

TOSHIBA LED Lamp InGaAlP Red Light Emission

TLRMK31T(F)

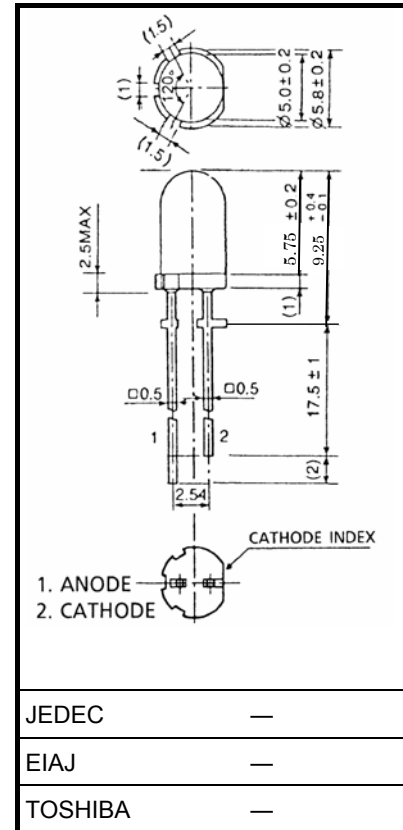
Panel Circuit Indicator

- Lead(Pb)-free products (lead: Sn-Ag-Cu)
- 5 mm package
- InGaAlP technology
- Transparent lens
- Low drive current, high intensity red light emission
Recommended forward current: $I_F = 10 \sim 30$ mA (DC)
- All plastic molded lens, provides an excellent on-off contrast ratio.
- Fast response time, capable of pulse operation.
- Applications: outdoor message signboards, Traffic signals, Safety equipment, HMSL, etc
- Straight lead type is also available. TLRMK31TP(F)

Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Forward current (DC)	I_F	50	mA
Reverse voltage	V_R	4	V
Power dissipation	P_D	130	mW
Operating temperature range	T_{opr}	$-40 \sim 100$	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-40 \sim 120$	$^\circ\text{C}$

Unit in mm



Weight: 0.28 g



For part availability and ordering information please call Toll Free: 800.984.5337
Website: www.marktechopto.com | Email: info@marktechopto.com

Electrical And Optical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V_F	$I_F = 20 \text{ mA}$	1.9	2.4	2.6	V
Reverse current	I_R	$V_R = 4 \text{ V}$	—	—	50	μA
Luminous intensity	I_V	$I_F = 20 \text{ mA}$ (Note)	850	3000	—	mcd
Peak emission wavelength	λ_P	$I_F = 20 \text{ mA}$	—	(636)	—	nm
Spectral line half width	$\Delta\lambda$	$I_F = 20 \text{ mA}$	—	13	—	nm
Dominant wavelength	λ_d	$I_F = 20 \text{ mA}$ (Note)	—	626	—	nm

