

# LN77L

## GaAlAs Infrared Light Emitting Diode

For optical control systems

### ■ Features

- High-power output, high-efficiency:  $P_O = 18 \text{ mW}$  (typ.)
- Fast response and high-speed modulation capability:  $f_C = 20 \text{ MHz}$  (typ.)
- Wide directivity:  $\theta = 20^\circ$  (typ.)
- Transparent epoxy resin package

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Power dissipation	$P_D$	190	mW
Forward current	$I_F$	100	mA
Pulse forward current *	$I_{FP}$	1	A
Reverse voltage	$V_R$	3	V
Operating ambient temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$

Note) \*:  $f = 100 \text{ Hz}$ , Duty cycle = 0.1%

### ■ Electro-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Radiant power	$P_O$	$I_F = 50 \text{ mA}$	10	18		mW
Reverse current	$I_R$	$V_R = 3 \text{ V}$			10	$\mu\text{A}$
Forward voltage	$V_F$	$I_F = 100 \text{ mA}$		1.6	1.9	V
Peak emission wavelength	$\lambda_P$	$I_F = 50 \text{ mA}$		860		nm
Spectral half band width	$\Delta\lambda$	$I_F = 50 \text{ mA}$		40		nm
Half-power angle	$\theta$	The angle when the radiant power is halved.		20		$^\circ$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

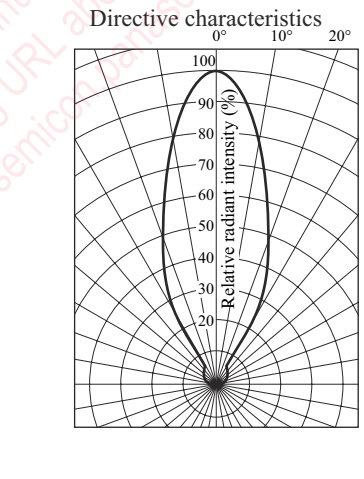
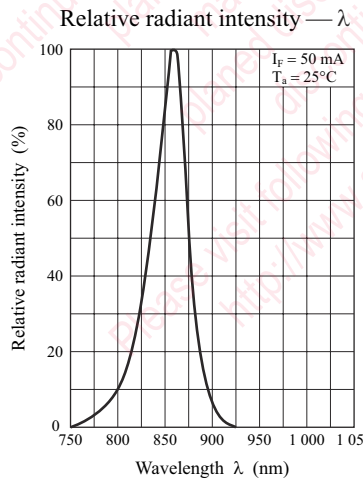
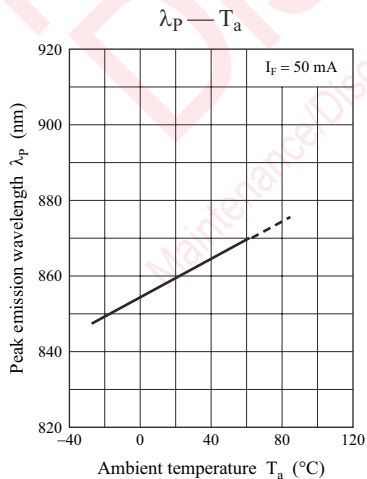
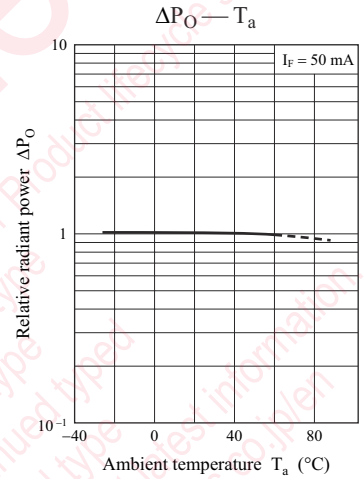
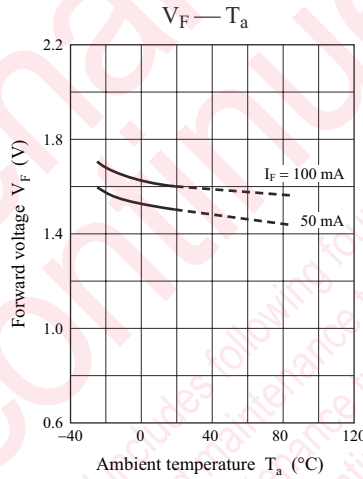
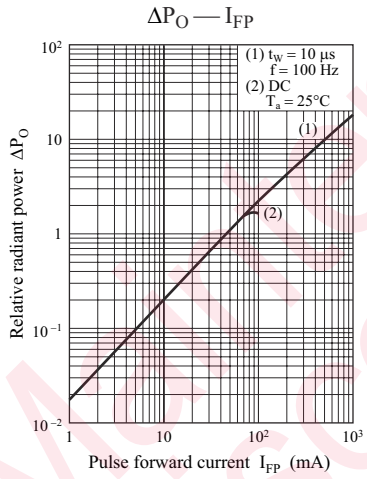
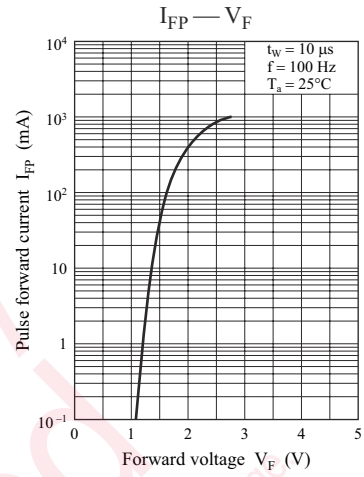
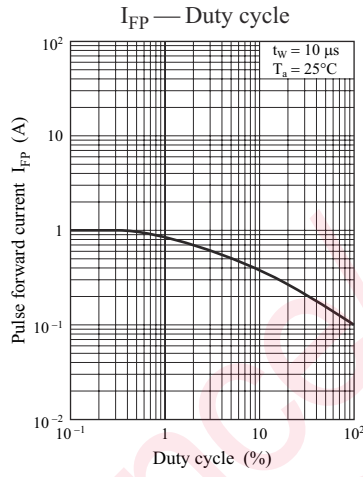
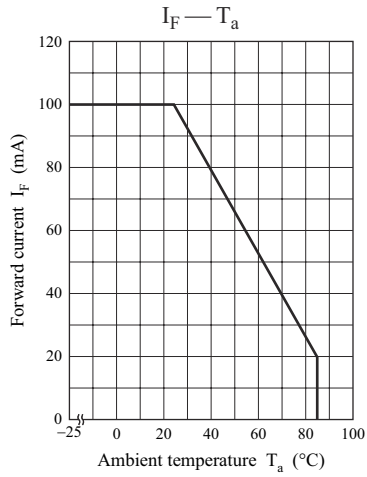
2. Modulation total power output 3 dB frequency to fall from 1 MHz.

