Preliminary TOSHIBA Infrared LED GaAℓAs Infrared Emitter

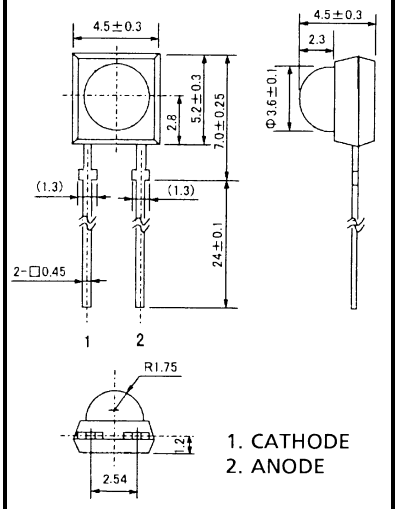
TLN217

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: λp = 870 nm (typ.)
- Spectral line half width: Δλ = 35 nm (typ.)
- Effective emission diameter: 210 ×466 μm (typ.)

Unit: mm



( ) : Reference value

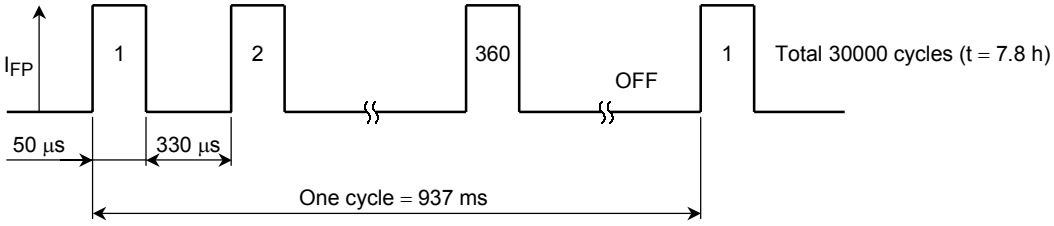
JEDEC	—
JEITA	—
TOSHIBA	—

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

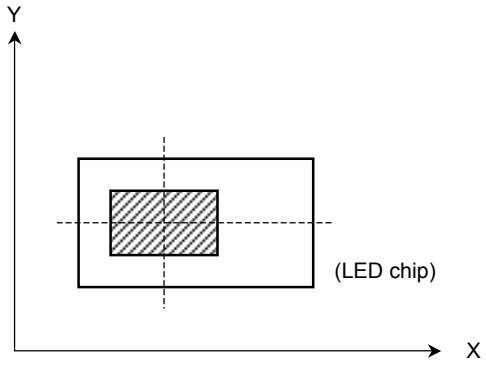
Note 1: Total 30000 cycles (total power applied time is 7.8 h). One cycle takes 137-ms power applied time and 800-ms pause time under the drive condition of 2.6 kHz frequency and 13.2% duty cycle.



Optical and Electrical Characteristics (Ta = 25°C)

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

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

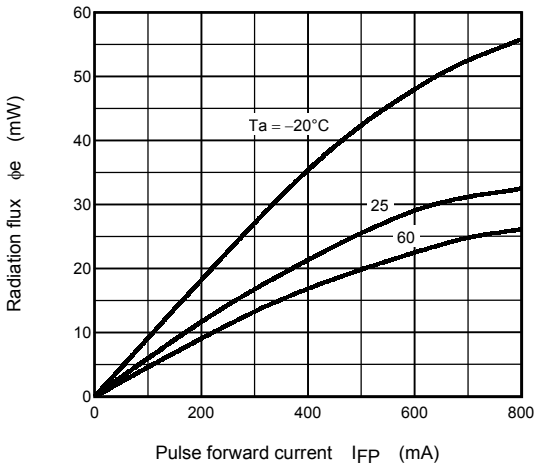


Note 3: Luminous radiation output to effective angle = ±25°

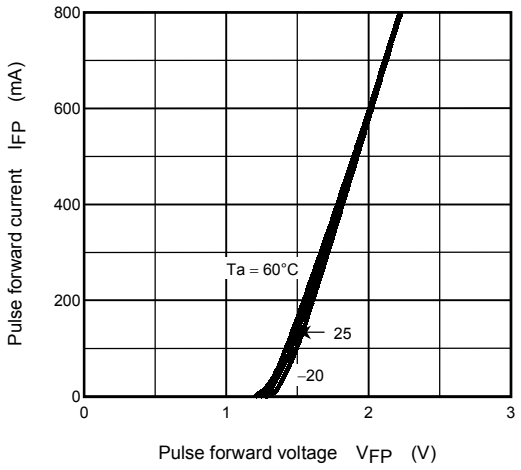
Precaution

- 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.

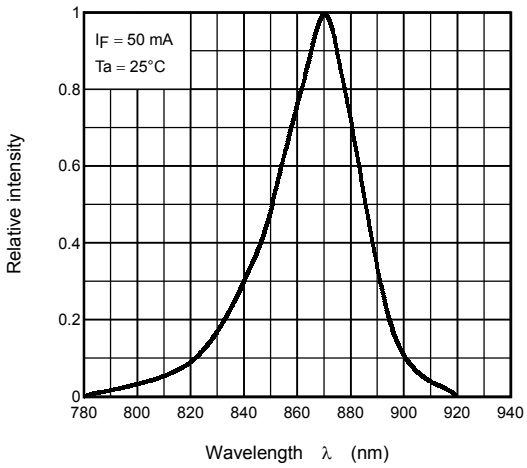
$\phi e - I_{FP}$ (typ.)



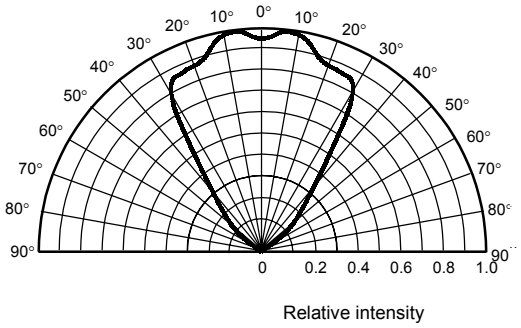
$I_{FP} - V_{FP}$ (typ.)



Wavelength characteristic



Radiation pattern (typ.)
Ta = 25°C



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