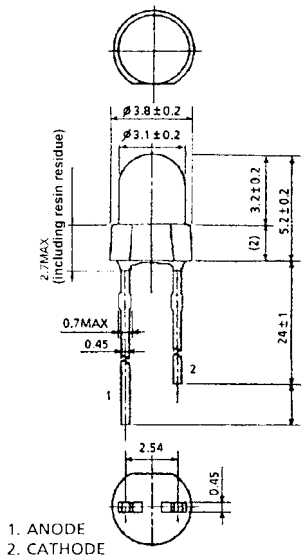
TOSHIBA InGaAℓP LED

TLSU268G,TLRME68TG,TLYE68TG,TLGE68TG

LED Lamps for mounting on through-hole PCB using an automatic insertion machine

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	—

Weight: 0.15 g

- φ3 mm wide viewing angle
- Can be mounted on a PCB using an automatic insertion machine (please refer to mounting Precautions Using an Automatic Insertion Machine)
- InGaAℓP
- Emitted colors: red, yellow and green
- Transparent lens
- Applications: Various types of information panels, indicators for amusement equipment and panel backlighting illumination sources

Line-up

Product Name	Color	Material
TLSU268G	Red	InGaAλP
TLRME68TG	Red (high-brightness)	
TLYE68TG	Yellow	
TLGE68TG	Green	

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 Tstg (°C)
TLSU268G	30	4	72	−30~85	−40~120
TLRME68TG	50	4	120	−40~100	−40~120
TLYE68TG	50	4	120		
TLGE68TG	50	4	120		

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	Typ.	Max	I_F	Max	V_R
TLSU268G	623	(636)	17	20	47.6	130	20	2.0	2.4	20	50	4
TLRME68TG	626	(636)	17	20	85	330	20	2.0	2.4	20	50	4
TLYE68TG	587	(590)	17	20	85	340	20	2.0	2.4	20	50	4
TLGE68TG	571	(574)	17	20	47.6	155	20	2.0	2.4	20	50	4
Unit	nm			mA	mcd		mA	V		mA	μA	V

Precautions

- These LED lamps made of InGaAlP will also emit some IR light. If a photodetector is located near an LED lamp, please ensure that it will not be affected by this IR light.
- Manual soldering should be performed within 3 s at a maximum temperature of 300°C or 5 s at a maximum temperature of 260°C.
- When forming the leads, bend each lead without applying any forming stress. Soldering must be performed after the leads have been formed.

Mounting Precautions Using an Automatic Insertion Machine

(1) These newly designed LED lamps are intended for mounting on both through-hole PCBs by means of an automatic mounting machine. Compared to conventional ϕ3-mm LED lamps, they are less prone to the effects of stress during automatic mounting (such as mechanical stress within the package resin transmitted via the leads). This reduced mechanical stress results in a lower incidence of damage to the package resin and lower emission failure rates. If one of these lamps is subjected to excessive stress, however, the resin part may break or the lamp may be damaged in such a way that it will not emit light.
Please take the following precautions when mounting these devices.

- Toshiba recommends the use of a 0.9-mm PCB hole diameter. However, this recommendation is subject to the type of automatic mounting machine used, the board material and the way in which the board material has been processed. Please evaluate the mounting process carefully before actually using the automatic mounting machine to mount these LED lamps.
  The use of PCB holes with a diameter larger than 0.9 mm may result in increased stress when soldering is performed (depending on the lead cutting shape and the clinching method), and devices may easily be malfunction.
- The insertion pressure and clinching angle must both be minimized so as to minimize the lead-cutting stress and clinch stress applied to the LED lamps.
- Soldering Conditions

	Preheating	Soldering Flow
Temperature	120~150°C	No more than 260°C
Time	Within 60 seconds	Within 5 seconds

