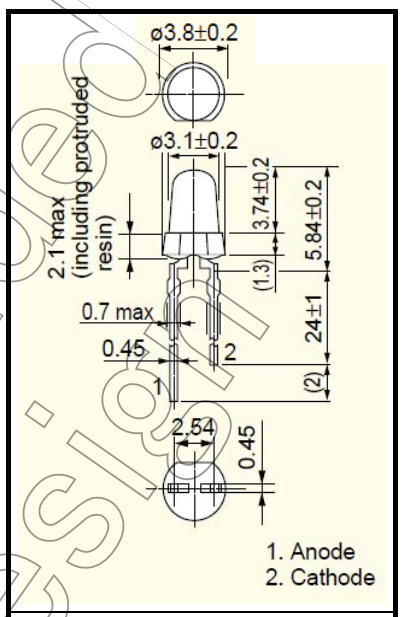
TOSHIBA InGaAℓP LED

TLRH50T(F),TLSH50T(F),TLOH50T(F),TLYH50T(F)

Panel Circuit Indicators

- ϕ3-mm package
- InGaAℓP technology
- Transparent lens
- Emitted colors: red, orange, yellow
- High luminous intensity
- High optical output power at low current
- Applications: message boards, pilot lamps, etc.

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	4-3E1A

Weight: 0.14 g (typ.)

Color and Material

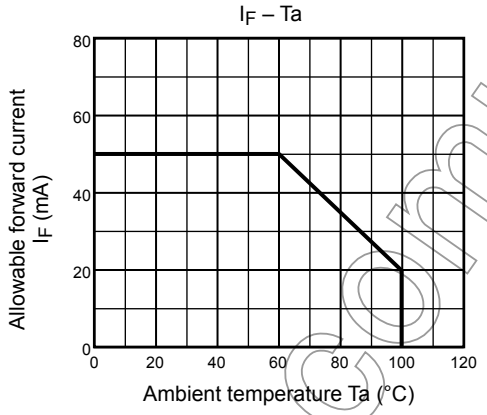
Part Number	Color	Material
TLRH50T(F)	Red	InGaAℓP
TLSH50T(F)		
TLOH50T(F)	Orange	
TLYH50T(F)	Yellow	

Absolute Maximum Ratings (Ta = 25°C)

Part Number	Forward Current I_F (mA) (Note 1)	Reverse Voltage V_R (V)	Power Dissipation P_D (mW)	Operating Temperature T_{opr} (°C)	Storage Temperature T_{stg} (°C)
TLRH50T(F)	50	4	120	−40 to 100	−40 to 120
TLSH50T(F)					
TLOH50T(F)					
TLYH50T(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).

Note 1: Forward current derating



Electrical and Optical Characteristics (Ta = 25°C)

Part Number	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	Typ.	Max	I_F	Max	V_R
TLRH50T(F)	630	644	13	20	850	2000	20	1.9	2.4	20	50	4
TLSH50T(F)	613	623	13	20	2720	4700	20	2.0	2.4	20	50	4
TLOH50T(F)	605	612	13	20	1530	5800	20	2.0	2.4	20	50	4
TLYH50T(F)	587	590	13	20	1530	4400	20	2.0	2.4	20	50	4
Unit		nm		mA	mcd		mA	V		mA	μA	V

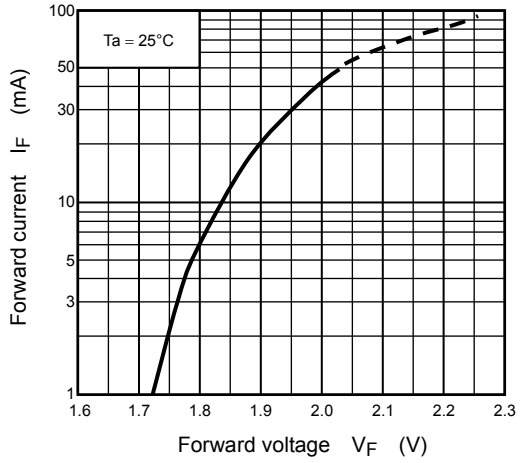
Precautions

Please be careful of the following:

