

LN175

GaAlAs Infrared Light Emitting Diode

For optical control systems

■ Features

- High-power output, high-efficiency: $P_O = 12$ mW (typ.)
- Emitted light spectrum suited for silicon photodetectors: $\lambda_p = 900$ nm (typ.)
- Good radiant power output linearity with respect to input current
- Wide directivity: $\theta = 120^\circ$ (typ.)

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

Parameter	Symbol	Rating	Unit
Power dissipation	P_D	170	mW
Forward current	I_F	100	mA
Pulse forward current *	I_{FP}	2	A
Reverse voltage	V_R	3	V
Operating ambient temperature	T_{opr}	-25 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$

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

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

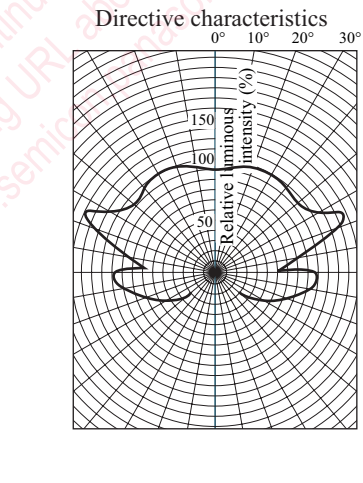
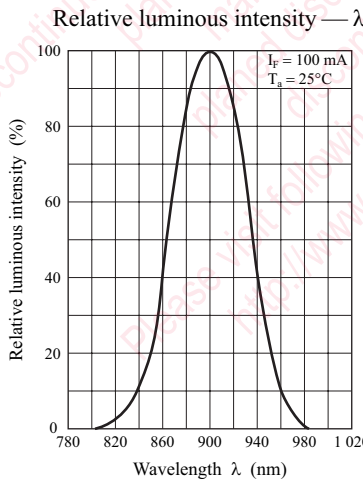
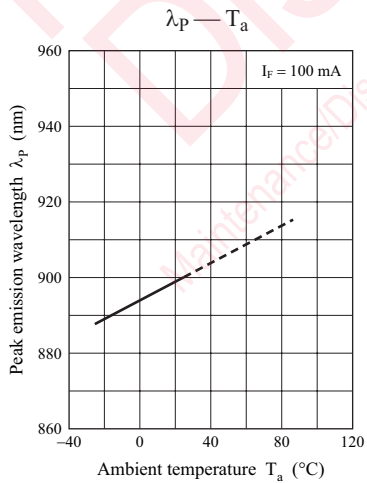
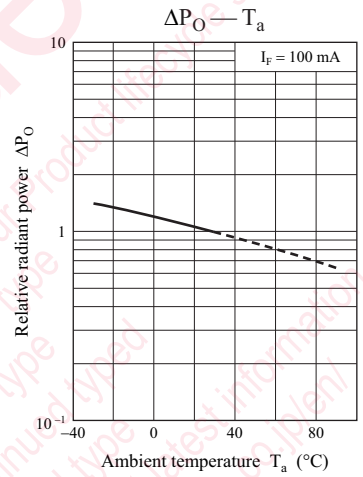
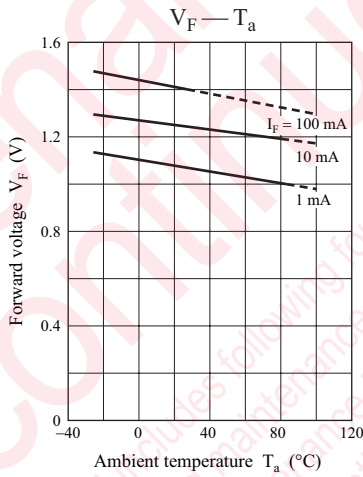
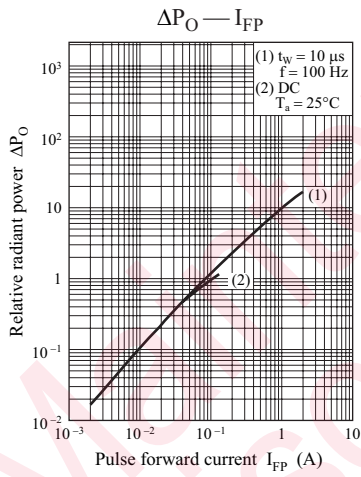
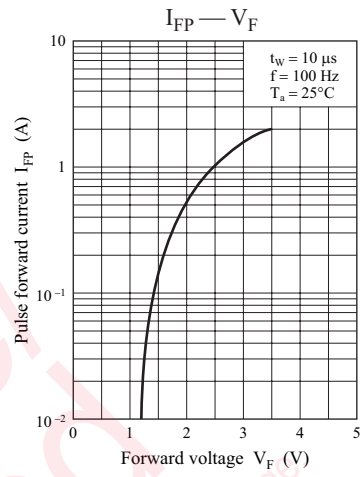
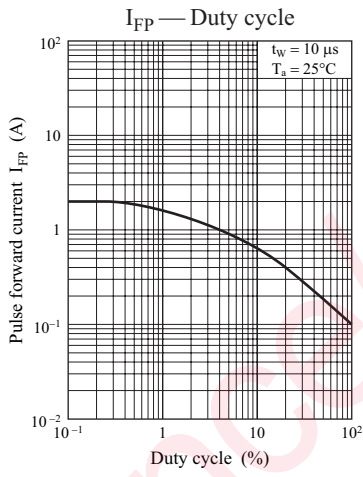
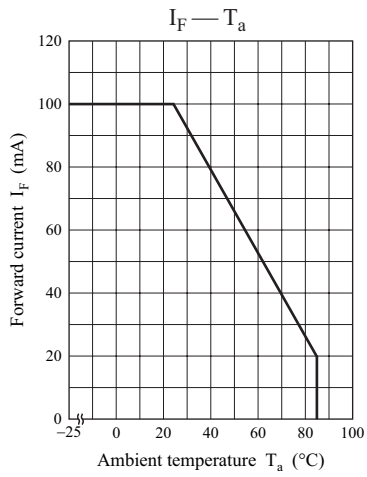
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Radiant power *	P_O	$I_F = 100$ mA	7.0	12.0		mW
Reverse current	I_R	$V_R = 3$ V			10	μA
Forward voltage	V_F	$I_F = 100$ mA		1.4	1.7	V
Terminal capacitance	C_t	$V_R = 0$ V, $f = 1$ MHz		50		pF
Peak emission wavelength	λ_p	$I_F = 100$ mA		900		nm
Spectral half band width	$\Delta\lambda$	$I_F = 100$ mA		70		nm
Rise time	t_r	$I_{FP} = 100$ mA		700		ns
Fall time	t_f	$I_{FP} = 100$ mA		700		ns
Half-power angle	θ	The angle when the radiant power is halved.		120		$^\circ$