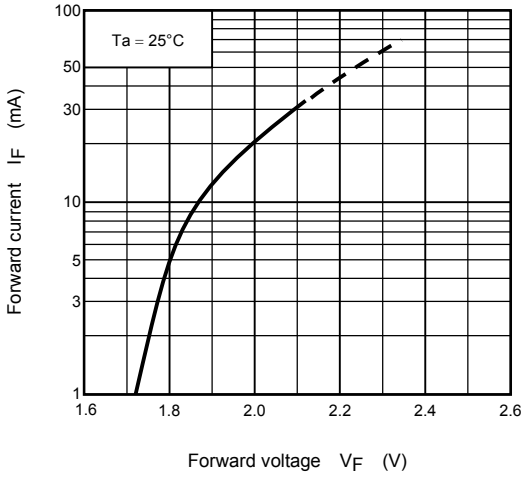
(2) Precautions when using Panasert radial-Taping automatic mounting machine:
Two-lead LED lamps are suitable for mounting using an anvil due to its movable-blade structure.
When using three-lead type, please take the following precautions.

- Synchronize the strokes of the two movable blades to one another as closely as possible.
- Adjust the timings of the movable blades so as to minimize the difference between them. In addition, do not set the anvil in such a way that the anvil's center blade will pull the leads, as this will result in excessive mechanical stress to the LED lamps, which might damage them.
- Avoid any blade which is defective or which shows signs of excessive wear.

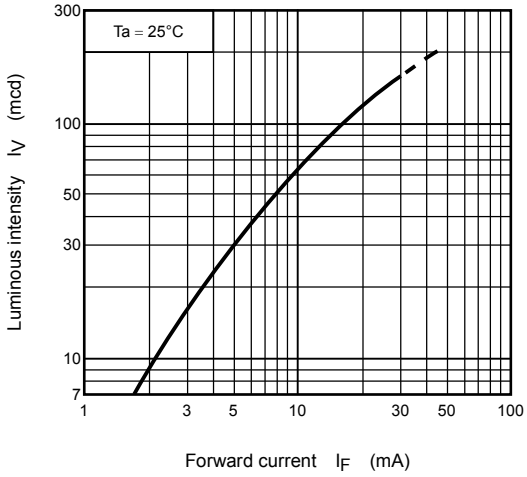
* For using other than Panasert, please refer to the specifications for the automatic mounting machine which is to be used.

