

# LN152

## GaAs Infrared Light Emitting Diode

For optical control systems

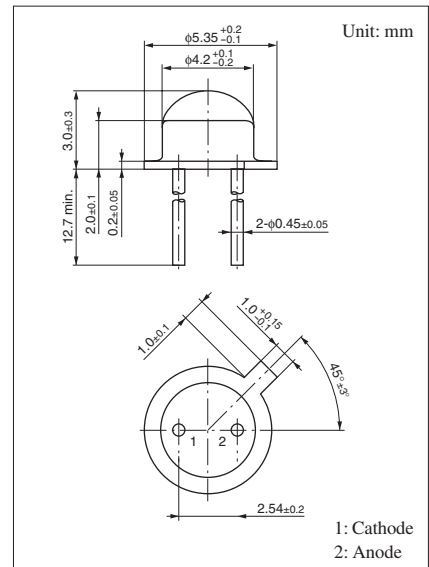
### ■ Features

- High-power output, high-efficiency:  $P_O = 10$  mW (typ.)
- Wide directivity, matched for external optical systems:  $\theta = 90^\circ$
- Infrared light emission close to monochromatic light:  
 $\lambda_P = 950$  nm (typ.)
- Optimum for measuring instruments and control equipments in combination with silicon photodetectors
- High-speed modulation

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

Parameter	Symbol	Rating	Unit
Reverse voltage	$V_R$	3	V
Forward current	$I_F$	100	mA
Pulse forward current *	$I_{FP}$	1.5	A
Power dissipation	$P_D$	160	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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

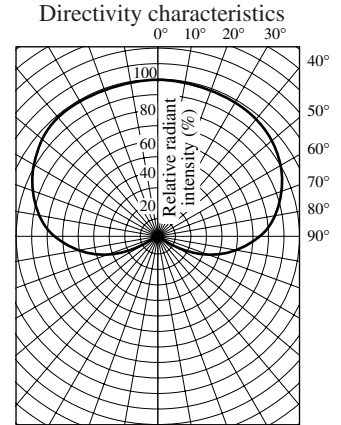
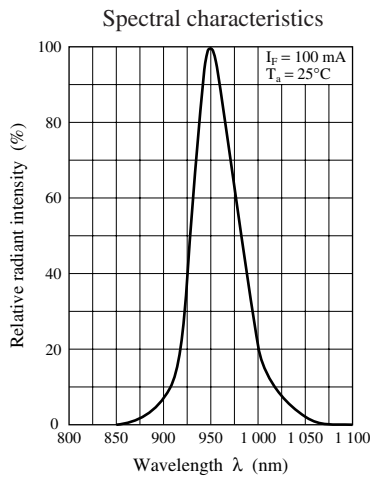
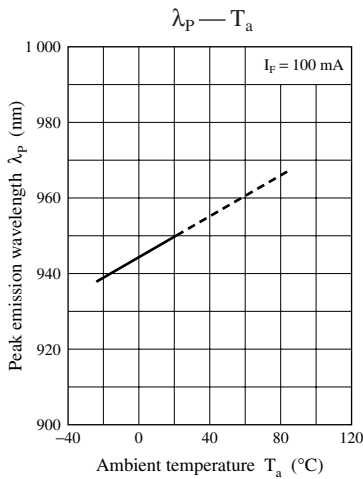
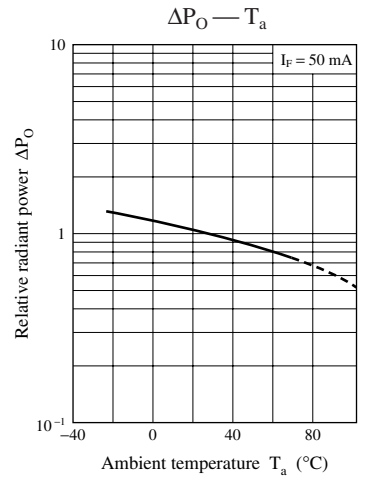
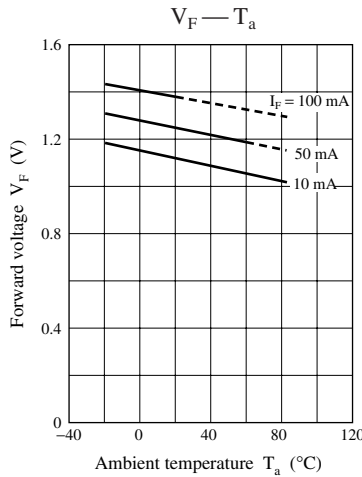
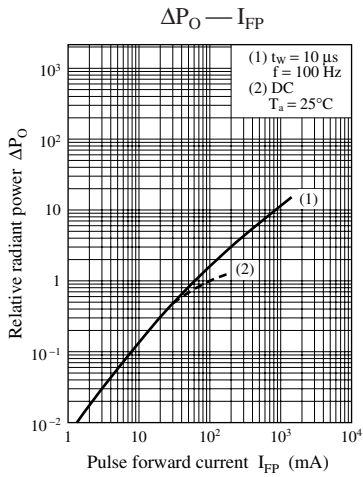
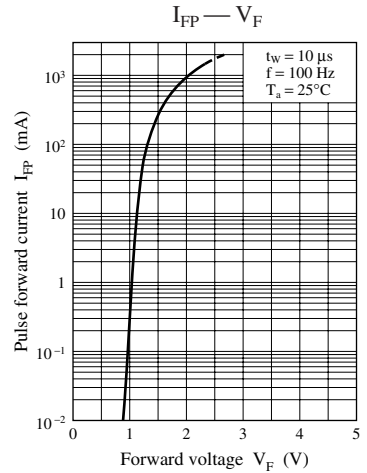
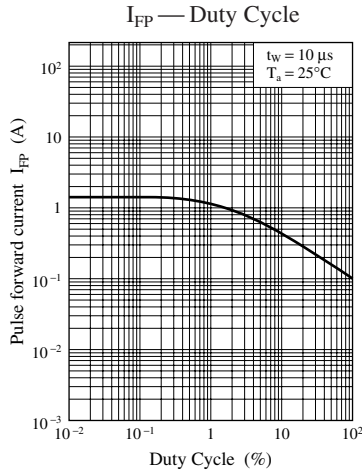
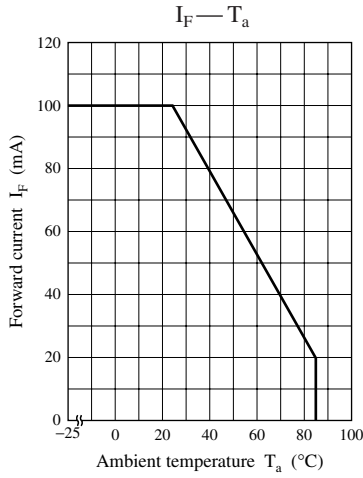
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	$V_F$	$I_F = 100$ mA		1.3	1.6	V
Reverse current	$I_R$	$V_R = 3$ V			10	$\mu\text{A}$
Radiant power *	$P_O$	$I_F = 100$ mA	5	10		mW
Peak emission wavelength	$\lambda_P$	$I_F = 100$ mA		950		nm
Spectral half band width	$\Delta\lambda$	$I_F = 100$ mA		50		nm
Terminal capacitance	$C_t$	$V_R = 0$ V, $f = 1$ MHz		60		pF
Rise time	$t_r$	$I_{FP} = 100$ mA		1		$\mu\text{s}$
Fall time	$t_f$			1		$\mu\text{s}$
Half-power angle	$\theta$	The angle when the radiant power is halved		90		$^\circ$

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.



## 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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