

# LN58

## GaAs Infrared Light Emitting Diode

For optical control systems

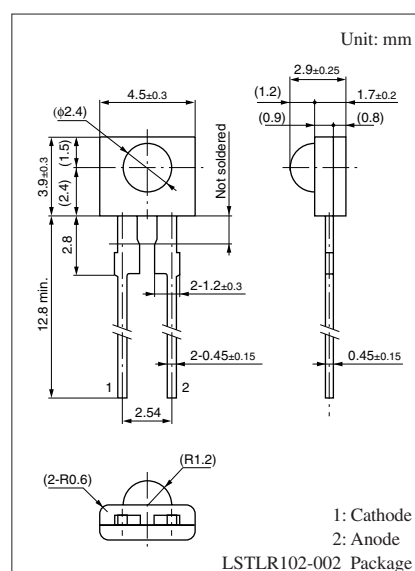
### ■ Features

- High-power output, high-efficiency:  $P_O = 3.5$  mW (typ.)
- Emitted light spectrum suited for silicon photodetectors
- Infrared light emission close to monochromatic light:  
 $\lambda_P = 950$  nm (typ.)
- Small size, thin side-view type package

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

Parameter	Symbol	Rating	Unit
Reverse voltage	$V_R$	3	V
Forward current	$I_F$	50	mA
Pulse forward current *	$I_{FP}$	1	A
Power dissipation	$P_D$	75	mW
Operating ambient temperature	$T_{opr}$	$-25$ to $+85$	$^\circ\text{C}$
Storage temperature	$T_{stg}$	$-30$ to $+100$	$^\circ\text{C}$

Note) \*:  $f = 100$  Hz, Duty Cycle = 0.1%



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

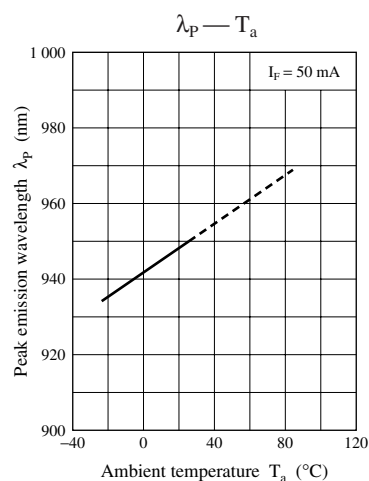
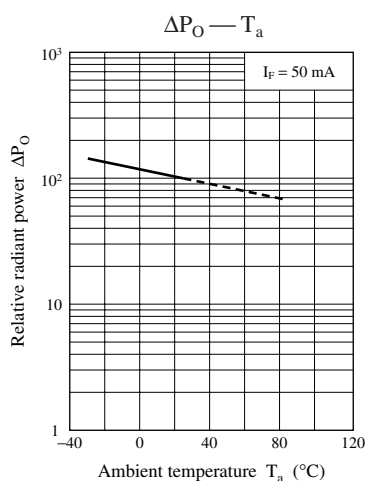
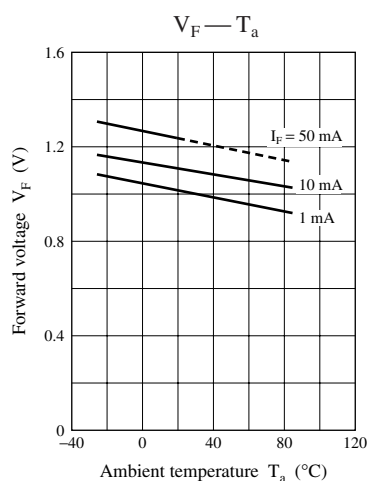
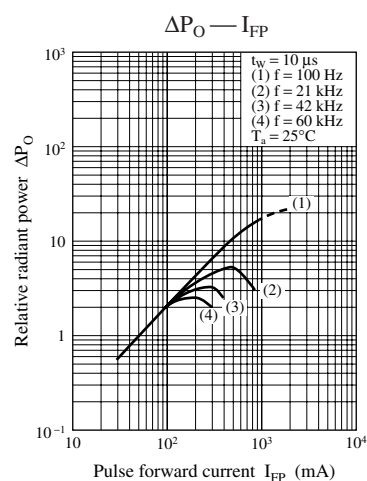
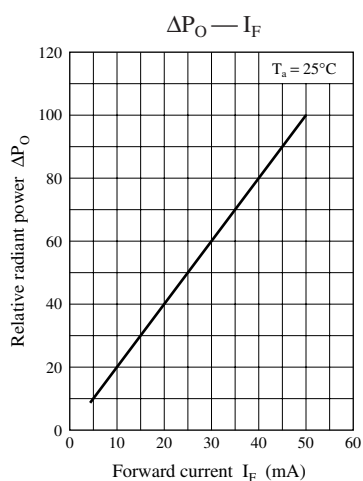
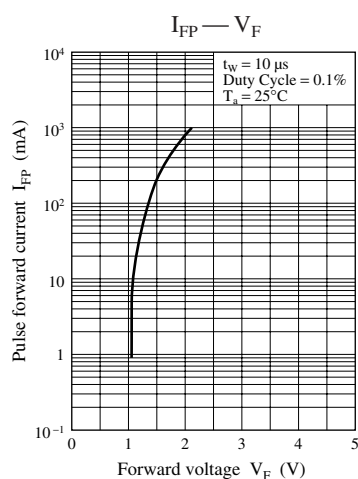
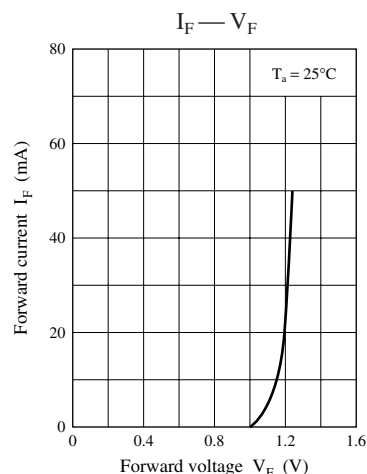
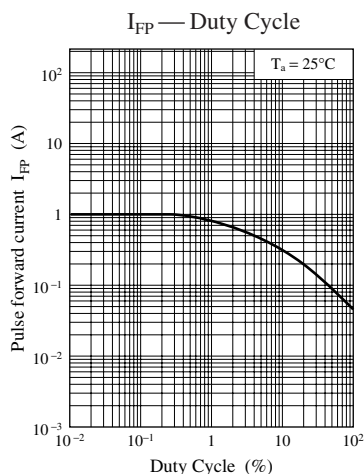
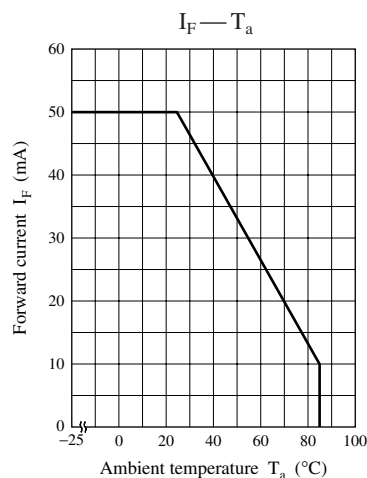
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	$V_F$	$I_F = 50$ mA			1.5	V
Reverse current	$I_R$	$V_R = 3$ V			10	$\mu\text{A}$
Radiant power *	$P_O$	$I_F = 50$ mA	1.8	3.5		mW
Peak emission wavelength	$\lambda_P$	$I_F = 50$ mA		950		nm
Spectral half band width	$\Delta\lambda$	$I_F = 50$ mA		50		nm
Terminal capacitance	$C_t$	$V_R = 0$ V, $f = 1$ MHz		35		pF
Half-power angle	$\theta$	The angle when the radiant power is halved		35		$^\circ$