TLSU268G

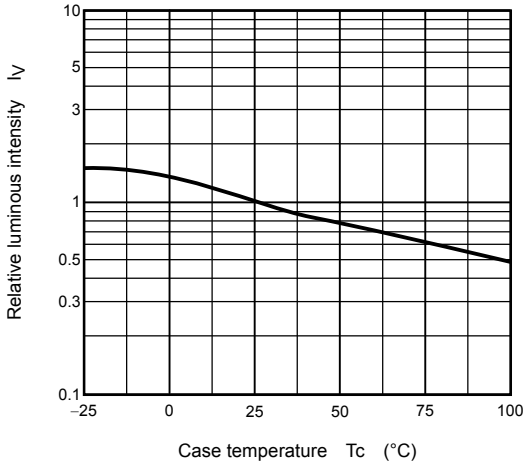
$I_F - V_F$



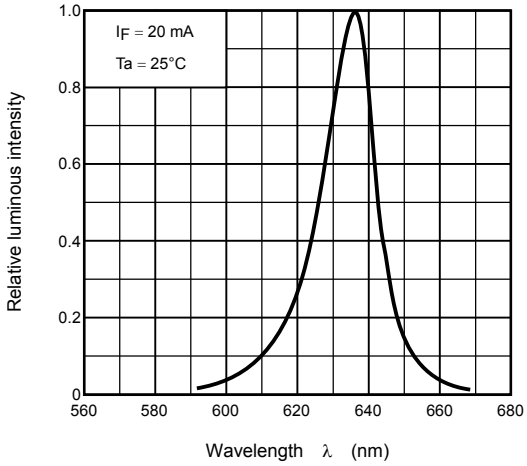
$I_V - I_F$



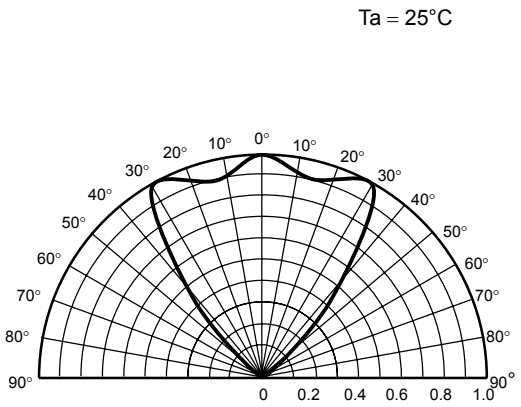
$I_V - Tc$



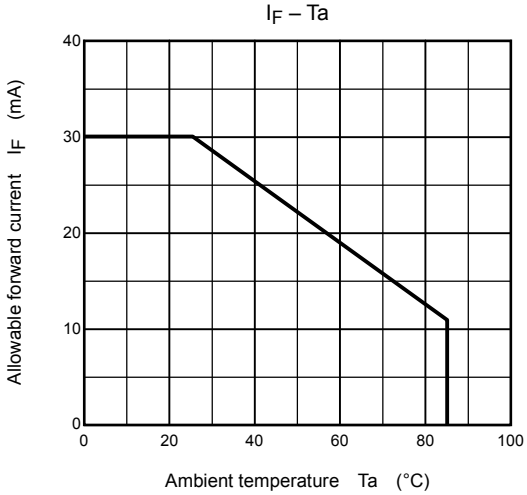
Relative luminous intensity – Wavelength



