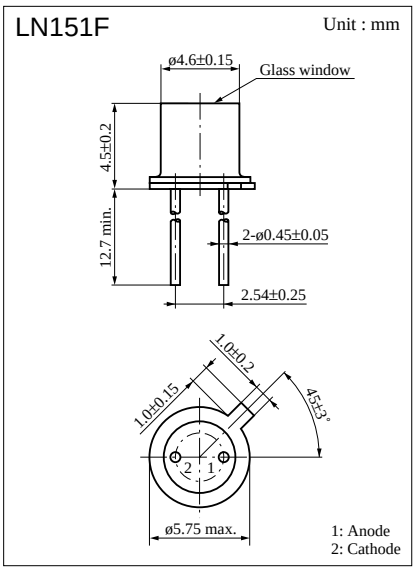
LN151F, LN151L

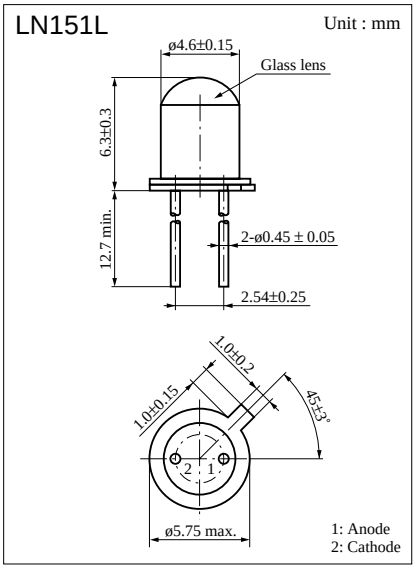
GaAs Infrared Light Emitting Diodes

For optical control systems



Features

- High-power output, high-efficiency : P_O = 7.5 mW (typ.)
- Fast response and high-speed modulation capability :
  t_r, t_f = 1 μs (typ.)
- Infrared light emission close to monochromatic light :
  λ_P = 950 nm (typ.)
- Narrow directivity, suitable for effective use of radiant power (LN151L)
- Wide directivity, matched for external optical systems (LN151F)
- TO-18 standard type package



Absolute Maximum Ratings (Ta = 25˚C)

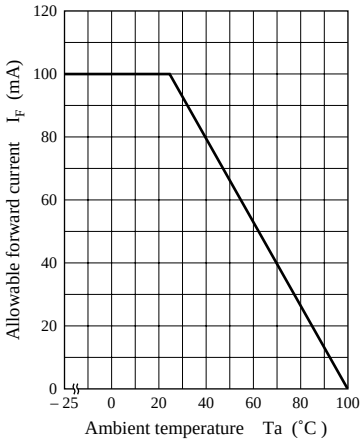
Parameter	Symbol	Ratings	Unit
Power dissipation	P_D	160	mW
Forward current (DC)	I_F	100	mA
Pulse forward current	I_{FP}*	2	A
Reverse voltage (DC)	V_R	3	V
Operating ambient temperature	T_{opr}	–25 to +100	˚C
Storage temperature	T_{stg}	–30 to+100	˚C

* f = 100 Hz, Duty cycle = 0.1 %

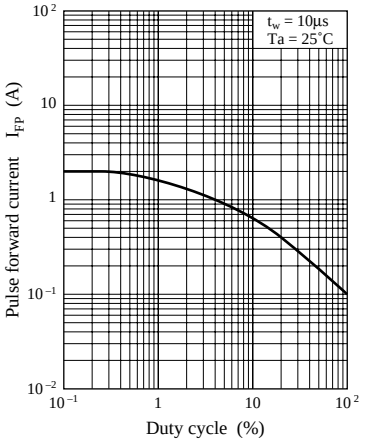
Electro-Optical Characteristics (Ta = 25˚C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Radiant power		P_O	I_F = 100mA	5	7.5		mW
Peak emission wavelength		λ_P	I_F = 100mA		950		nm
Spectral half band width		$\Delta\lambda$	I_F = 100mA		50		nm
Forward voltage (DC)		V_F	I_F = 100mA		1.3	1.6	V
Reverse current (DC)		I_R	V_R = 3V			10	μA
Capacitance between pins		C_t	V_R = 0V, f = 1MHz		60		pF
Rise time		t_r	I_{FP} = 100mA		1		μs
Fall time		t_f			1		μs
Half-power angle	LN151F	θ	The angle in which radiant intencity is 50%		32		deg.
	LN151L				8		deg.

