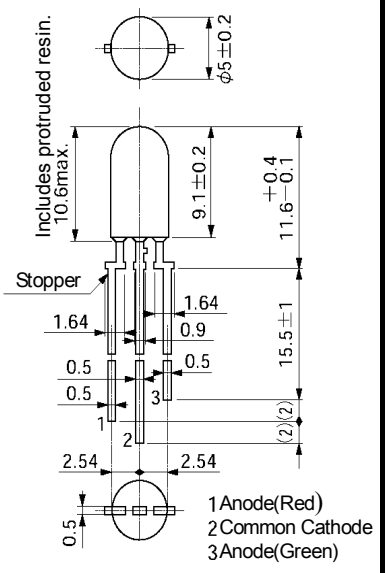
TOSHIBA LED Lamp InGaAℓP Red/Green Light Emission

TLRMHGH48T(F)

○ BI-COLOR HIGH LUMINOSITY INDICATOR

- Lead(Pb) free(Sn-Ag-Cu)
- High Luminous Intensity.
- 5mm package
- InGaAℓP Red/Green LED, the cathode is common to two colors.
- All plastic mold type.
- Transparent Lens.

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	4-5AR1

Weight: 0.37 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

CHARACTERISTICS	SYMBOL	RATING	UNIT
FORWARD CURRENT	I_F	50 (Note)	mA
REVERSE VOLTAGE	V_R	4	V
POWER DISSIPATION	T_{opr}	−40~100	°C
OPERATING TEMPERATURE	T_{stg}	−40~120	°C

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: Maximum rating of “forward current – atmospheric temperature (i.e. IF-Ta graph in the next page)” is for each component.
In case two components lightening, total current should be within the rating.

PRECAUTIONS

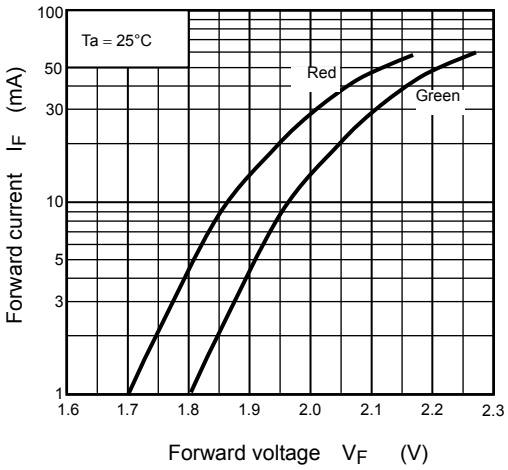
Please be careful of the followings

- Soldering temperature：260 max Soldering time：3 s max (Soldering portion of lead：below the lead stopper of the device)
- If the lead is formed, the lead should be formed up to below the lead stopper of the device without Formed stress to the resin. Soldering should be performed after lead forming.
- The 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 the IR light.

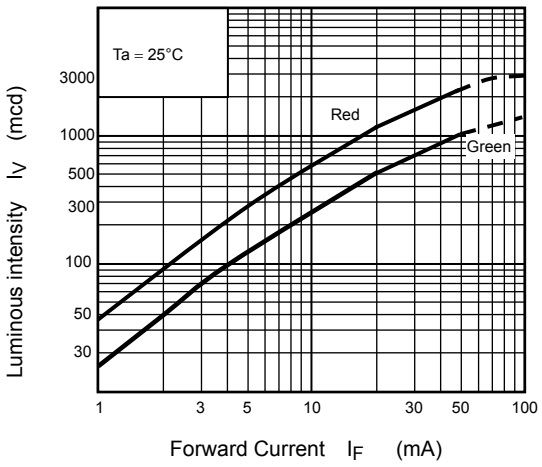
ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS		SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
FORWARD VOLTAGE	Red	V_F	I_F = 20mA	—	1.95	2.4	V
	Green			—	2.05	2.4	
REVERSE CURRENT	Red	I_R	V_R = 4V	—	—	50	uA
	Green			—	—	50	
LUMINOUS INTENSITY	Red	I_V	I_F = 20mA	476	1100	—	mcd
	Green			272	500	—	
SPECTRAL LINE HALF WIDTH	Red	Δλ	I_F = 20mA	—	13	—	nm
	Green			—	13	—	
DOMINANT WAVELENGTH	Red	λd	I_F = 20mA	—	626	—	nm
	Green			—	571	—	

