

## TOSHIBA INFRARED LED GaAs INFRARED EMITTER

## TLN110

INFRARED LED FOR REMOTE CONTROL SYSTEM

Unit in mm

REMOTE CONTROL SYSTEM

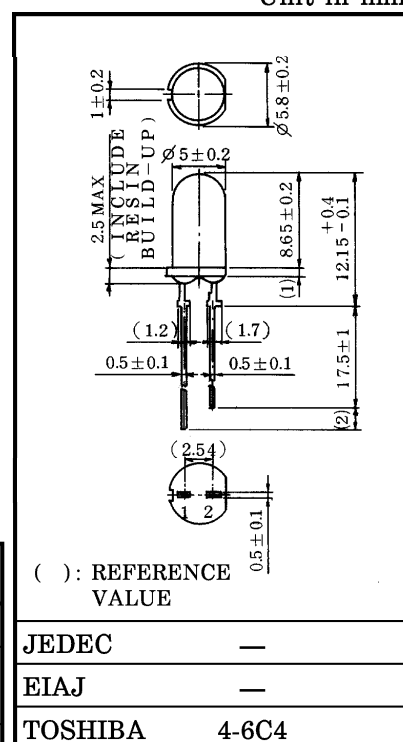
SMOKE SENSOR

OPTO-ELECTRONIC SWITCH

- High radiant intensity :  $I_E = 30\text{mW/sr}$  (TYP.)
- Excellent linearity of radiant intensity and modulation by pulse operation and high frequency is possible.
- PIN photo diode TPS703 provided with a visible light cut resin is available for detector for remote control.

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

| CHARACTERISTIC                                           | SYMBOL                        | RATING         | UNIT                  |
|----------------------------------------------------------|-------------------------------|----------------|-----------------------|
| Forward Current                                          | $I_F$                         | 100            | mA                    |
| Forward Current Derating<br>( $T_a > 25^\circ\text{C}$ ) | $\Delta I_F / ^\circ\text{C}$ | -1.33          | mA / $^\circ\text{C}$ |
| Pulse Forward Current                                    | $I_{FP}$ (Note)               | 1              | A                     |
| Reverse Voltage                                          | $V_R$                         | 5              | V                     |
| Power Dissipation                                        | $P_D$                         | 150            | mW                    |
| Operating Temperature Range                              | $T_{opr}$                     | $-20 \sim 75$  | $^\circ\text{C}$      |
| Storage Temperature Range                                | $T_{stg}$                     | $-30 \sim 100$ | $^\circ\text{C}$      |

(Note) Pulse Width  $\leq 100\mu\text{s}$ , Repetitive Frequency = 100Hz

( ) : REFERENCE VALUE

JEDEC —

EIAJ —

TOSHIBA 4-6C4

Weight : 0.32g (TYP.)

PIN CONNECTION

1 —> 2      1. ANODE  
2. CATHODE

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

| CHARACTERISTIC           | SYMBOL          | TEST CONDITION             | MIN. | TYP.    | MAX. | UNIT          |
|--------------------------|-----------------|----------------------------|------|---------|------|---------------|
| Forward Voltage          | $V_F$           | $I_F = 100\text{mA}$       | —    | 1.35    | 1.5  | V             |
| Reverse Current          | $I_R$           | $V_R = 5\text{V}$          | —    | —       | 10   | $\mu\text{A}$ |
| Radiant Intensity        | $I_E$           | $I_F = 50\text{mA}$        | 15   | 30      | —    | mW / sr       |
| Radiant Power            | $P_O$           | $I_F = 50\text{mA}$        | —    | 9       | —    | mW            |
| Capacitance              | $C_T$           | $V_R = 0, f = 1\text{MHz}$ | —    | 20      | —    | pF            |
| Peak Emission Wavelength | $\lambda_P$     | $I_F = 50\text{mA}$        | —    | 940     | —    | nm            |
| Spectral Line Half Width | $\Delta\lambda$ | $I_F = 50\text{mA}$        | —    | 45      | —    | nm            |
| Half Value Angle         | $\theta_{1/2}$  | $I_F = 50\text{mA}$        | —    | $\pm 8$ | —    | $^\circ$      |

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## PRECAUTION

Please be careful of the followings.

1. Soldering temperature : 260°C MAX. Soldering time : 5 sec MAX.  
(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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