

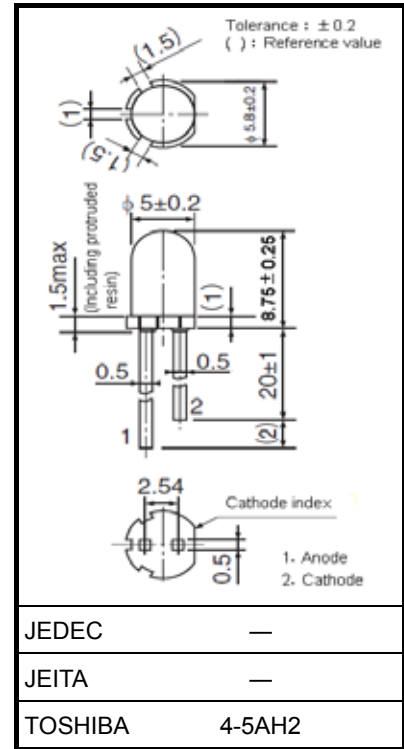
TOSHIBA LED Lamp InGaAlP Red Light Emission

TLRMK16TAP(MT1,F)

Panel Circuit Indicator

Unit: mm

- 5 mm package
- InGaAlP technology
- Transparent lens
- High intensity light emission
- Excellent low current light output
- Applications: Various types of information panels, backlightings, etc.
- Stopper lead type is also available. TLRMK16TA(F)



Weight: 0.31 g (typ.)

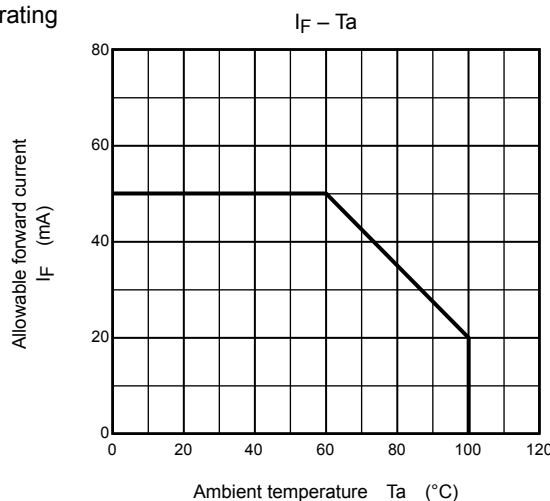
Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Forward current	I_F (Note 1)	50	mA
Reverse voltage	V_R	4	V
Power dissipation	P_D	125	mW
Operating temperature range	T_{opr}	-40 to 100	°C
Storage temperature range	T_{stg}	-40 to 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 1: Forward current derating



For part availability and ordering information please call Toll Free: 800.984.5337
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Electrical and Optical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V_F	$I_F = 20 \text{ mA}$ (Note 2)	1.85	2.15	2.45	V
Reverse current	I_R	$V_R = 4 \text{ V}$	—	—	50	μA
Luminous intensity	I_V	$I_F = 20 \text{ mA}$ (Note 2)	1900	5400	10700	mcd
Peak emission wavelength	λ_P	$I_F = 20 \text{ mA}$	—	636	—	nm
Spectral line half width	$\Delta\lambda$	$I_F = 20 \text{ mA}$	—	14	—	nm
Dominant wavelength	λ_d	$I_F = 20 \text{ mA}$	620	626	634	nm

Note 2: Lamps are classified into the following ranks according to their luminous intensity and forward voltage. Each packing box includes single Luminous Intensity class.

