

**Preliminary**

TOSHIBA Infrared LED GaAlAs Infrared Emitter

# TLN217

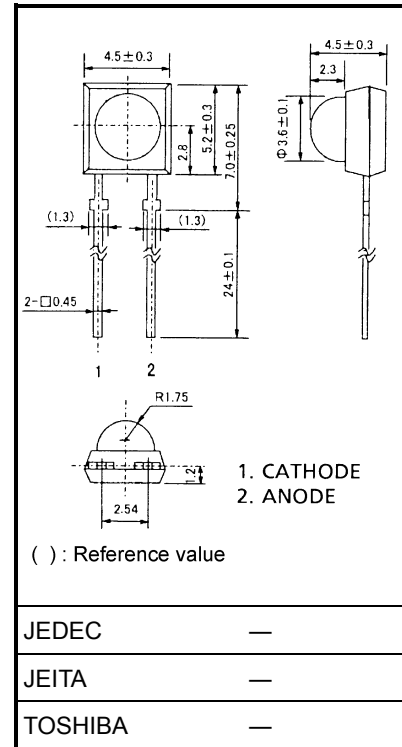
Infrared Light-Emitting Diode for Still Camera

Light Source for Auto Focus

The TLN217 is a high output infrared LED employing a new structure of GaAlAs current confining LED chip.

- Optical radiation of current confining LED chip is condensed by clear resin lens.
- High output and low forward voltage
- Peak emission wavelength:  $\lambda_p = 870 \text{ nm}$  (typ.)
- Spectral line half width:  $\Delta\lambda = 35 \text{ nm}$  (typ.)
- Effective emission diameter:  $210 \times 466 \mu\text{m}$  (typ.)

Unit: mm



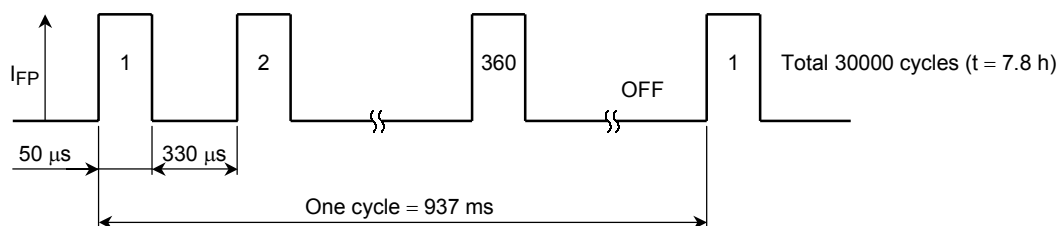
|         |   |
|---------|---|
| JEDEC   | — |
| JEITA   | — |
| TOSHIBA | — |

Weight: 0.18 g (typ.)

## Maximum Ratings (Ta = 25°C)

| Characteristics       | Symbol            | Rating    | Unit |
|-----------------------|-------------------|-----------|------|
| Pulse forward current | $I_{FP}$ (Note 1) | 1.1       | A    |
| Reverse voltage       | $V_R$             | 1         | V    |
| Operating temperature | $T_{opr}$         | -25 to 60 | °C   |
| Storage temperature   | $T_{stg}$         | -40 to 90 | °C   |

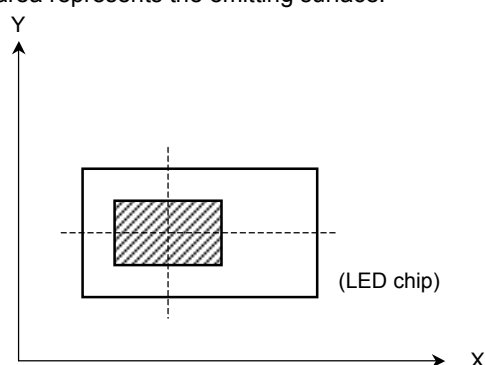
Note 1: Total 30000 cycles (total power applied time is 7.8 h). One cycle takes 137-ms power applied time and 800-ms pause time under the drive condition of 2.6 kHz frequency and 13.2% duty cycle.



