

# LN77L

## GaAlAs Infrared Light Emitting Diode

For optical control systems

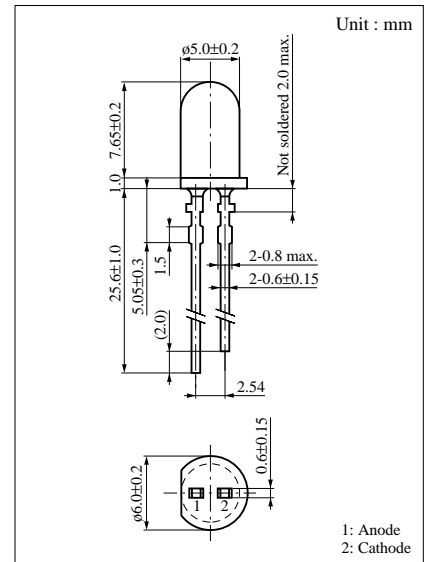
### ■ Features

- 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 :  $\theta = 20 \text{ deg.}$  (typ.)
- Transparent epoxy resin package

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

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

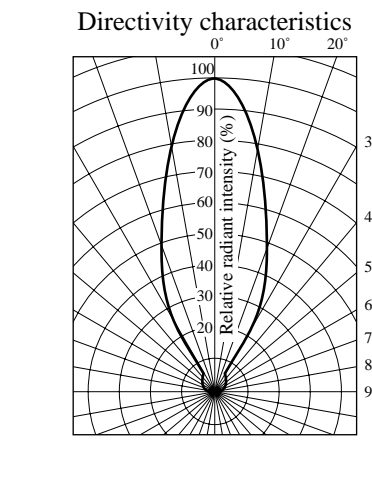
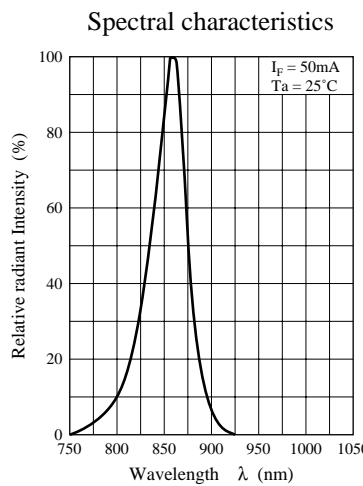
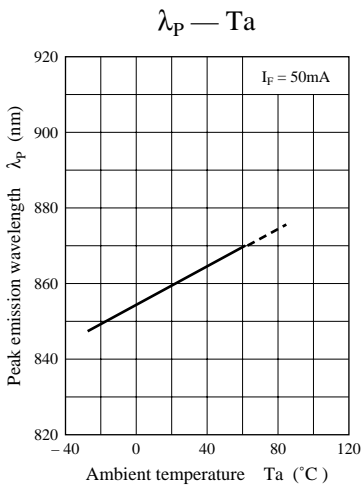
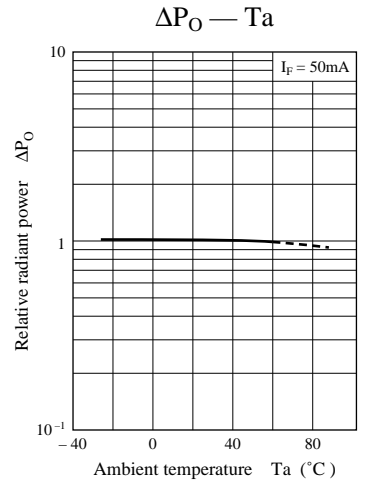
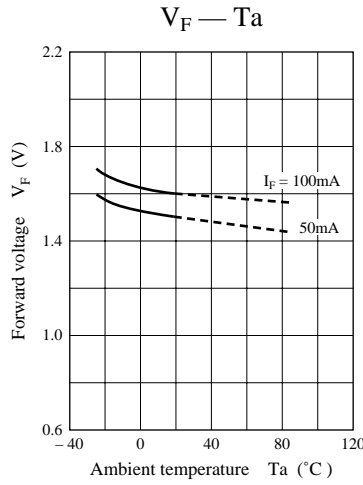
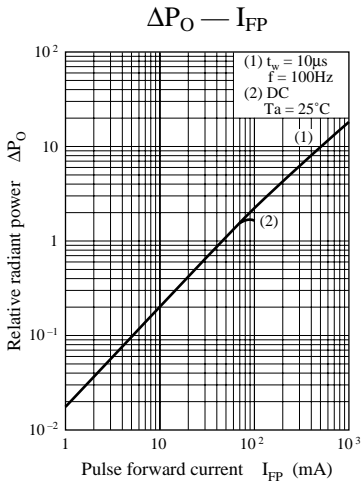
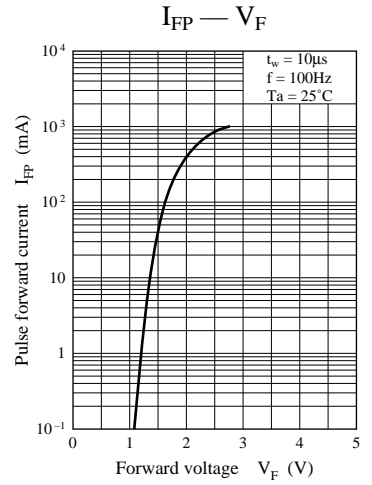
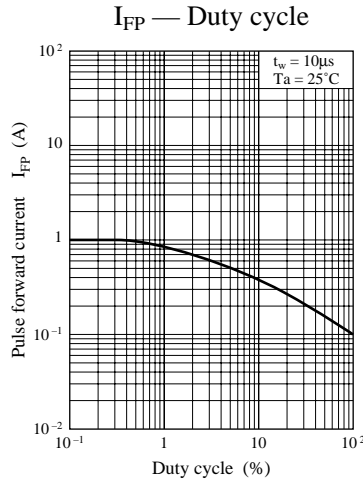
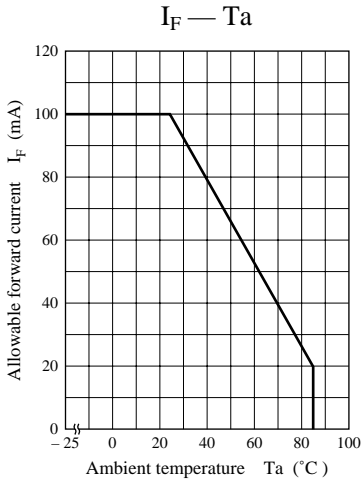
\*  $t_w = 10 \mu\text{s}$ , Duty cycle = 0.1 %



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

Parameter	Symbol	Conditions	min	typ	max	Unit
Radiant power	$P_O$	$I_F = 50\text{mA}$	10	18		mW
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
Forward voltage (DC)	$V_F$	$I_F = 100\text{mA}$		1.6	1.9	V
Reverse current (DC)	$I_R$	$V_R = 3\text{V}$			10	$\mu\text{A}$
Half-power angle	$\theta$	The angle in which radiant intensity is 50%		20		deg.
Cutoff frequency	$f_C^*$	$I_{FP} = 50\text{mA} + 10\text{mA}_{p-p}$		20		MHz

\* Frequency when modulation optical power decreases by 3dB from 1MHz  $\left( 10 \log \frac{P_O(f_C \text{ MHz})}{P_O(1 \text{ MHz})} = -3 \right)$



# Caution for Safety

 **DANGER**

Gallium arsenide material (GaAs) is used in this product.

Therefore, do not burn, destroy, cut, crush, or chemically decompose the product, since gallium arsenide material in powder or vapor form is harmful to human health.

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