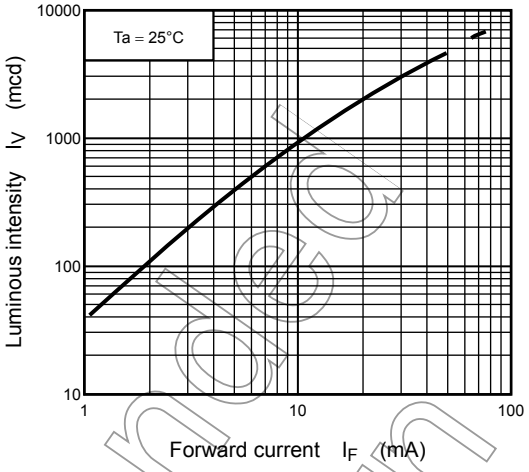
- Soldering temperature：260°C max, soldering time：3 seconds max
  (Soldering portion of lead：up to 1.6 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 1.6 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead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

TLRH50T(F)

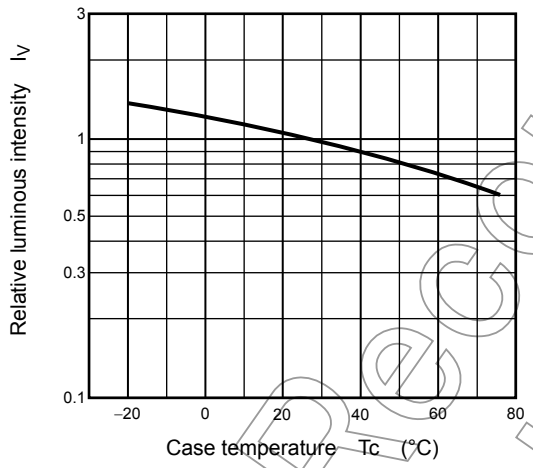
$I_F - V_F$



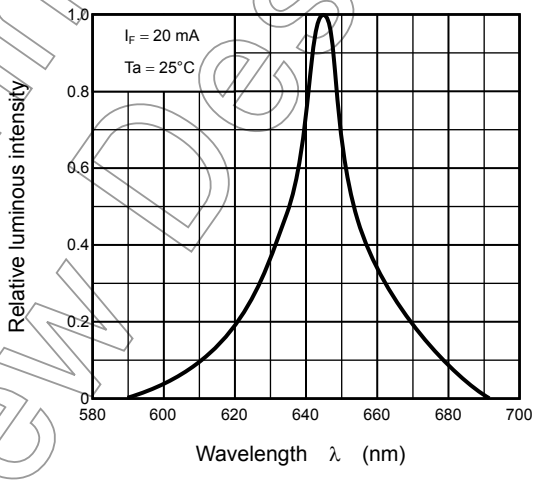
$I_V - I_F$



$I_V - Tc$

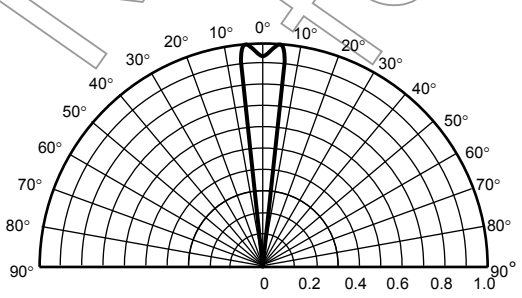


Relative luminous intensity – Wavelength



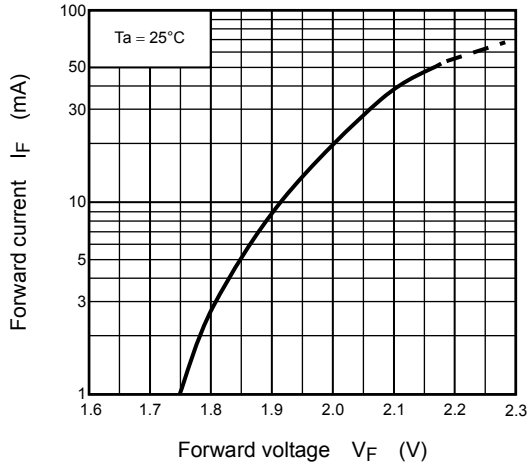
Radiation pattern

Ta = 25°C

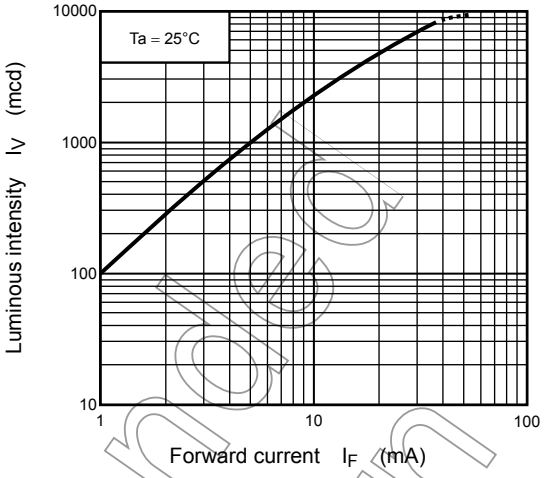


TLSH50T(F)