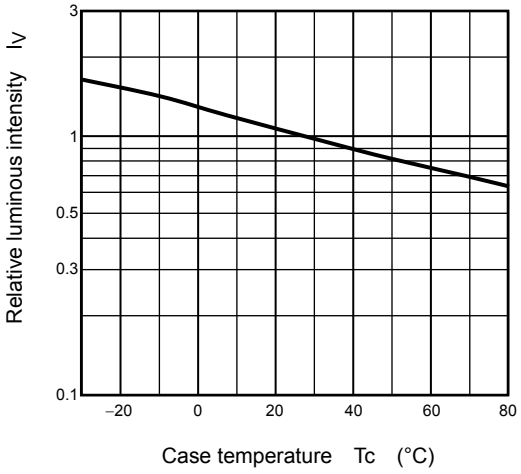
$I_F - V_F$



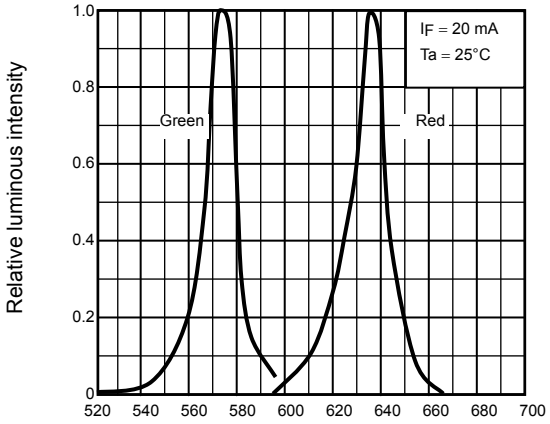
$I_V - I_F$



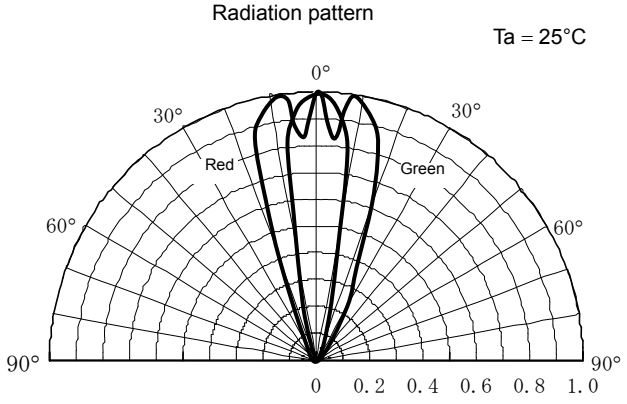
$I_V - Tc$



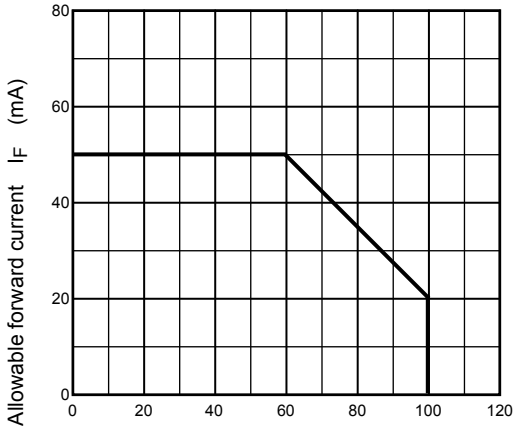
Relative luminous intensity – Wavelength



Radiation pattern



$I_F - Ta$



RESTRICTIONS ON PRODUCT USE

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- 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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