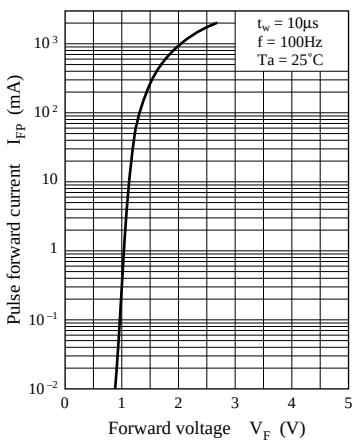
I_F — Ta



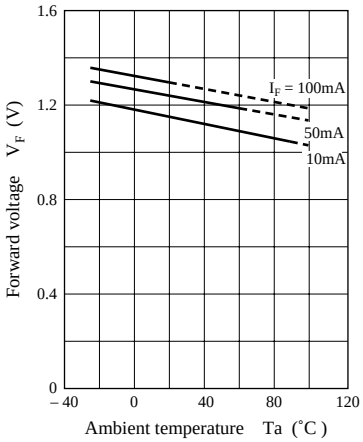
I_{FP} — Duty cycle



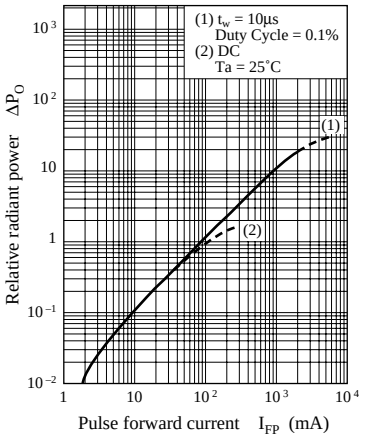
I_{FP} — V_F



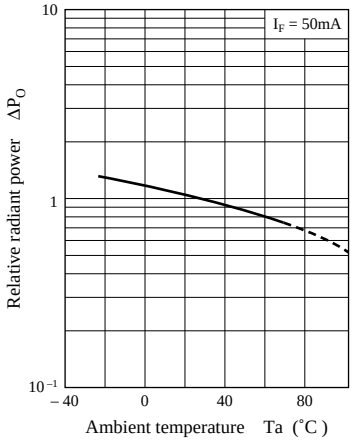
V_F — Ta



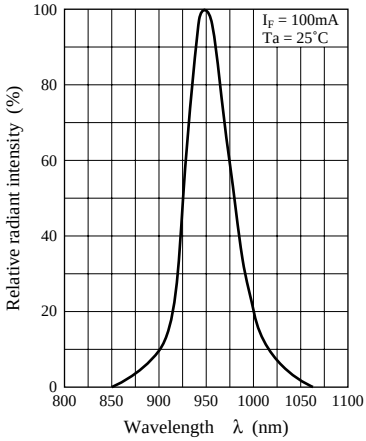
ΔP_O — I_{FP}



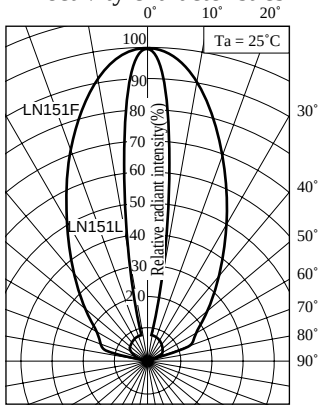
ΔP_O — Ta



Spectral characteristics



Directivity characteristics



Frequency characteristics