

LN78

GaAlAs Infrared Light Emitting Diode

For optical control systems

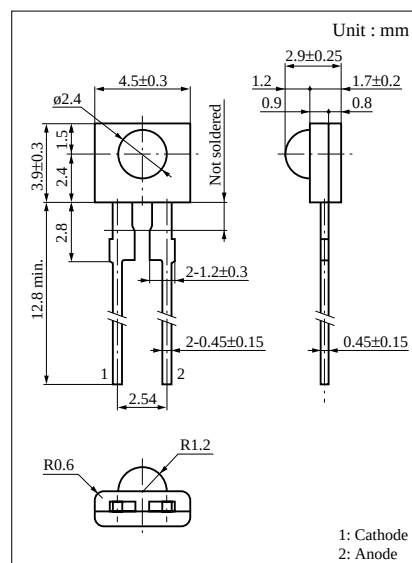
Features

- High-power output, high-efficiency : $P_O = 10 \text{ mW}$ (typ.)
- High-speed modulation capability : $f_C = 12 \text{ MHz}$

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

Parameter	Symbol	Ratings	Unit
Power dissipation	P_D	180	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	$^\circ\text{C}$

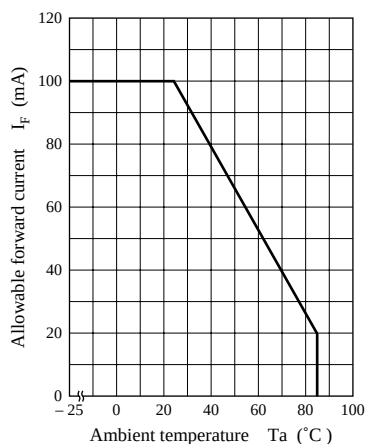
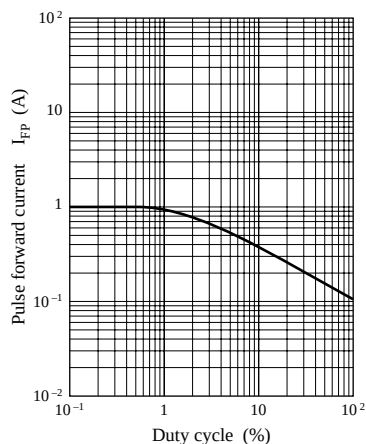
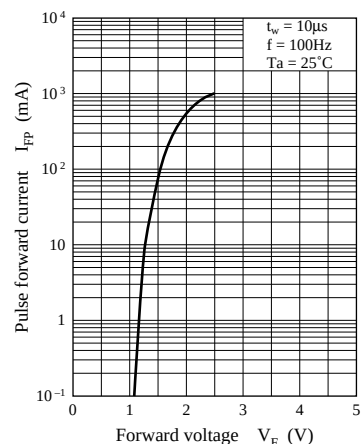
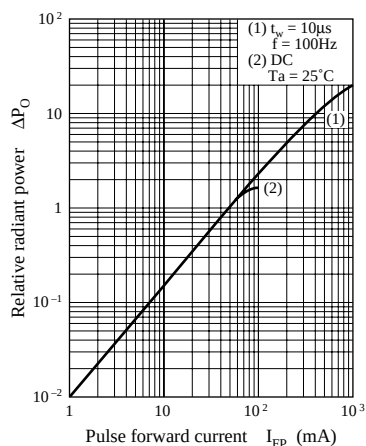
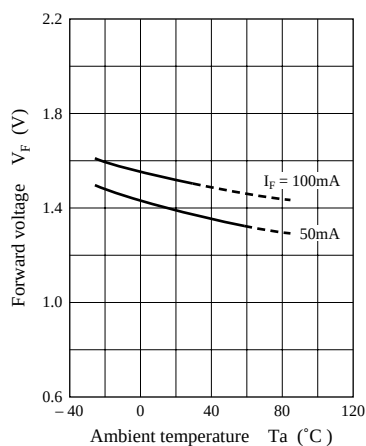
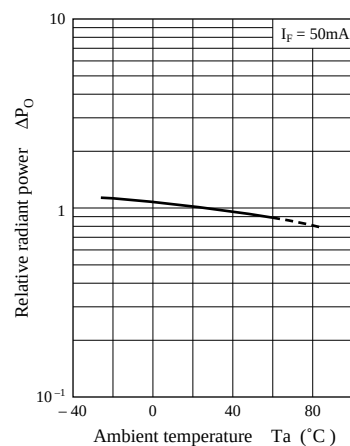
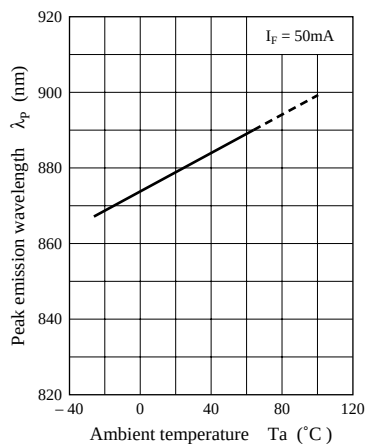
* $f = 100 \text{ Hz}$, Duty cycle = 0.1 %



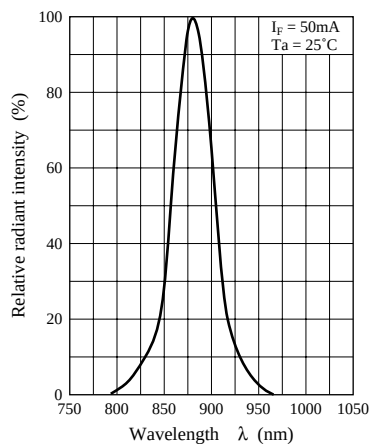
Electro-Optical Characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Radiant power	P_O	$I_F = 50 \text{ mA}$	6	10		mW
Peak emission wavelength	λ_P	$I_F = 50 \text{ mA}$		880		nm
Spectral half band width	$\Delta\lambda$	$I_F = 50 \text{ mA}$		50		nm
Forward voltage (DC)	V_F	$I_F = 100 \text{ mA}$		1.5	1.8	V
Reverse current (DC)	I_R	$V_R = 3 \text{ V}$			10	μA
Capacitance between pins	C_t	$V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$		50		pF
Half-power angle	θ	The angle in which radiant intensity is 50%		40		deg.
Cutoff frequency	f_C^*	$I_{FP} = 50 \text{ mA} + 10 \text{ mA}_{p-p}$		12		MHz

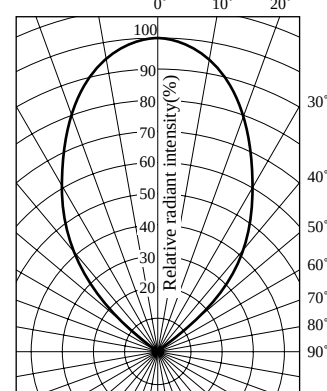
* Frequency when modulation optical power decreases by 3dB from 1MHz. $\left(10 \log \frac{P_O(f_C \text{ MHz})}{P_O(1 \text{ MHz})} = -3\right)$

$I_F - T_a$  $I_{FP} - \text{Duty cycle}$  $I_{FP} - V_F$  $\Delta P_O - I_{FP}$  $V_F - T_a$  $\Delta P_O - T_a$  $\lambda_p - T_a$ 

Spectral characteristics



Directivity characteristics



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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