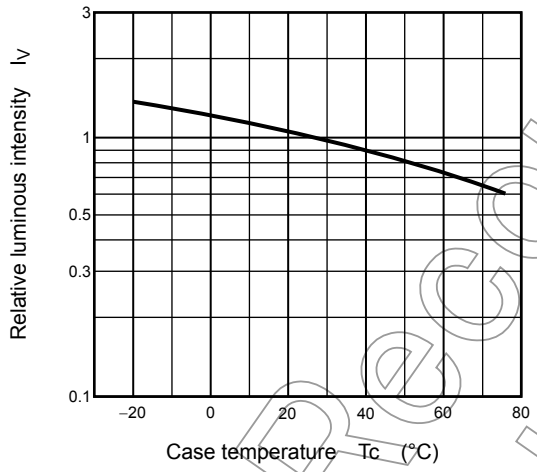
$I_F - V_F$



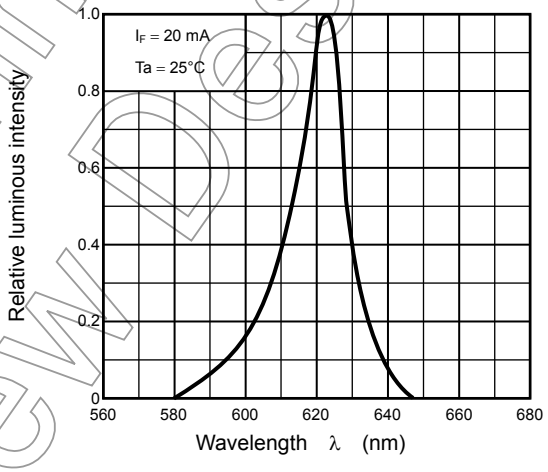
$I_V - I_F$



$I_V - Tc$

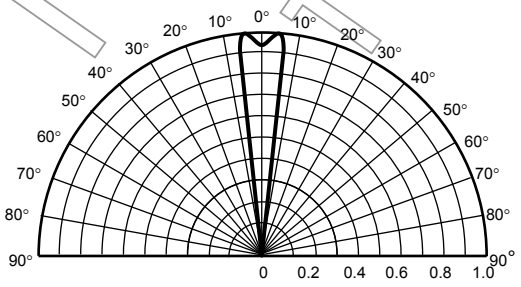


Relative luminous intensity – Wavelength



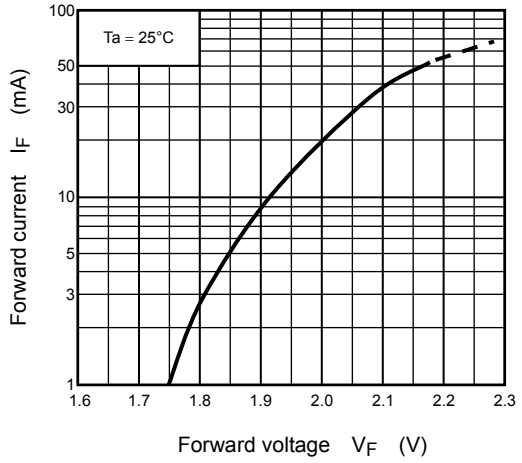
Radiation pattern

Ta = 25°C

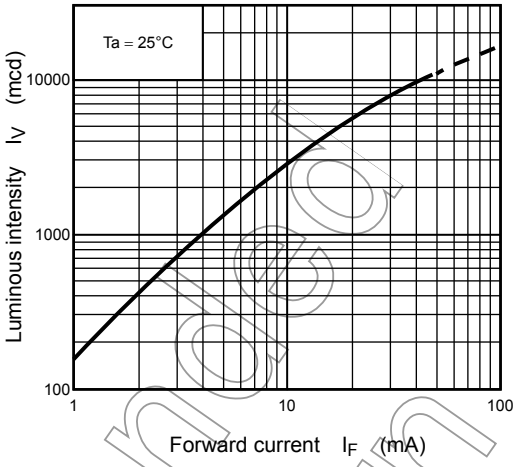


TLOH50T(F)

