LN78

GaAlAs Infrared Light Emitting Diode

For optical control systems

■ Features

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

■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Power dissipation	P_D	180	mW
Forward current	I_F	100	mA
Pulse forward current *	I_{FP}	1.0	A
Reverse voltage	V_R	3	V
Operating ambient temperature	T_{opr}	–25 to +85	°C
Storage temperature	T_{stg}	–30 to +100	°C

Note) *: f = 100 Hz, Duty cycle = 0.1%

■ Electro-Optical Characteristics T_a = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Radiant power	P_O	I_F = 50 mA	6	10		mW
Reverse current	I_R	V_R = 3 V			10	μA
Forward voltage	V_F	I_F = 100 mA		1.5	1.8	V
Peak emission wavelength	λ_P	I_F = 50 mA		880		nm
Spectral half band width	$\Delta\lambda$	I_F = 50 mA		50		nm
Terminal capacitance	C_t	V_R = 0 V, f = 1 MHz		50		pF
Half-power angle	θ	The angle when the radiant power is halved.		40		°

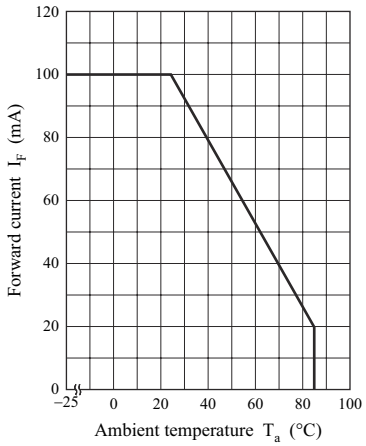
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

2. Modulation total power output 3 dB frequency to fall from 1 MHz.
Cutoff frequency: 12 MHz

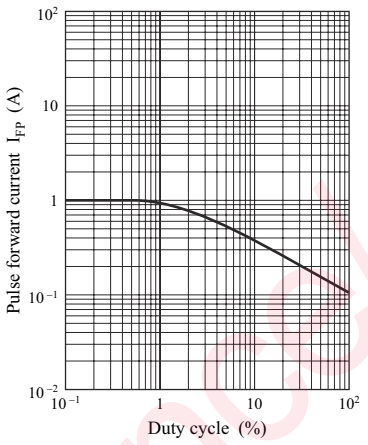
$$f_C : 10 \times \log \frac{P_O \text{ at } f = f_C}{P_O \text{ at } f = 1 \text{ MHz}} = -3$$

