

# LN152

## GaAs Infrared Light Emitting Diode

For optical control systems

### ■ Features

- High-power output, high-efficiency:  $P_O = 10 \text{ mW}$  (typ.)
- Wide directivity, matched for external optical systems:  $\theta = 90^\circ$
- Infrared light emission close to monochromatic light:  $\lambda_P = 950 \text{ nm}$  (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
Power dissipation	$P_D$	160	mW
Forward current	$I_F$	100	mA
Pulse forward current *	$I_{FP}$	1.5	A
Reverse voltage	$V_R$	3	V
Operating ambient temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$

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

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

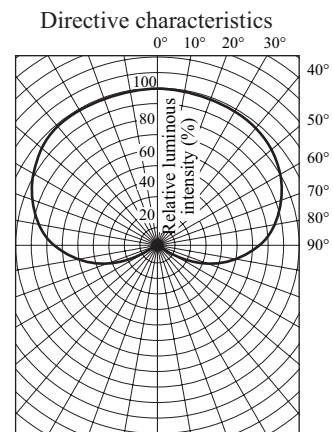
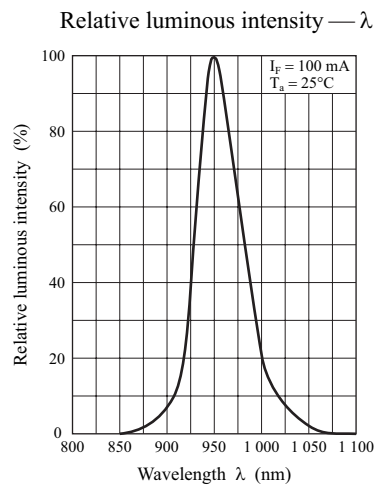
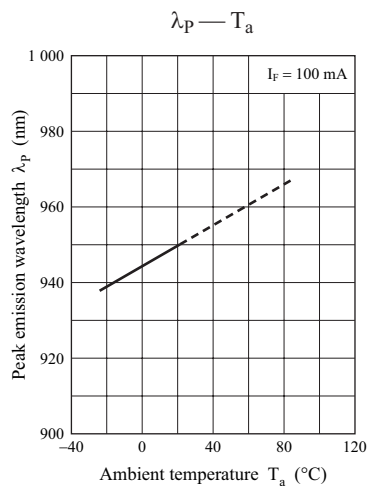
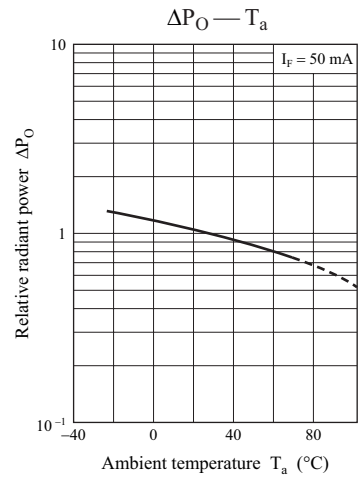
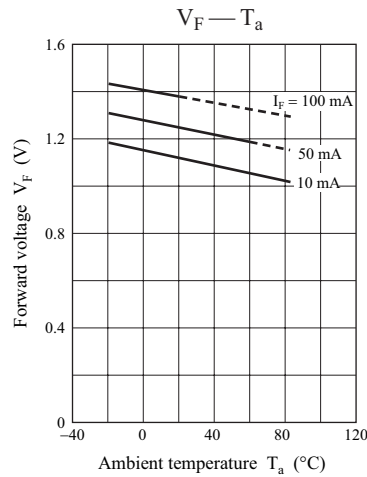
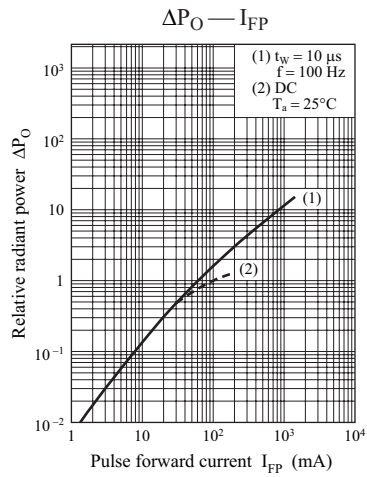
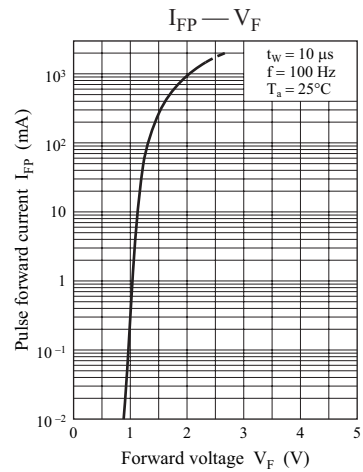
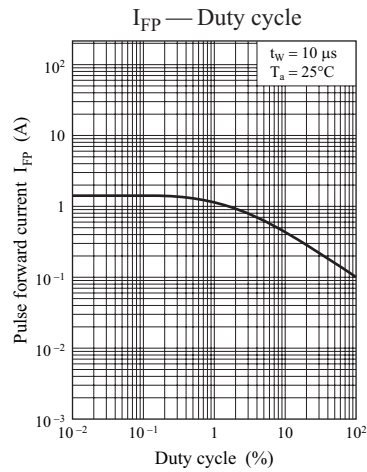
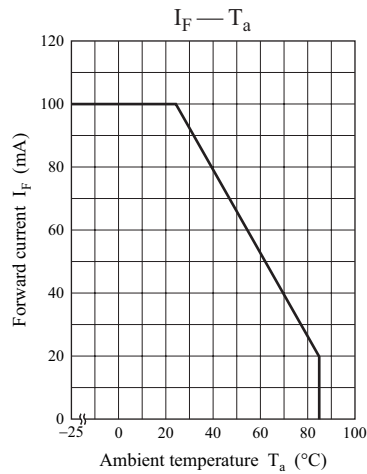
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Radiant power *	$P_O$	$I_F = 100 \text{ mA}$	5	10		mW
Reverse current	$I_R$	$V_R = 3 \text{ V}$			10	$\mu\text{A}$
Forward voltage	$V_F$	$I_F = 100 \text{ mA}$		1.3	1.6	V
Terminal capacitance	$C_t$	$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$		60		pF
Peak emission wavelength	$\lambda_P$	$I_F = 100 \text{ mA}$		950		nm
Spectral half band width	$\Delta\lambda$	$I_F = 100 \text{ mA}$		50		nm
Rise time	$t_r$	$I_{FP} = 100 \text{ mA}$		1		$\mu\text{s}$
Fall time	$t_f$	$I_{FP} = 100 \text{ mA}$		1		$\mu\text{s}$
Half-power angle	$\theta$	The angle when the radiant power is halved.		35		$^\circ$