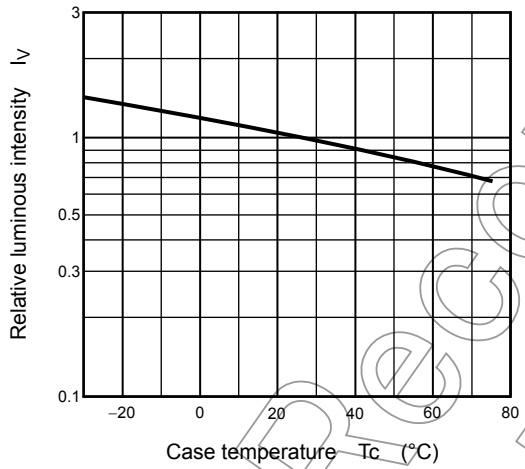
$I_F - V_F$



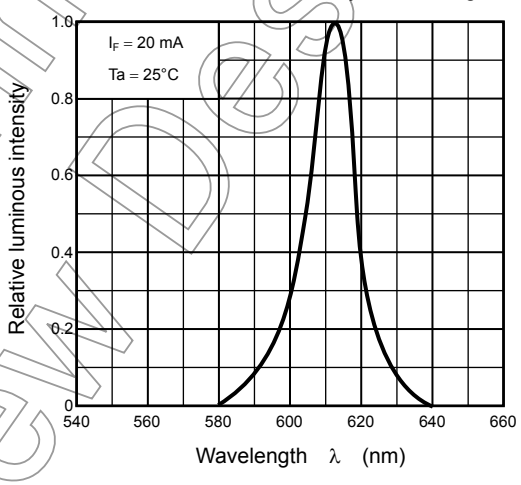
$I_V - I_F$



$I_V - Tc$

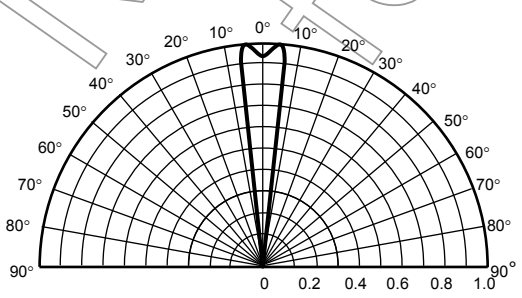


Relative luminous intensity – Wavelength



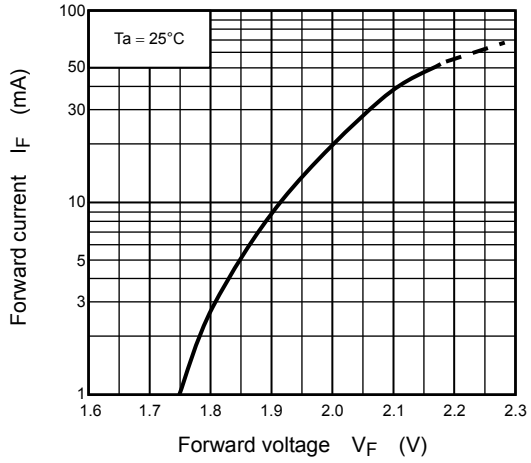
Radiation pattern

Ta = 25°C

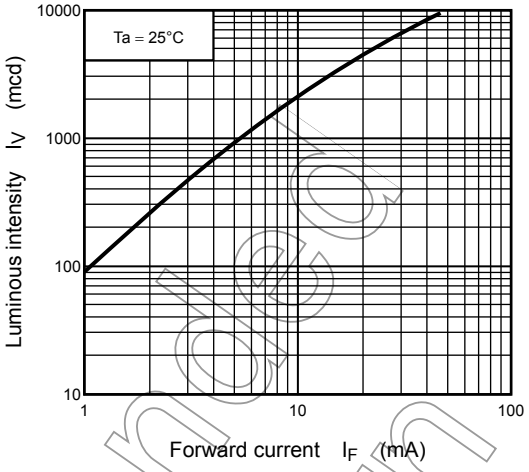