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

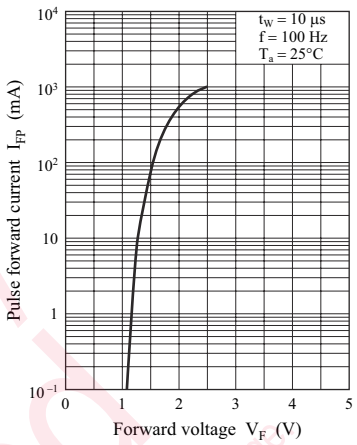
I_F — T_a



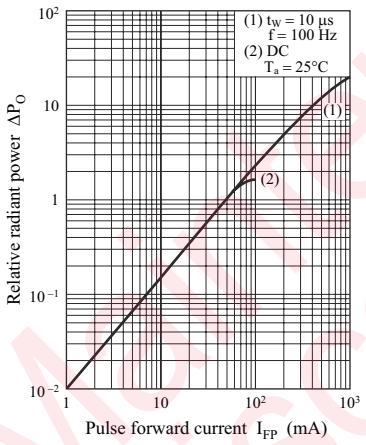
I_{FP} — Duty cycle



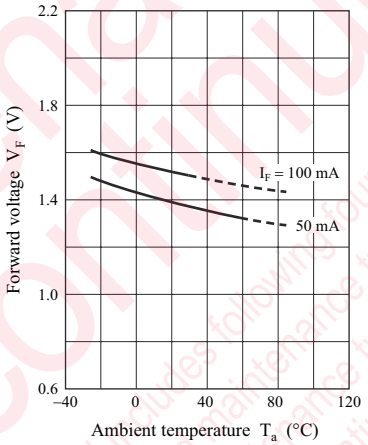
I_{FP} — V_F



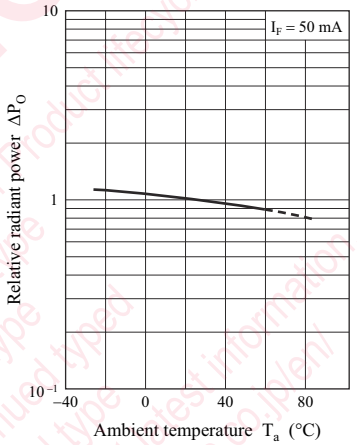
ΔP_O — I_{FP}



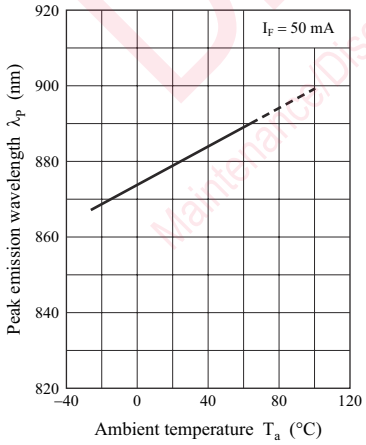
V_F — T_a



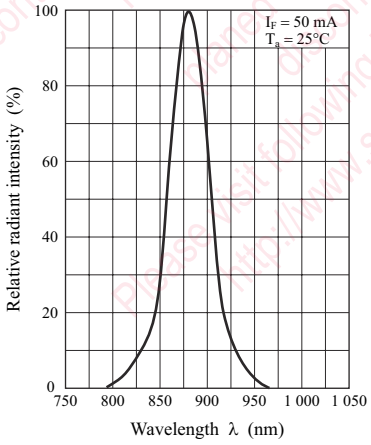
ΔP_O — T_a



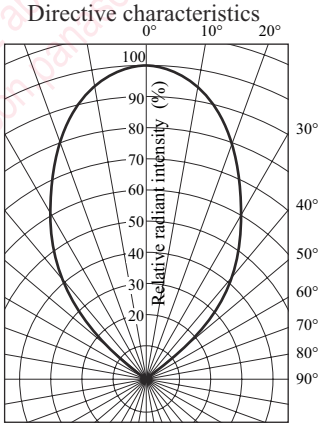
λ_P — T_a



Relative radiant intensity — λ



Directive characteristics



■ Package (Unit: mm)

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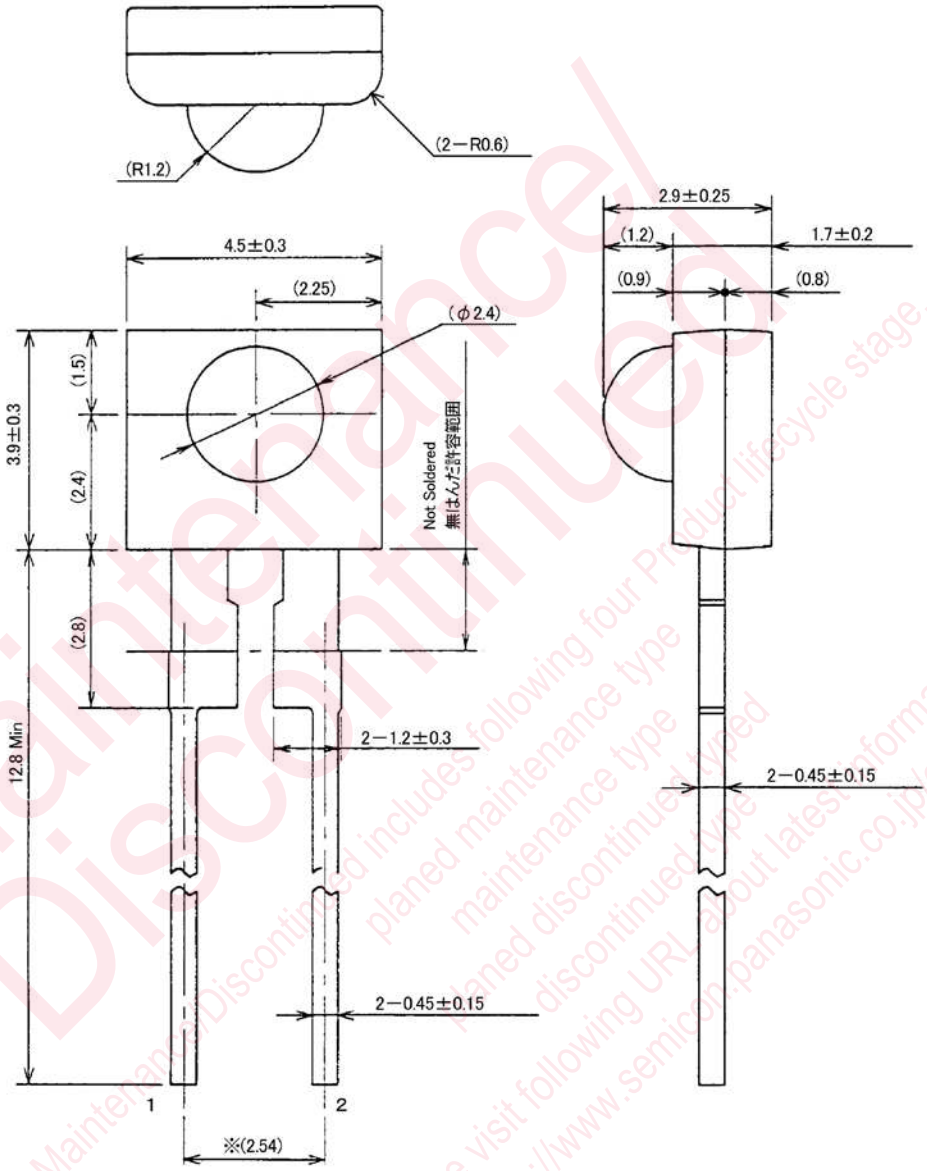

- Pin name
  1: Cathode
  2: Anode

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