

# LN51F, LN51L

## GaAs Infrared Light Emitting Diodes

For optical control systems

### ■ Features

- High-power output, high-efficiency :  $P_O = 6 \text{ mW}$  (typ.)
- Fast response :  $t_r, t_f = 1 \mu\text{s}$  (typ.)
- Infrared light emission close to monochromatic light :  $\lambda_p = 950 \text{ nm}$  (typ.)
- Narrow directivity, suitable for effective use of optical output :  $\theta = 8 \text{ deg.}$  (LN51L)
- Wide directivity, matched for external optical systems :  $\theta = 32 \text{ deg.}$  (LN51F)
- TO-18 standard type package

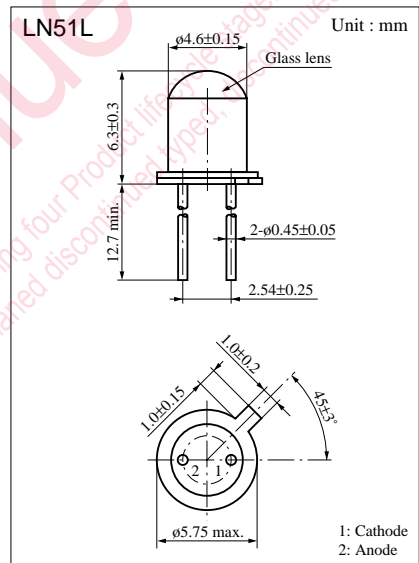
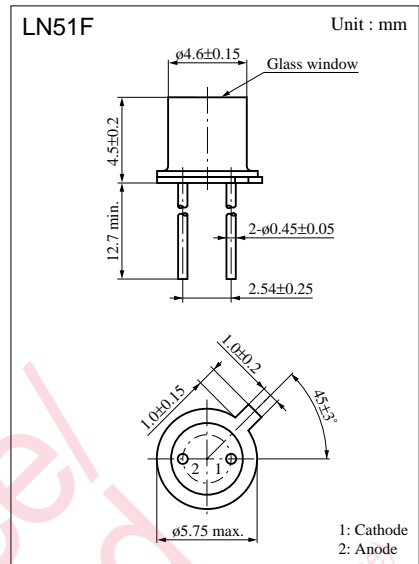
### ■ Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

