

# LN189L

## GaAlAs Infrared Light Emitting Diode

Light source for distance measuring systems

### ■ Features

- High-power output, high-efficiency :  $P_O = 5.5 \text{ mW}$  (typ.)
- Fast response and high-speed modulation capability :  $t_r, t_f = 20 \text{ ns}$  (typ.)
- Infrared light emission close to monochromatic light :  $\lambda_p = 880 \text{ nm}$ (typ.)
- Narrow directivity using spherical lenses; works well with optical systems in auto focus systems
- Mini hollow mold resin package

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

Parameter	Symbol	Ratings	Unit
Power dissipation	$P_D$	190	mW
Forward current (DC)	$I_F$	100	mA
Pulse forward current	$I_{FP}^*$	0.2	A
Reverse voltage (DC)	$V_R$	3	V
Operating ambient temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +100	$^\circ\text{C}$

\*  $f = 10 \text{ kHz}$ , Duty cycle = 25 %

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

Parameter	Symbol	Conditions	min	typ	max	Unit
Radiant power	$P_O$	$I_F = 100\text{mA}$	3	5.5		mW
Peak emission wavelength	$\lambda_p$	$I_F = 100\text{mA}$		880		nm
Spectral half band width	$\Delta\lambda$	$I_F = 100\text{mA}$		50		nm
Forward voltage (DC)	$V_F$	$I_F = 100\text{mA}$		1.55	1.9	V
Reverse current (DC)	$I_R$	$V_R = 3\text{V}$			10	$\mu\text{A}$
Rise time	$t_r$	$I_{FP} = 100\text{mA}$		20		ns
Fall time	$t_f$	$I_{FP} = 100\text{mA}$		20		ns
Half-power angle	$\theta$	The angle in which radiant intensity is 50%		20		deg.

### Precautions for Use

[Airtightness] This product is not structured to provide a complete air seal. Therefore it cannot be immersed in solutions for purposes such as boiling tests or ultrasonic cleaning.

[Ability to withstand soldering heat]

The package of this product contains thermoplastic resin which has a limited ability to withstand heat. Therefore this product cannot be put through automated soldering operations in which the ambient temperature exceeds the specified temperature. The recommended soldering conditions are as follows.

- |                                     |                                     |      |                                |
|-------------------------------------|-------------------------------------|------|--------------------------------|
| • Temperature of soldering iron tip | : 260 $^\circ\text{C}$ or less      | } or | : 300 $^\circ\text{C}$ or less |
| • Soldering time                    | : 5 seconds or less                 |      | : 1 second or less             |
| • Soldering position                | : At least 2 mm away from lead base |      |                                |

[Ability to withstand chemicals]

If the transparent case requires cleaning, wipe it lightly using ethyl alcohol, methyl alcohol, or isopropyl alcohol. If you plan to use other solvents, carefully check to make sure there are no problems such as a misshapen case or a change in the condition of the case material.