Radiation pattern

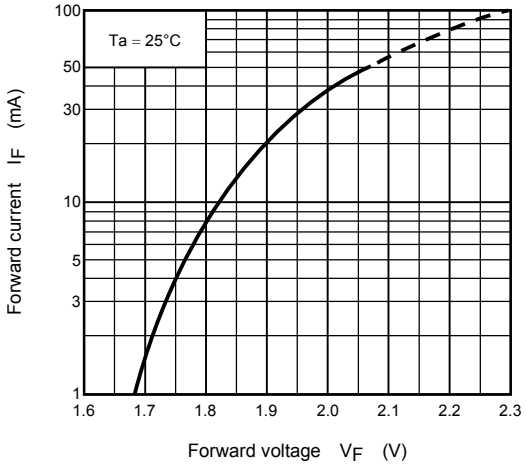


$I_F - Ta$

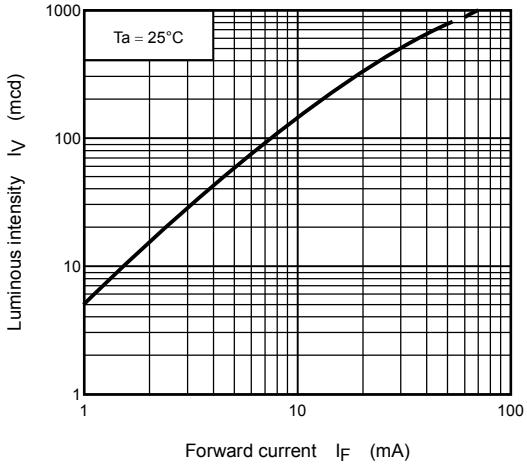


TLRME68TG

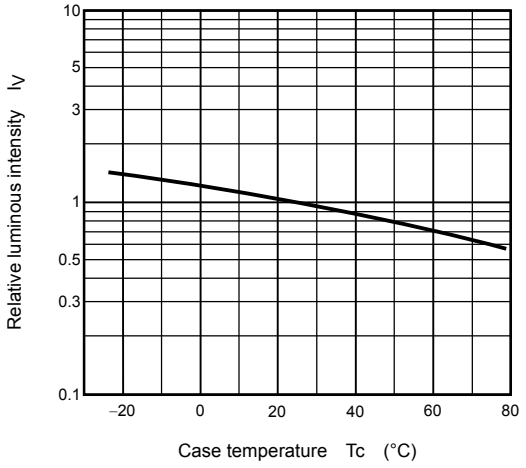
$I_F - V_F$



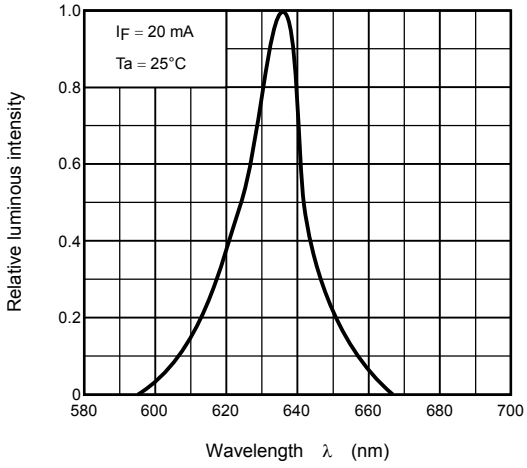
$I_V - I_F$



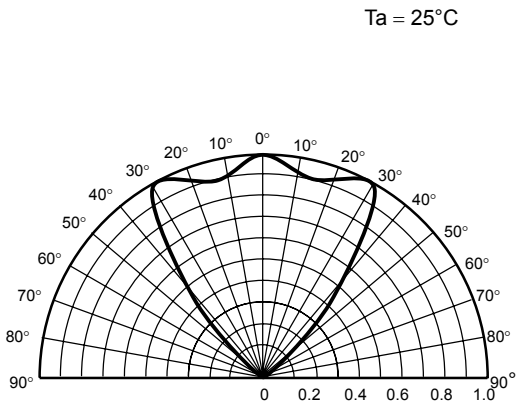
$I_V - Tc$



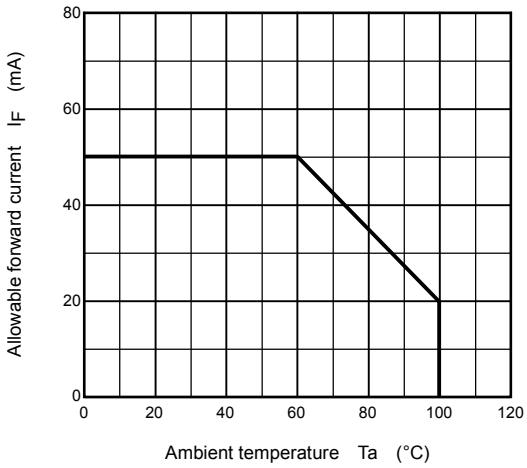
Relative luminous intensity – Wavelength