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

2. Cutoff frequency: 1 MHz

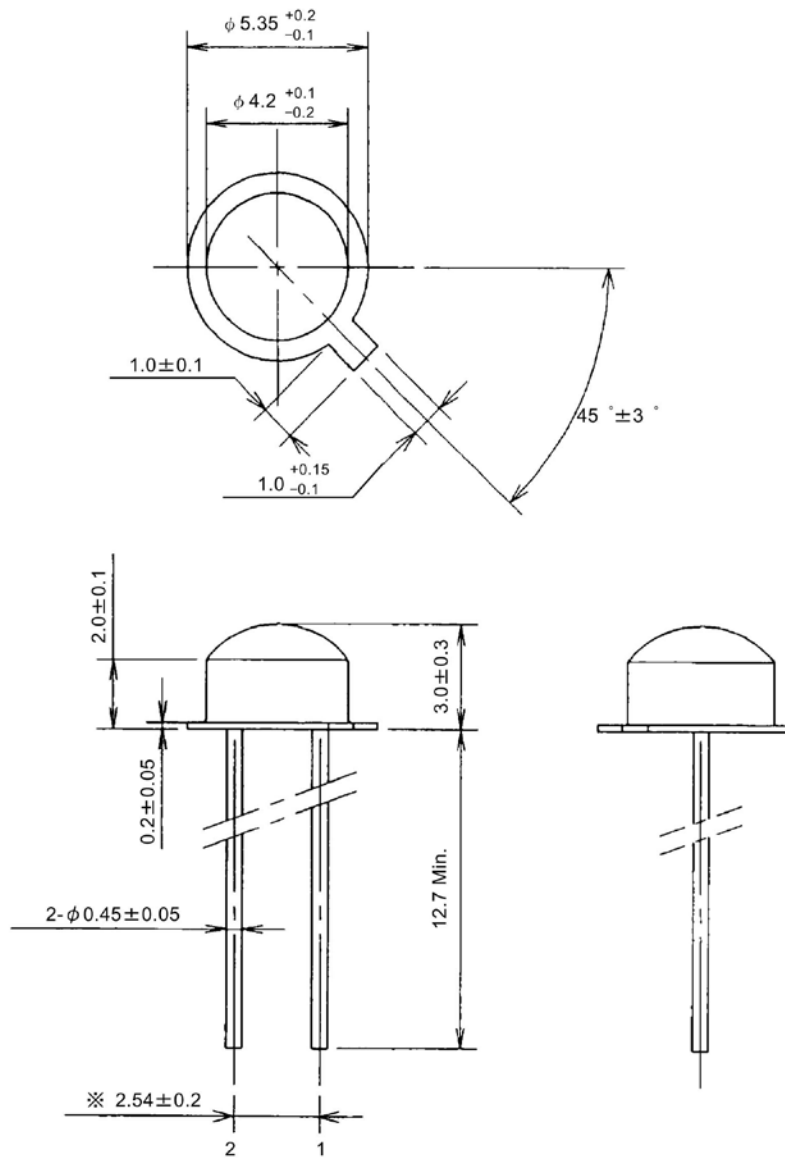
$$f_C : 10 \times \log \frac{P_O \text{ at } f = f_C}{P_O \text{ at } f = 50 \text{ kHz}} = -3$$

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



■ Package (Unit: mm)

# MEDLTN2S0001



- Pin name
- 1: Anode
- 2: Cathode

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