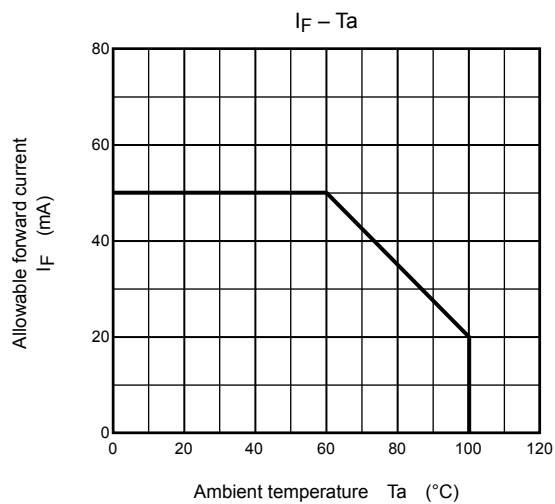
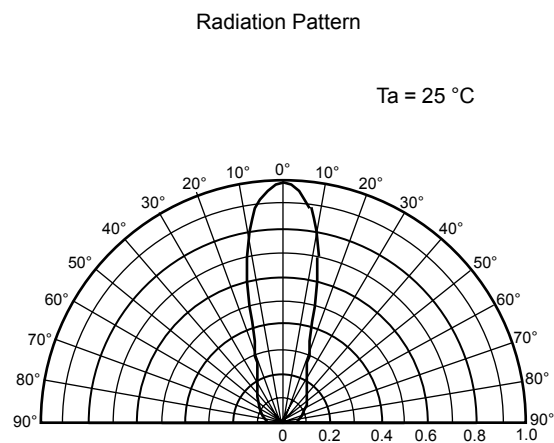
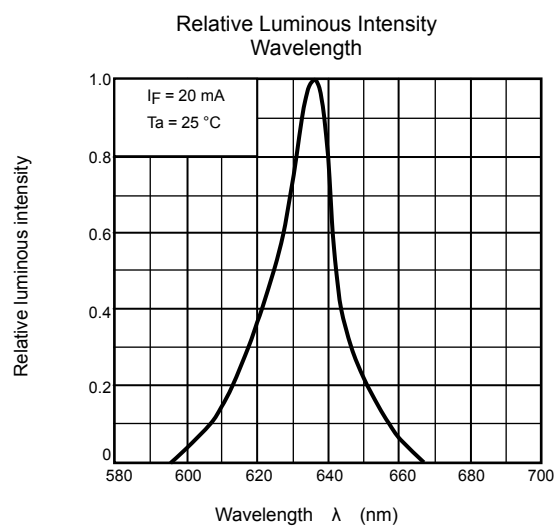
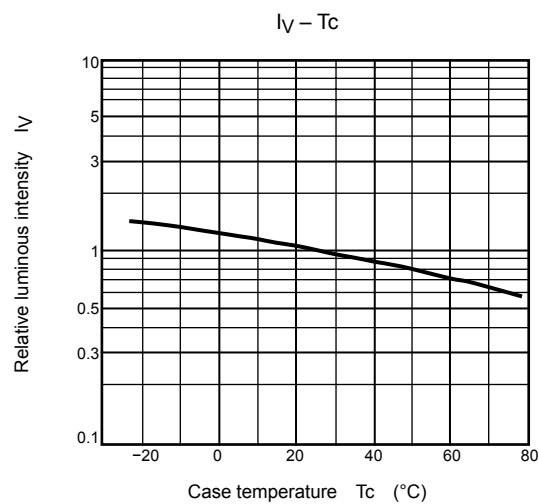
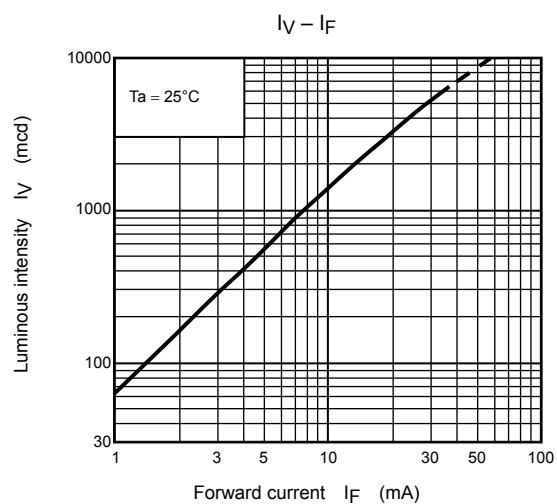
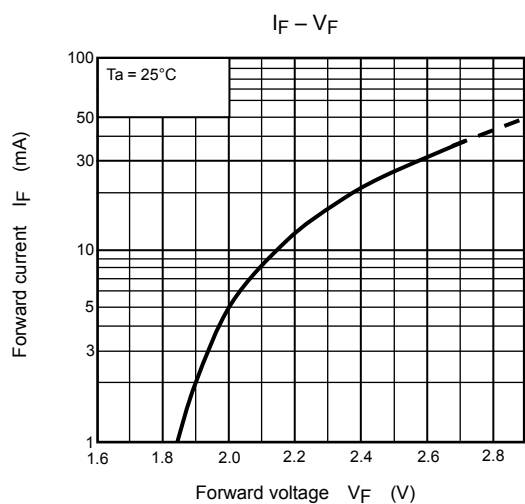
(Note): Lamps are classified into the following ranks according to I_V , and packed in boxes by each rank.

I_V -rank S: 850 - 2300mcd, T: 1530 - 4140mcd, U: 2720mcd -

Precaution

Please be careful of the followings

- Soldering temperature: 260°C 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 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.



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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