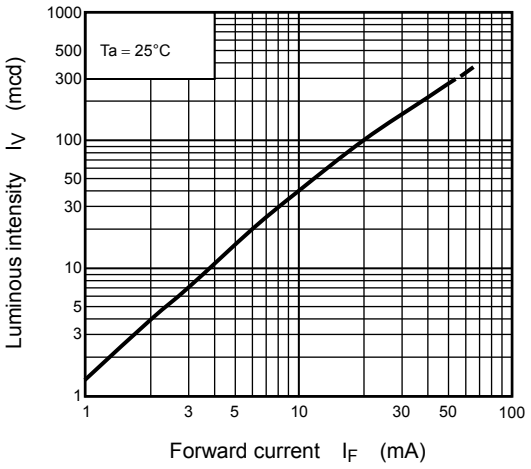


TLOE60T(F)

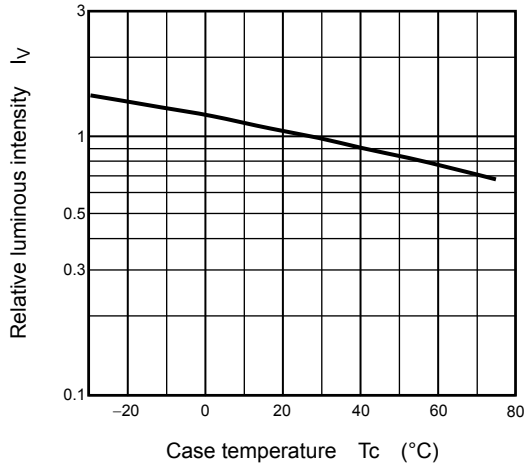
$I_F - V_F$



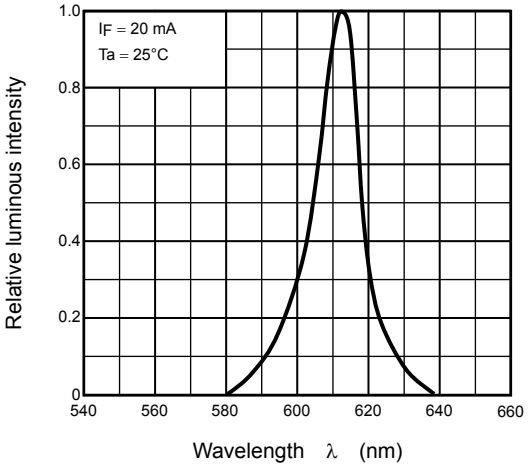
$I_V - I_F$



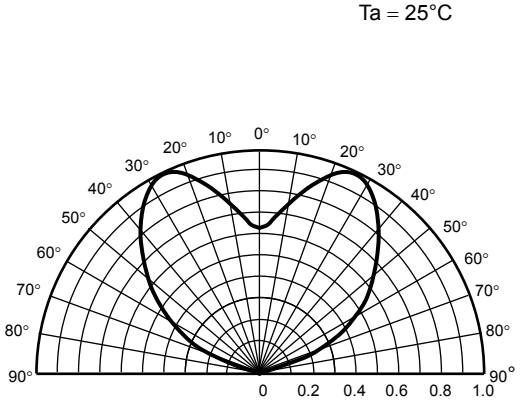
$I_V - Tc$



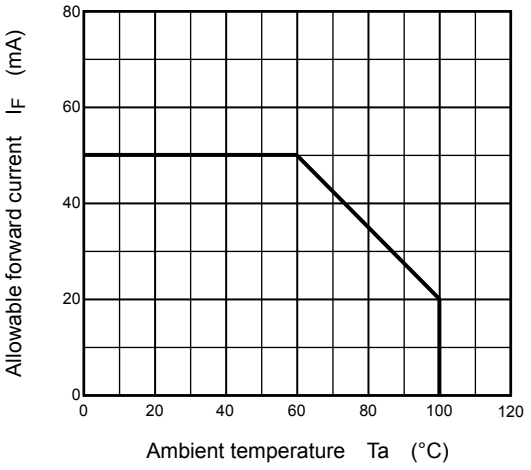
Relative luminous intensity – Wavelength