Radiation pattern

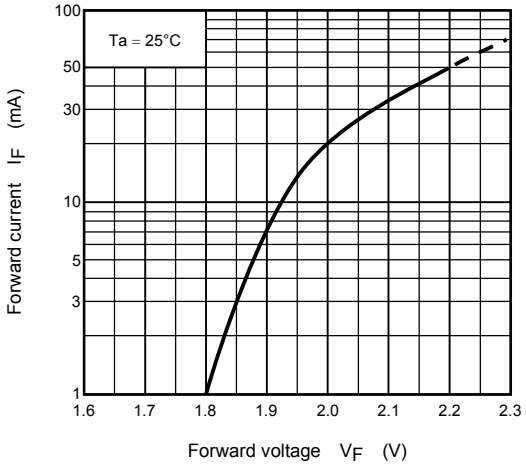


$I_F - Ta$

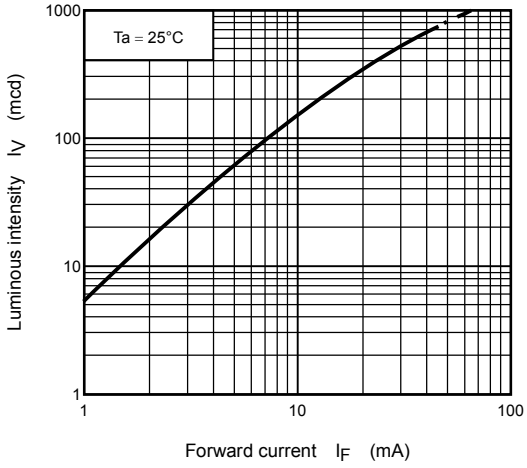


TLYE68TG

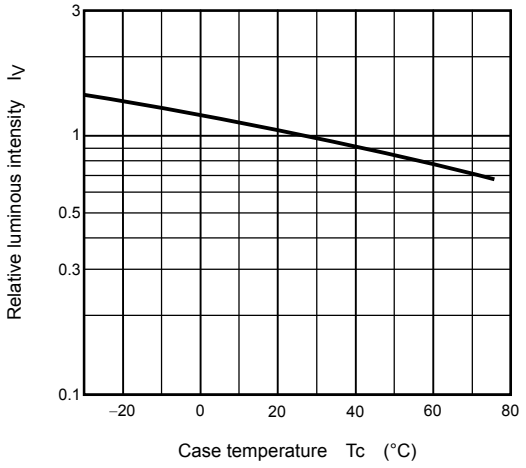
$I_F - V_F$



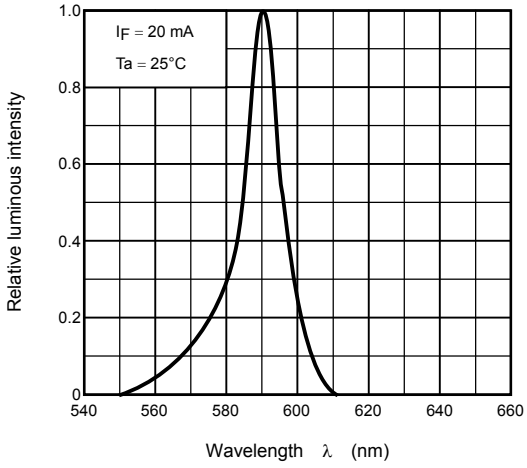
$I_V - I_F$



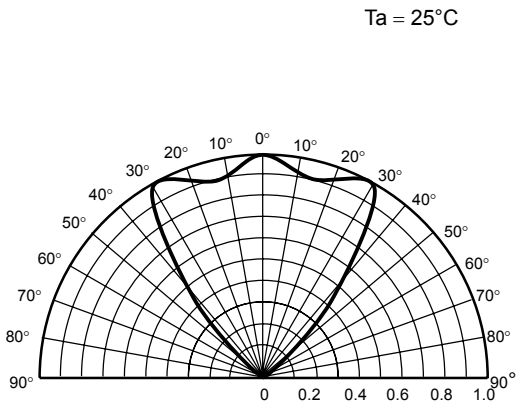
$I_V - Tc$



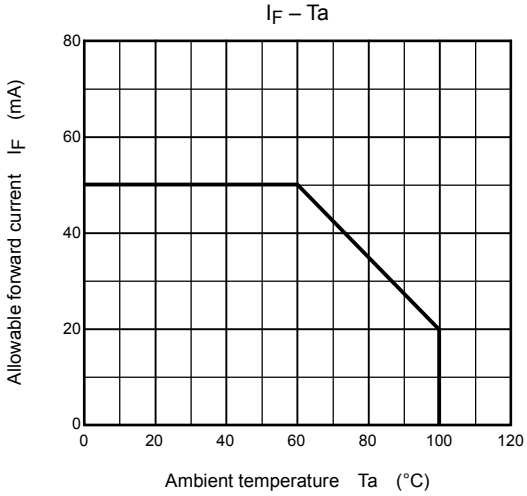
Relative luminous intensity – Wavelength