TLYH50T(F)

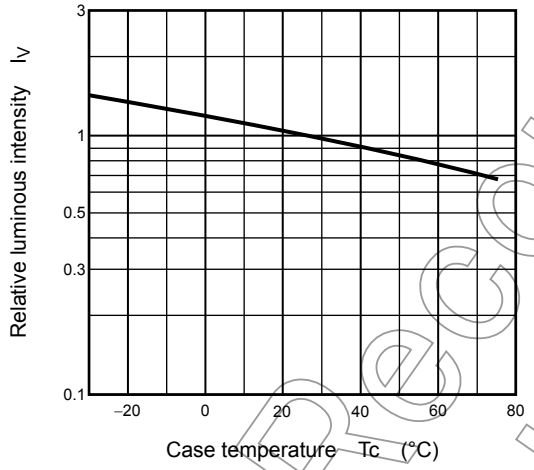
$I_F - V_F$



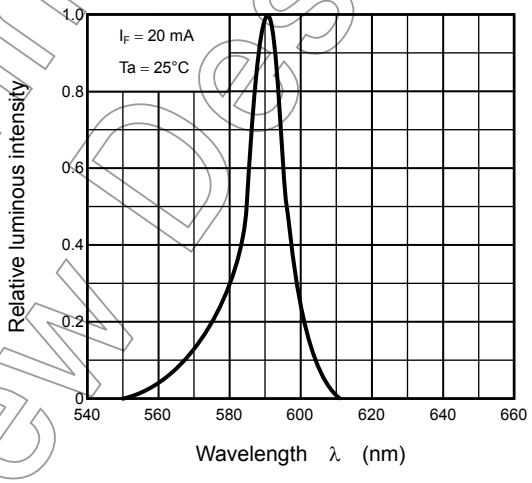
$I_V - I_F$



$I_V - Tc$

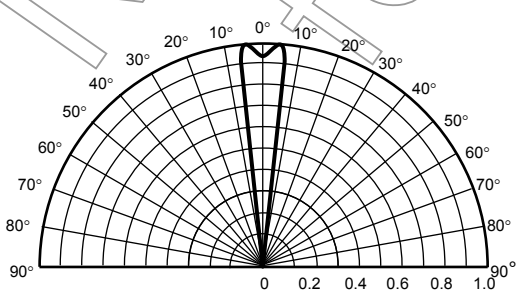


Relative luminous intensity – Wavelength



Radiation pattern

Ta = 25°C



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