Radiation pattern

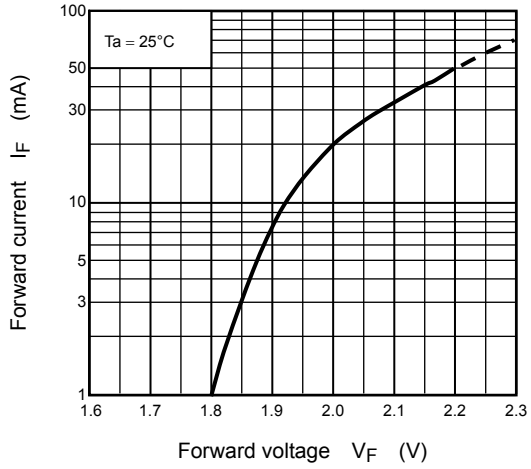


$I_F - Ta$

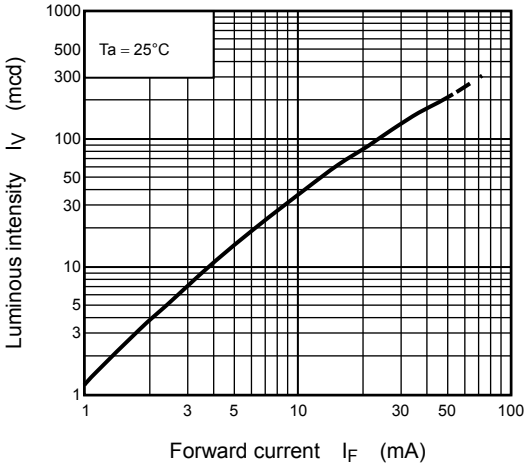


TLYE60T(F)

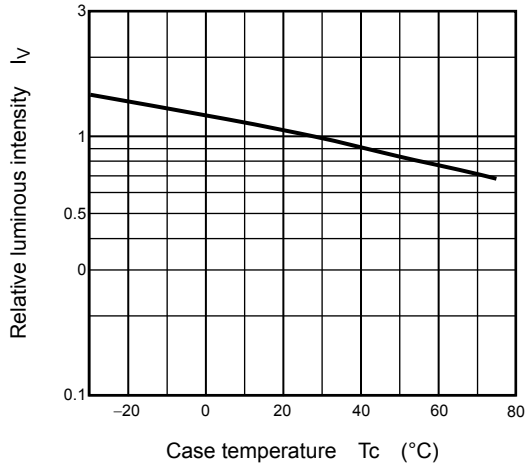
$I_F - V_F$



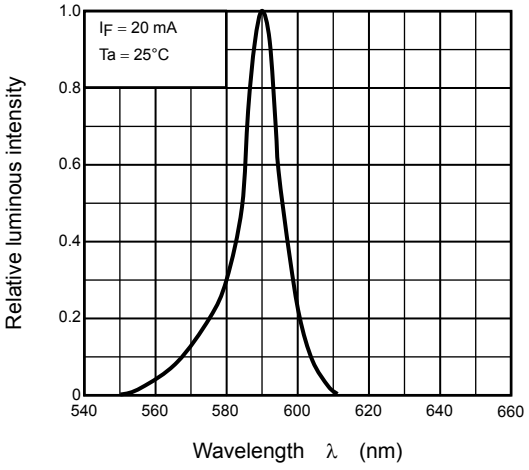
$I_V - I_F$



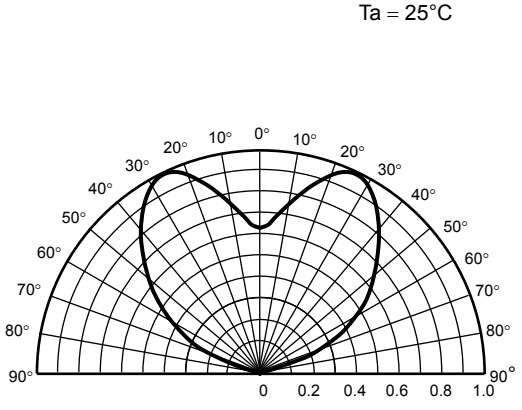
$I_V - Tc$



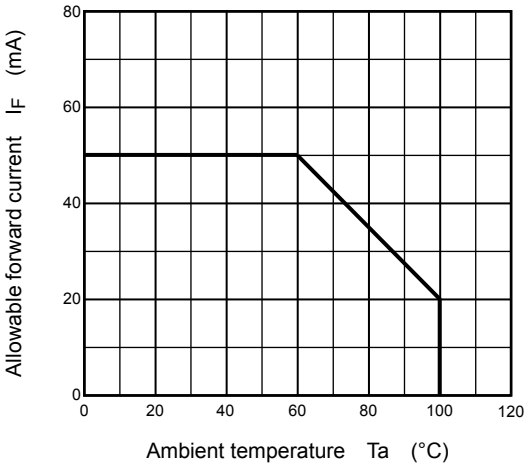
Relative luminous intensity – Wavelength



