

TENTATIVE

TOSHIBA INFRARED LED GaAlAs INFRARED EMITTER

## TLN221

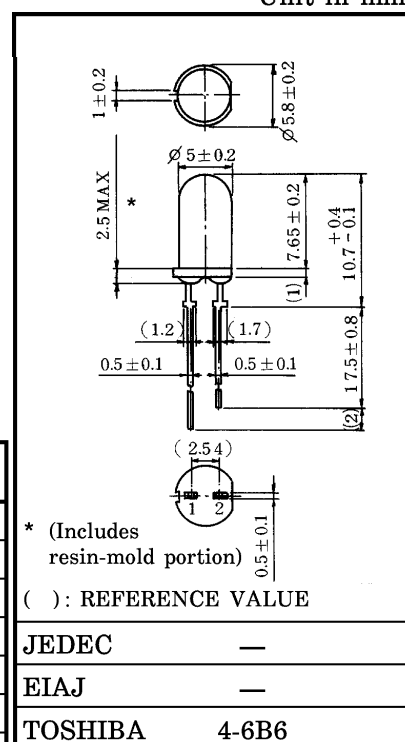
INFRARED LED FOR SPACE-OPTICAL-TRANSMISSION

Unit in mm

- High radiant power :  $P_o = 18\text{mW}$  (TYP.) at  $I_F = 50\text{mA}$
- Wide radiant pattern :  $\theta_{\frac{1}{2}} = \pm 21^\circ$  (TYP.)
- High speed response :  $t_r, t_f = 30\text{ns}$  (TYP.)
- A light source for remote control.
- Wireless AV-signal transmission purpose.
- High speed data transmission purpose.

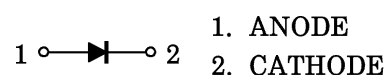
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	100	mA
Pulse Forward Current	$I_{FP}$	1000 (Note:1)	mA
Power Dissipation	$P_D$	220	mW
Reverse Voltage	$V_R$	4	V
Operating temperature Range	$T_{opr}$	$-25 \sim 85$	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-30 \sim 100$	$^\circ\text{C}$
Soldering Temperature (5s)	$T_{sol}$	260	$^\circ\text{C}$



(Note : 1) Frequency = 100kHz, duty = 1%

PIN CONNECTION

OPTO-ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	$V_F$	$I_F = 100\text{mA}$	—	1.8	2.2	V
Reverse Current	$I_R$	$V_R = 4\text{V}$	—	—	60	$\mu\text{A}$
Radiant Power	$P_O$	$I_F = 50\text{mA}$	14	18	—	mW
Radiant Intensity	$I_E$	$I_F = 50\text{mA}$	—	30	—	mW / sr
Rise Time, Fall Time	$t_r, t_f$	$I_{FP} = 100\text{mA}, P_W = 100\text{ns}$	—	30	—	ns
Cut-off Frequency (Note:2)	$f_c$	$I_F = 50\text{mA}_{DC} + 5\text{mA}_{P-P}$	10	15	—	MHz
Capacitance	$C_T$	$V_R = 0, f = 1\text{MHz}$	—	110	—	pF
Peak Emission Wavelength	$\lambda_P$	$I_F = 50\text{mA}$	830	870	900	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 50\text{mA}$	—	50	—	nm
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 50\text{mA}$	—	$\pm 21$	—	$^\circ$

(Note : 2) Frequency when modulation light power decreases by 3dB from 1MHz.

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**PRECAUTION**

Please be careful of the followings.

1. Soldering shall be performed at the top portion from the lead stopper.
2. When the lead is formed, the lead shall be formed at the top portion of the stopper without leaving forming stress to the body of the device.  
Soldering shall be performed after lead forming.

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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