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

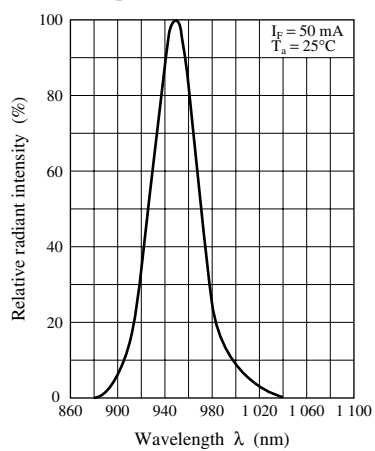
2. Cutoff frequency: 1 MHz

$$f_c: 10 \times \log \frac{P_O \text{ at } f = f_c}{P_O \text{ at } f = 50 \text{ kHz}} = -3$$

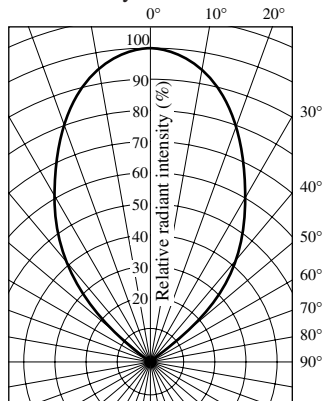
3. \*: A light detection element uses a silicon diode have proofread a load with a standard device.



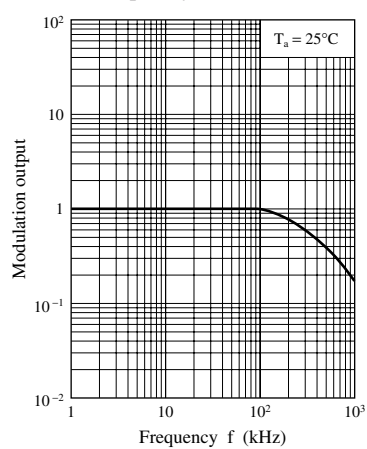
Spectral characteristics



Directivity characteristics



Frequency characteristics



# Caution for Safety

 **DANGER**

## ■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

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