Radiation pattern

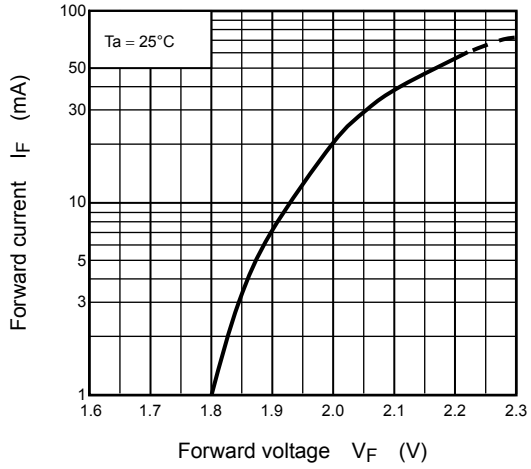


$I_F - Ta$

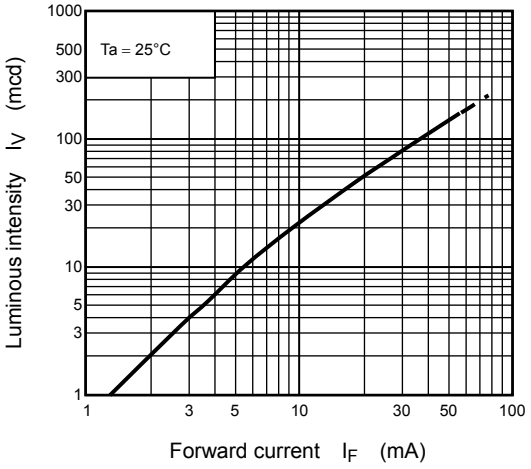


TLGE60T(F)

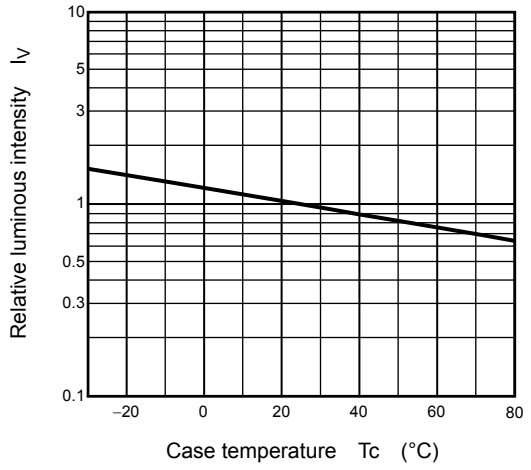
$I_F - V_F$



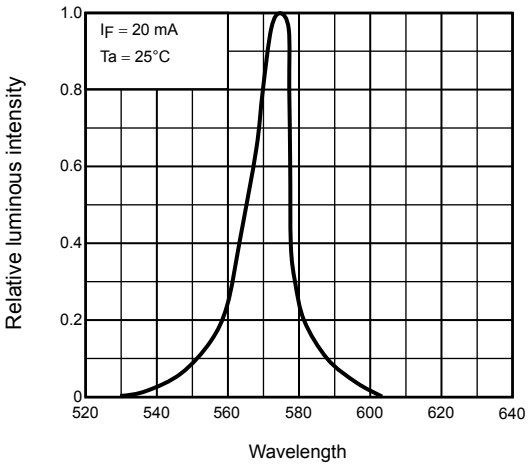
$I_V - I_F$



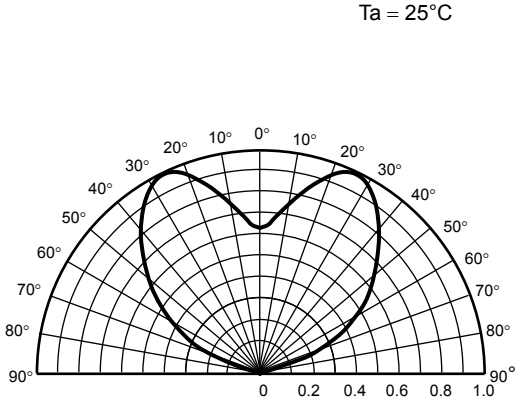
$I_V - Tc$



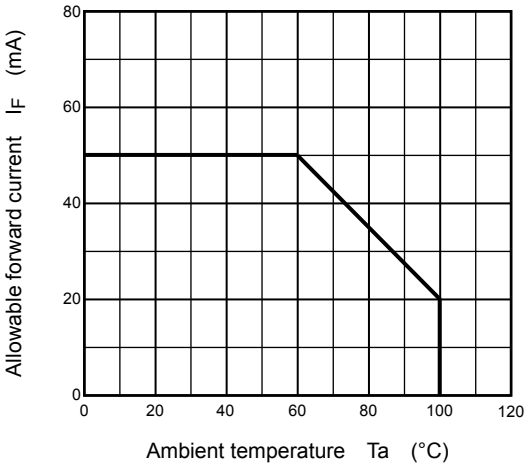
Relative luminous intensity – Wavelength



Radiation pattern



$I_F - Ta$



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20070701-EN

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