## Optical and Electrical Characteristics (Ta = 25°C)

| Characteristics              | Symbol               | Test Condition                                           | Min | Typ.       | Max  | Unit          |
|------------------------------|----------------------|----------------------------------------------------------|-----|------------|------|---------------|
| Pulse forward voltage        | $V_{FP}$             | $I_{FP} = 300 \text{ mA}$ , $t = 10 \text{ ms}$          | —   | 1.6        | 1.75 | V             |
| Reverse current              | $I_R$                | $V_R = 1 \text{ V}$                                      | —   | —          | 100  | $\mu\text{A}$ |
| Effective emission spot size | X                    | Half value of peak (Note 2)                              | —   | 466        | —    | $\mu\text{m}$ |
|                              | Y                    | Half value of peak (Note 2)                              | —   | 210        | —    |               |
| Radiation flux               | $\phi_e$             | $I_{FP} = 300 \text{ mA}$ , $t = 10 \text{ ms}$ (Note 3) | 12  | 17         | —    | mW            |
| Half value angle             | $\theta \frac{1}{2}$ | $I_F = 50 \text{ mA}$                                    | —   | $\pm 32.5$ | —    | °             |
| Peak emission wavelength     | $\lambda_p$          | $I_F = 50 \text{ mA}$                                    | 850 | 870        | 900  | nm            |
| Spectral line half width     | $\Delta\lambda$      | $I_F = 50 \text{ mA}$                                    | —   | 35         | —    | nm            |

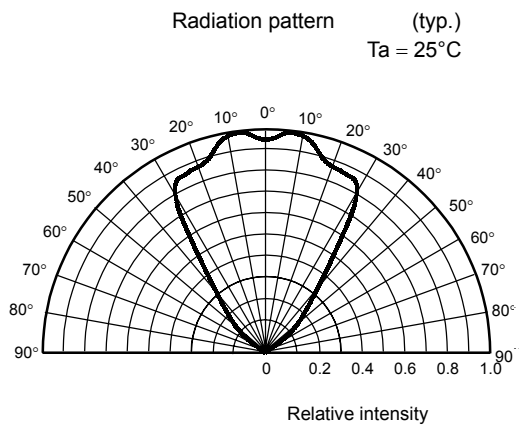
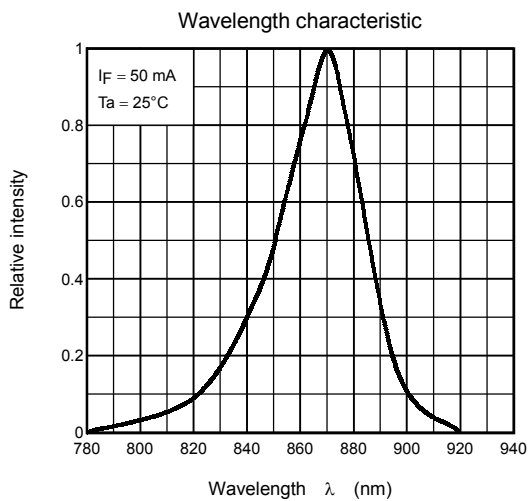
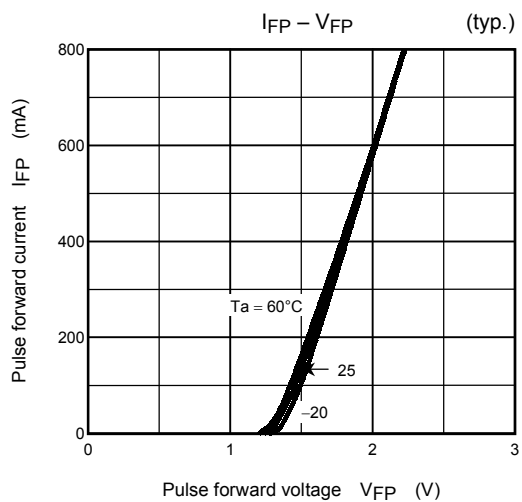
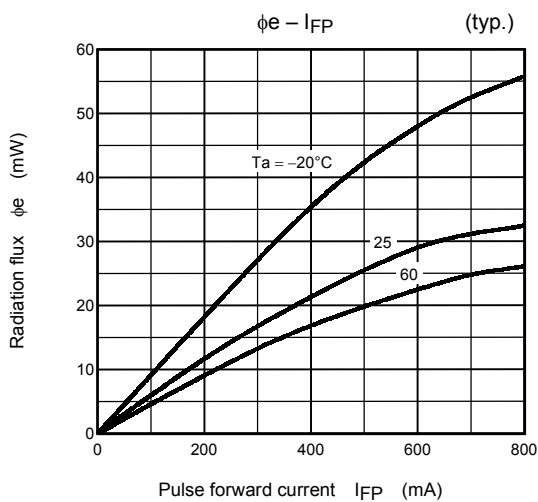
Note 2: The directions of X and Y are in the following diagram.  
The shaded area represents the emitting surface.



Note 3: Luminous radiation output to effective angle =  $\pm 25^\circ$

## Precaution

- Soldering temperature: 260°C (max)  
Soldering time: 5 s (max)  
(Soldering must be performed 2 mm from the bottom of the package.)
- When forming the leads, bend each lead under the 2 mm from the body of the device. Soldering must be performed after the leads have been formed.
- The TLN217 is intended for a camera AF use only. Please do not use this device except for a camera.



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