



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# 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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

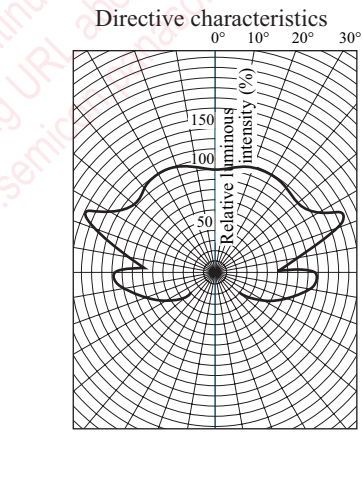
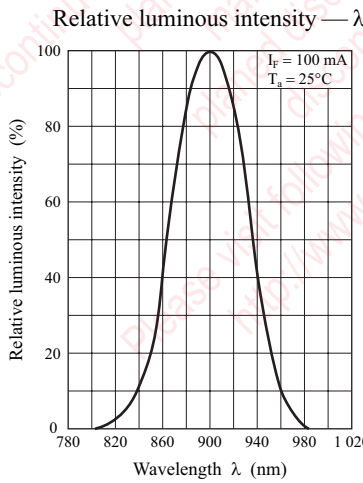
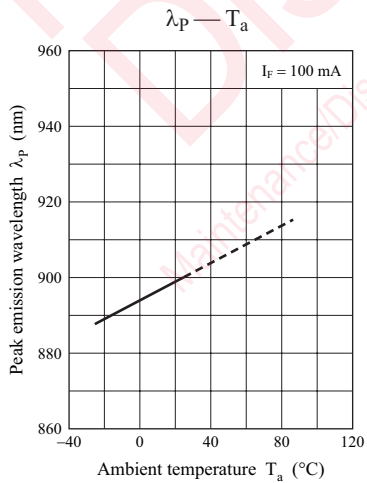
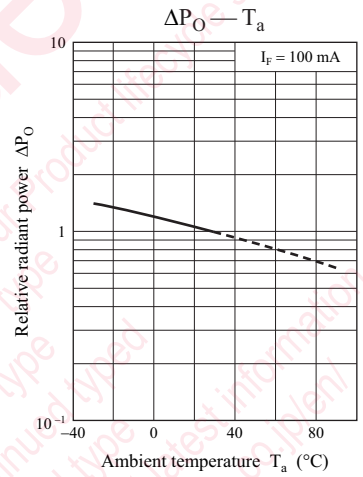
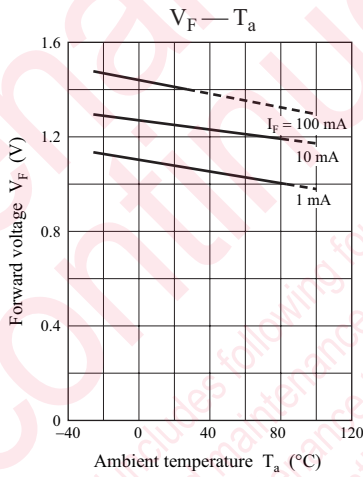
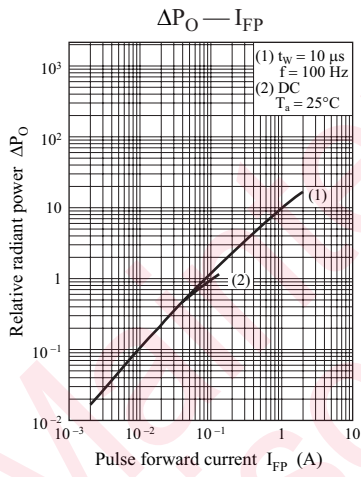
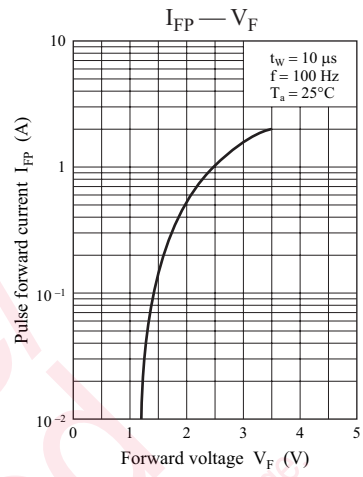
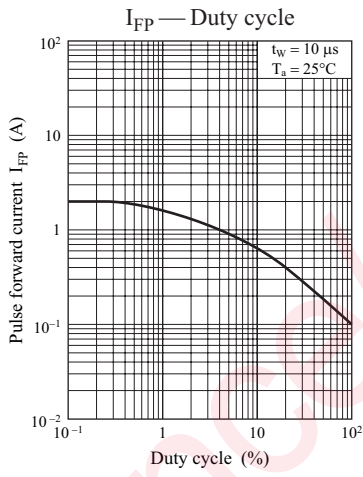
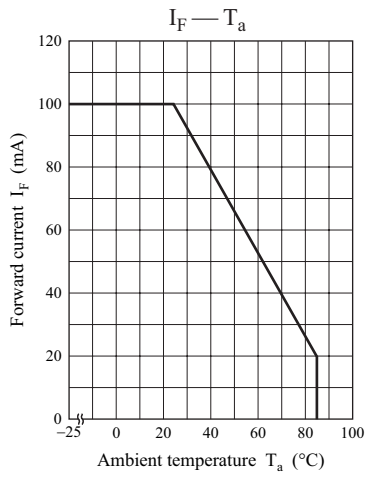
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Radiant power *	$P_O$	$I_F = 100$ mA	7.0	12.0		mW
Reverse current	$I_R$	$V_R = 3$ V			10	$\mu\text{A}$
Forward voltage	$V_F$	$I_F = 100$ mA		1.4	1.7	V
Terminal capacitance	$C_t$	$V_R = 0$ V, $f = 1$ MHz		50		pF
Peak emission wavelength	$\lambda_p$	$I_F = 100$ 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	$\theta$	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.





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