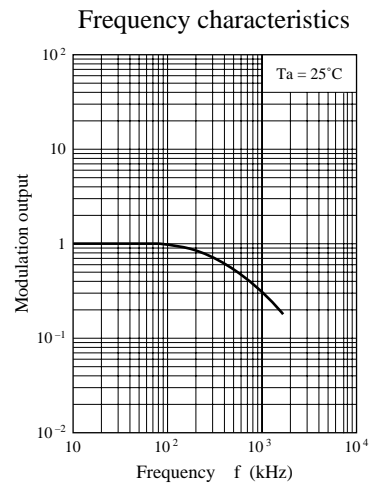
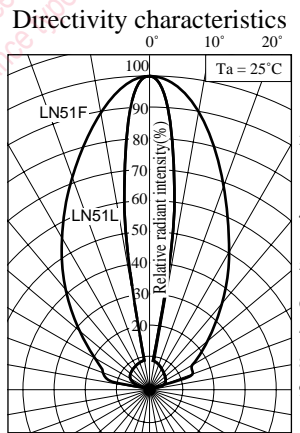
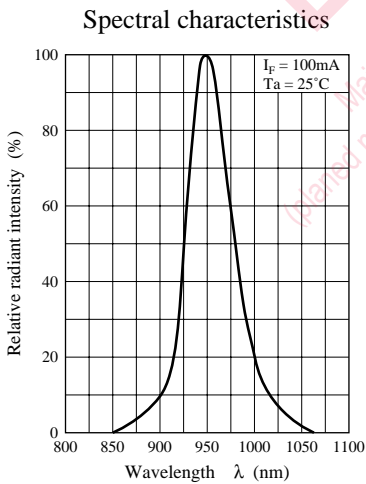
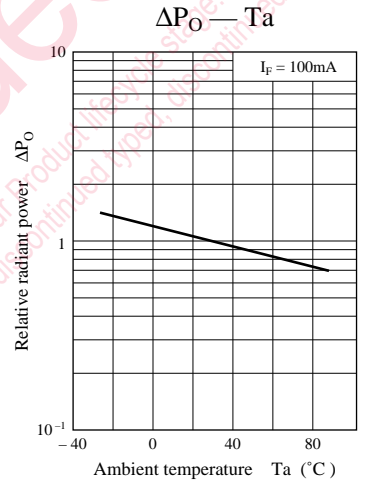
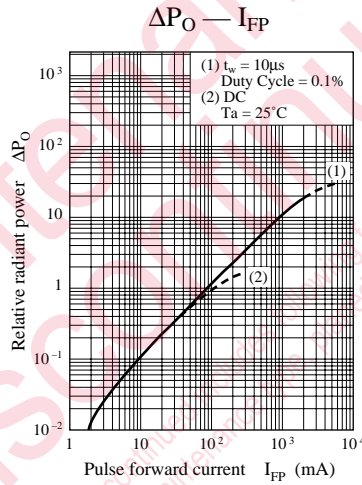
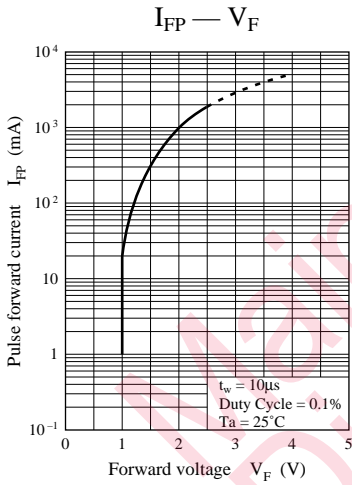
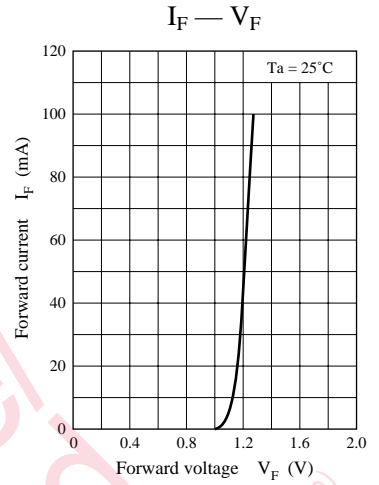
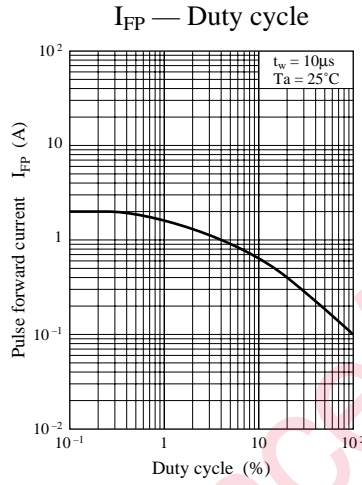
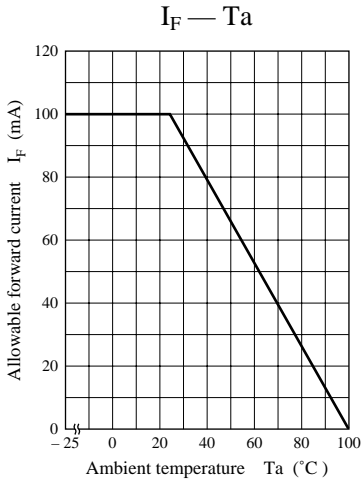
Parameter	Symbol	Ratings	Unit
Power dissipation	$P_D$	150	mW
Forward current (DC)	$I_F$	100	mA
Pulse forward current	$I_{FP}^*$	2	A
Reverse voltage (DC)	$V_R$	5	V
Operating ambient temperature	$T_{opr}$	-25 to +100	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$

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

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

Parameter	Symbol	Conditions	min	typ	max	Unit
Radiant power	$P_O$	$I_F = 100\text{mA}$	3	6		mW
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
Forward voltage (DC)	$V_F$	$I_F = 100\text{mA}$		1.25	1.5	V
Reverse current (DC)	$I_R$	$V_R = 5\text{V}$		0.005	10	$\mu\text{A}$
Capacitance between pins	$C_t$	$V_R = 0\text{V}, f = 1\text{MHz}$		50		pF
Rise time	$t_r$	$I_{FP} = 100\text{mA}$		1		$\mu\text{s}$
Fall time	$t_f$			1		$\mu\text{s}$
Half-power angle	LN51F	$\theta$	The angle in which radiant intensity is 50%		32	deg.
	LN51L				8	deg.





# 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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