I_V _ rank classification

Rank	Min	Max	Accuracy
T	1900	3380	± 22.5%
U	3380	6010	
V	6010	10700	
Unit	mcd		—

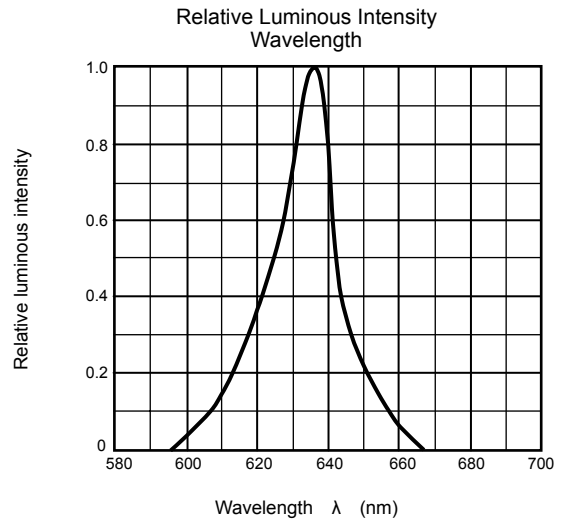
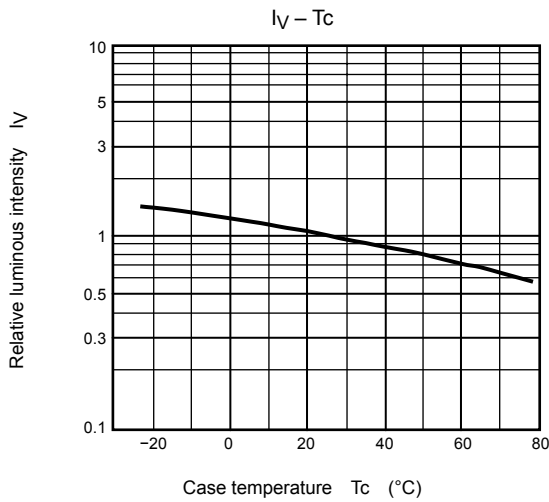
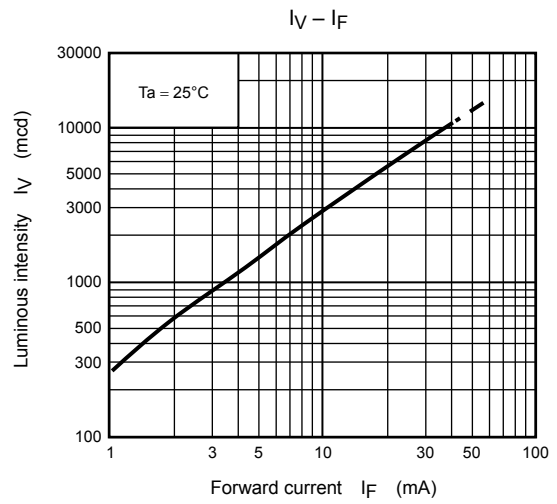
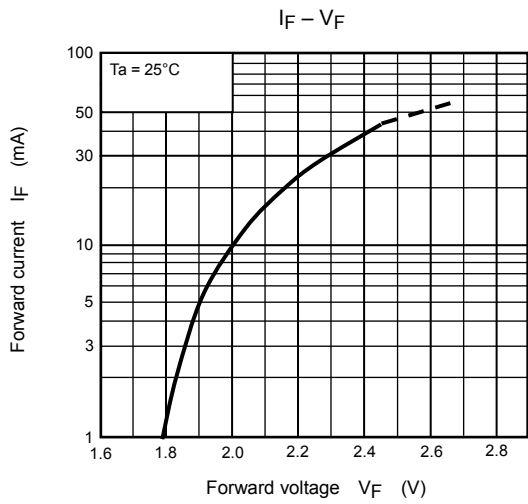
Forward voltage _ rank classification

Rank	Min	Max	Accuracy
A	1.85	2.05	± 0.05V
B	2.05	2.25	
C	2.25	2.45	
Unit	V		—

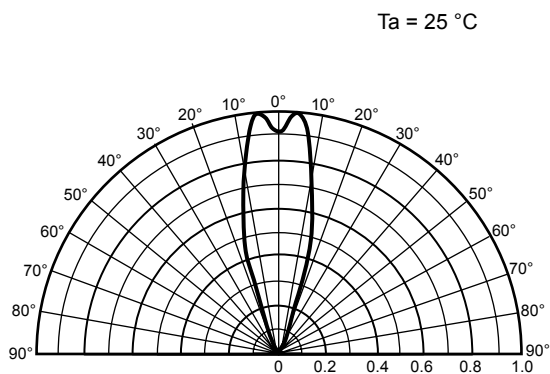
Precaution

Please be careful of the followings

- 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.



Radiation Pattern



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