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

2. Cutoff frequency: 0.55 MHz

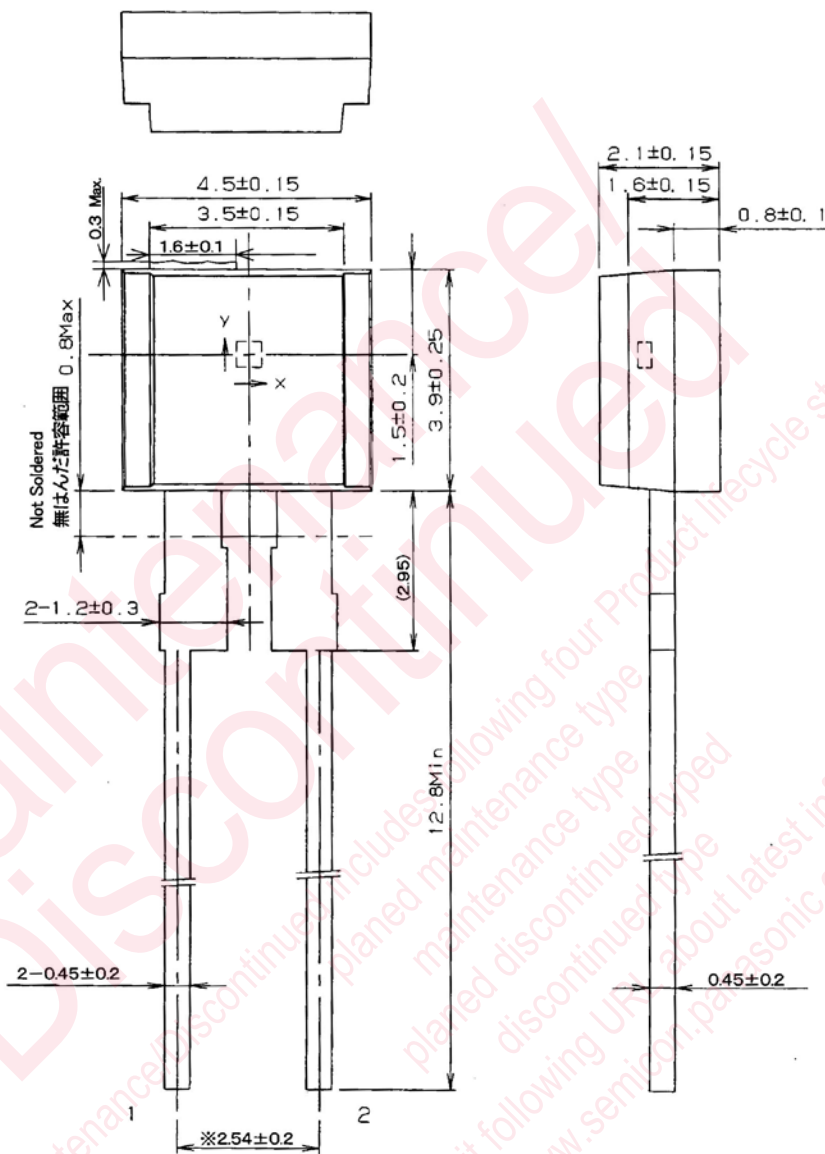
$$f_c : 10 \times \log \frac{P_O \text{ at } f = f_c}{P_O \text{ at } f = 1 \text{ MHz}} = -3$$

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



■ Package (Unit: mm)

LETFSN2S0001



- Pin name
- 1: Cathode
- 2: Anode

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