

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

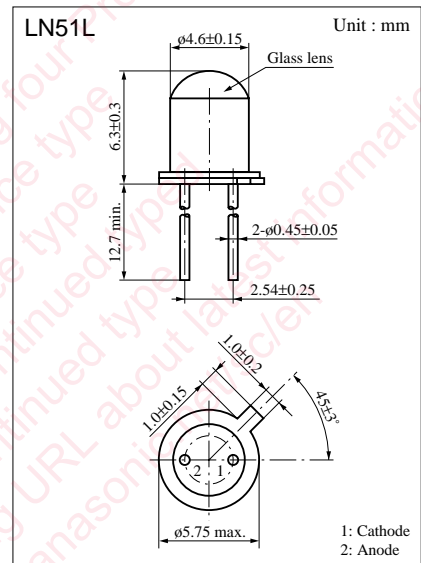
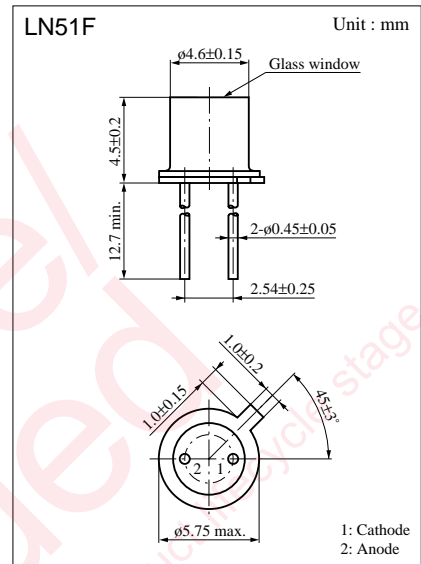
■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

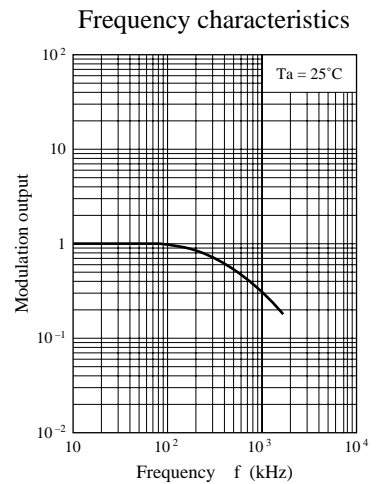
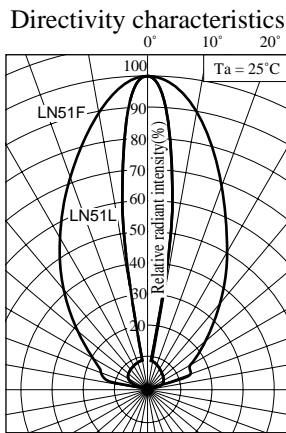
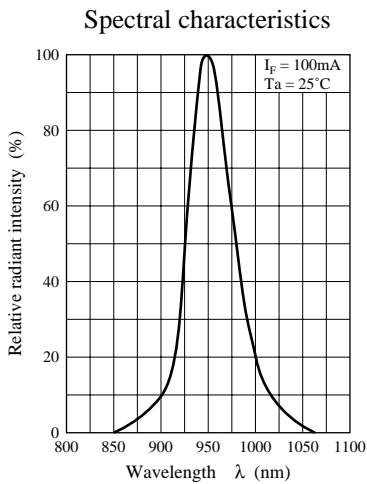
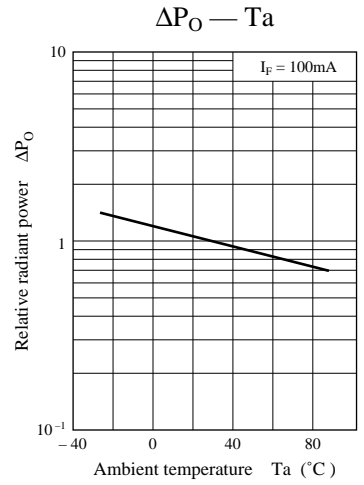
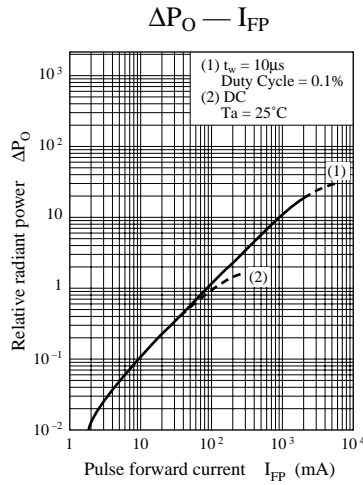
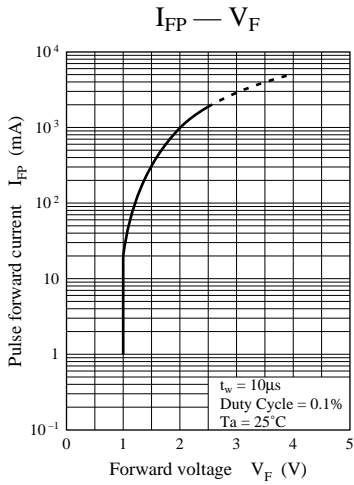
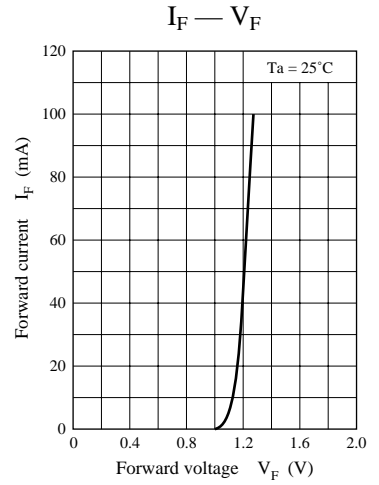
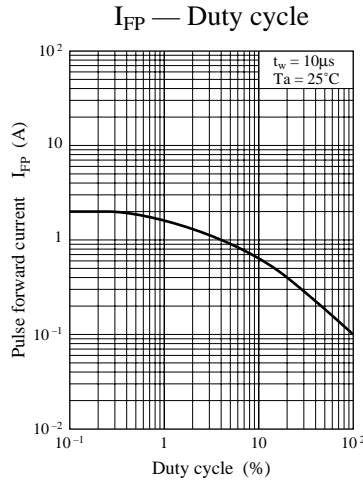
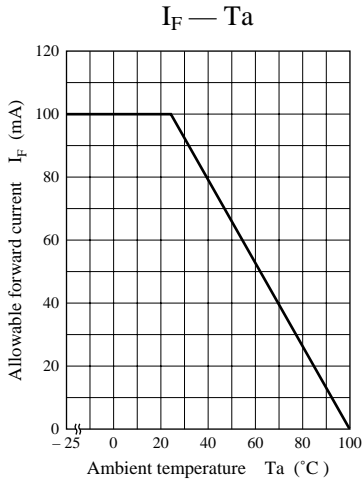
Parameter	Symbol	Ratings	Unit
Power dissipation	P_D	150	mW
Forward current (DC)	I_F	100	mA
Pulse forward current	I_{FP}^*	2	A
Reverse voltage (DC)	V_R	5	V
Operating ambient temperature	T_{opr}	-25 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +100	$^\circ\text{C}$

* $f = 100 \text{ Hz}$, 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	λ_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	μA	
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		μs	
Fall time	t_f			1		μs	
Half-power angle	LN51F	θ	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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