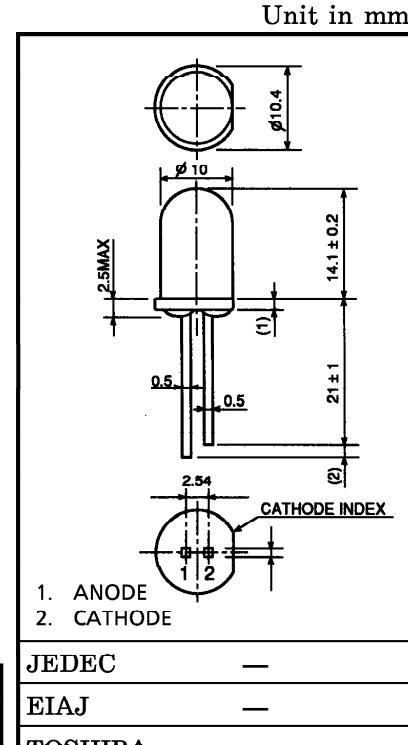


TOSHIBA LED LAMP InGaAlP RED LIGHT EMISSION

TLRH190P

PANEL CIRCUIT INDICATOR

- 10mm DIAMETER
- InGaAlP RED LED
- All Plastic Mold Type.
- Colorless Clear Lens
- Low Drive Current, High Intensity Red Light Emission
Recommended Forward Current : $I_F = 1 \sim 20 \text{ mA (DC)}$
- All Plastic Molded Lens, Provides an Excellent ON-OFF Contrast Ratio.
- Fast Response Time, Capable of Pulse Operation.
- High Power Luminous Intensity
- Without Stand-offs
- APPLICATIONS : Suitable for Outdoor Message Signboard, Safety equipment.

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	125	mW
Operating Temperature Range	T_{opr}	$-30 \sim 85$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40 \sim 120$	$^\circ\text{C}$

JEDEC —

EIAJ —

TOSHIBA

Weight : 1.0g

ELECTRO-OPTICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V_F	$I_F = 20 \text{ mA}$	—	1.9	2.5	V
Reverse Current	I_R	$V_R = 4 \text{ V}$	—	—	50	μA
Luminous Intensity TLRH190P	I_V	$I_F = 20 \text{ mA}$ (Note)	4760	15000	—	mcd
TLRH190P (VW)			4760	—	23000	
Peak Emission Wavelength	λ_p	$I_F = 20 \text{ mA}$	—	644	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20 \text{ mA}$	—	18	—	nm
Dominant Wavelength	λ_d	$I_F = 20 \text{ mA}$	—	630	—	nm

(Note) Rank selection carried out under next range respectively, although it needs $\pm 15\%$ additionary for guaranteed limits.

V : 5600-11200, W : 10000-20000mcd, X : 18000-36000mcd.

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PRECAUTION

Please be careful of the followings

- Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
(Soldering portion of lead : up to 2mm from the body of the device)
- If the lead is formed, the lead should be formed up to 5mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.