Radiation pattern

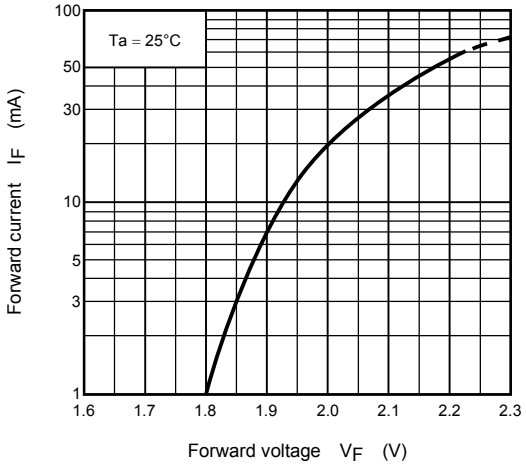


$I_F - Ta$

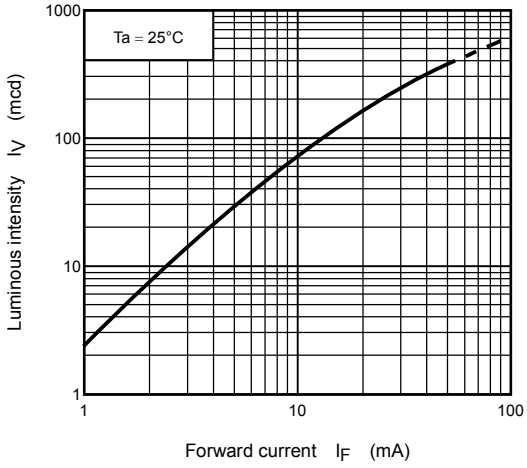


TLGE68TG

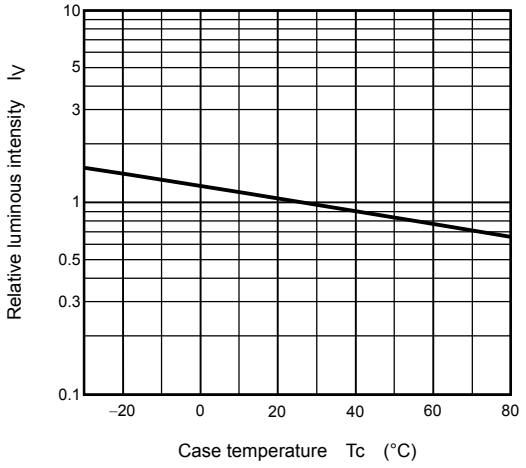
$I_F - V_F$



$I_V - I_F$



$I_V - Tc$



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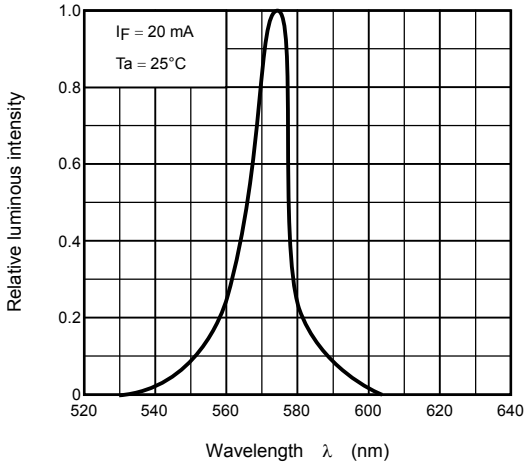
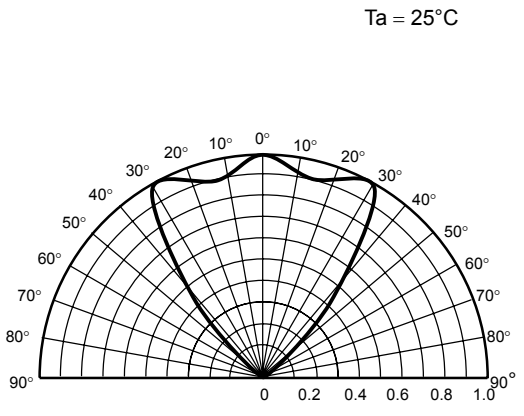
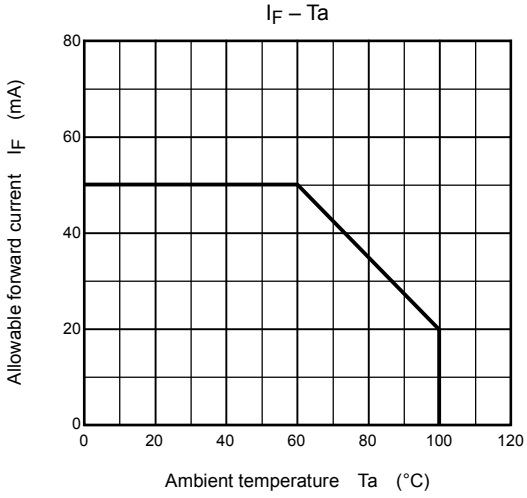


Radiation pattern



$I_F - Ta$



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