Cutoff frequency: 20 MHz

$$f_C : 10 \times \log \frac{P_O \text{ at } f = f_C}{P_O \text{ at } f = 1 \text{ MHz}} = -3$$

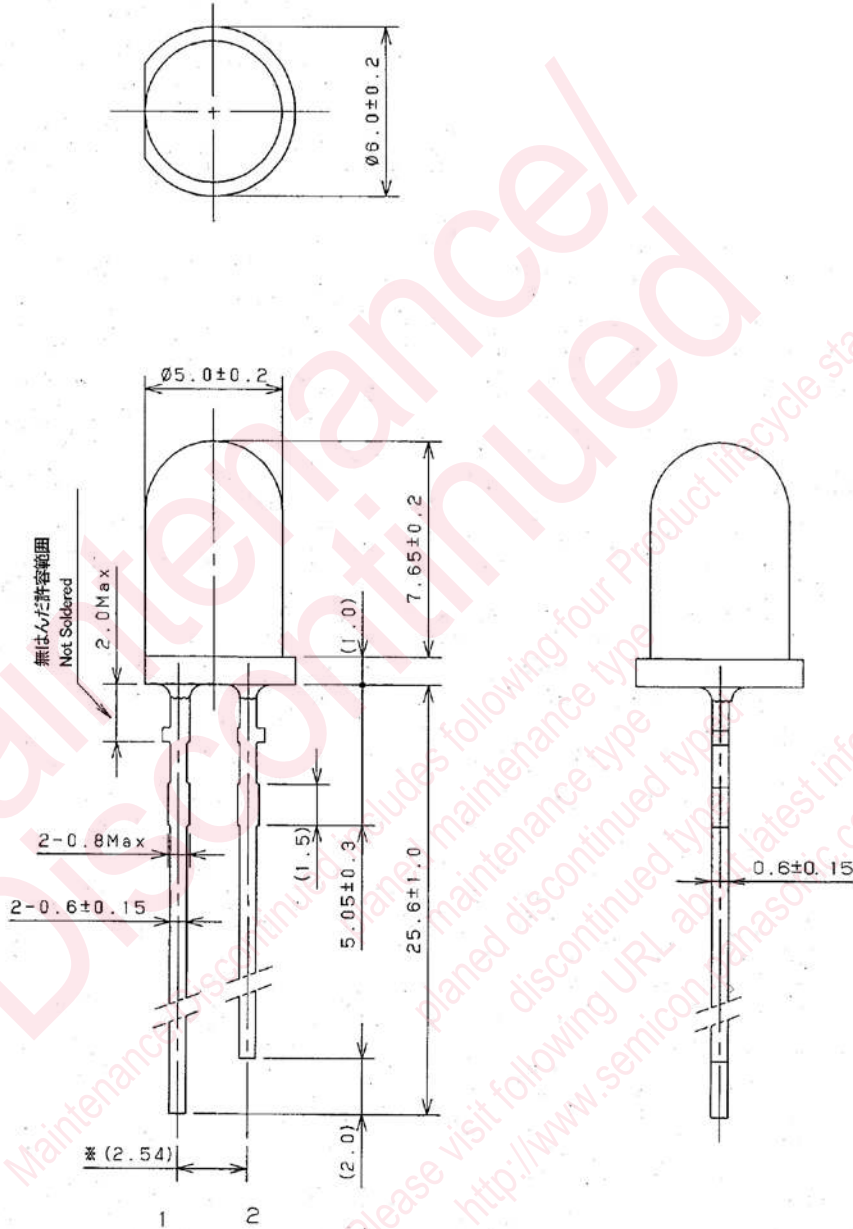
3. LED might radiate red light under large current drive.

4. \*: A light detection element uses a silicon diode have proofread a load with a standard device.



■ Package (Unit: mm)

LEXLTN2S0002



- Pin name
- 1: Anode
- 2: Cathode

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