

GaAlAs INFRARED EMITTING DIODE

■ GENERAL DESCRIPTION

The NJL1120B is a high output, high speed infrared emitting diode.

■ FEATURES

- High output, high-speed infrared emitting diode due to the use of GaAlAs
- High output—In efficiency with approximately 2.4 times versus our conventional products due to the use of GaAlAs chip
- High speed response with approximately 2 times that of our conventional products
- High reliability with a metal package
- In combination with NJL611B, NJL612B, NJL721B, NJL7260B, and NJL811B, this device is most suitable for card readers and other information units, far-distance optoelectronic switches, tachometers, smoke sensors etc.

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Forward Current (Continuous)	I_F	100	mA
Pulse Forward Current	I_{FP}	1(note)	A
Reverse Voltage (Continuous)	V_R	6	V
Power Dissipation	P_D	170	mW
Operating Temperature	T_{opr}	-40~+100	°C
Storage Temperature	T_{stg}	-55~+125	°C
Soldering Temperature	T_{sol}	260	°C

(10sec. 1.5mm from body)

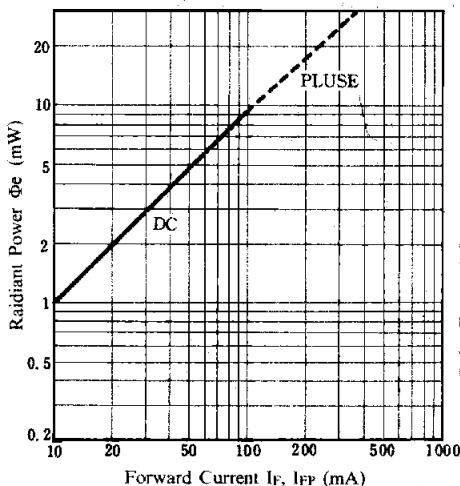
(note) Pulse Width: 100 μ s. Duty Ratio: 0.01

■ ELECTRO-OPTICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Radiant Power	Φ_e	$I_F=50mA$	—	4.9	—	mW
Spectral Line Halfwidth	$\Delta\lambda$	$I_F=50mA$	—	75	—	nm
Forward Voltage	V_F	$I_F=50mA$	—	1.28	—	V
Reverse Current	I_R	$V_R=6V$	—	—	1	μ A
Capacitance	C_t	$V_R=0V, f=1MHz$	—	25	—	pF
Rise Time	t_r	$I_F=50mA$	—	500	—	ns
Fall Time	t_f	$I_F=50mA$	—	500	—	ns
Peak Wavelength	λ_p	$I_F=50mA$	—	900	—	nm

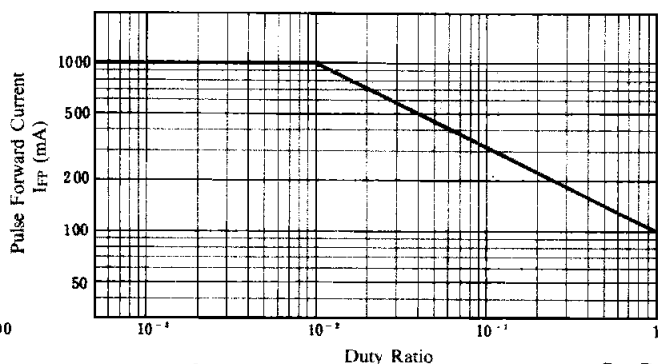
■ TYPICAL CHARACTERISTICS

Radiant Power vs. Forward Current (Ta=25°C)

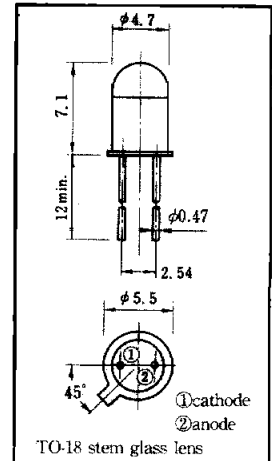


Maximum Pulse Forward Current vs. Duty Ratio

(Ta=25°C, tw=100 μ s max.)



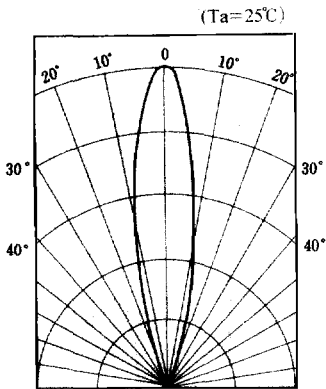
■ OUTLINE (typ.) Unit: mm



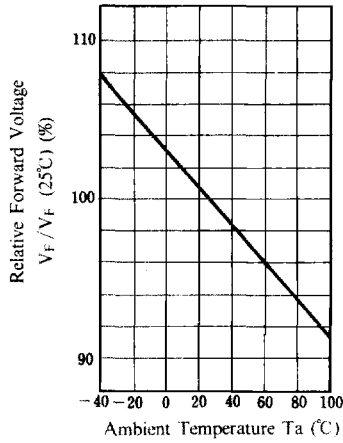
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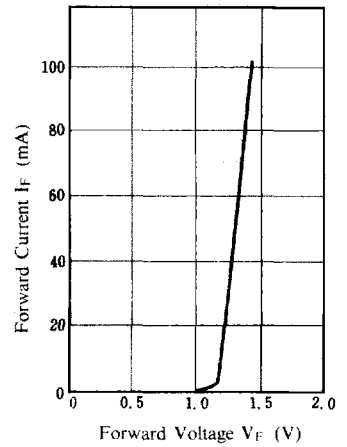
Typical Radiation Pattern



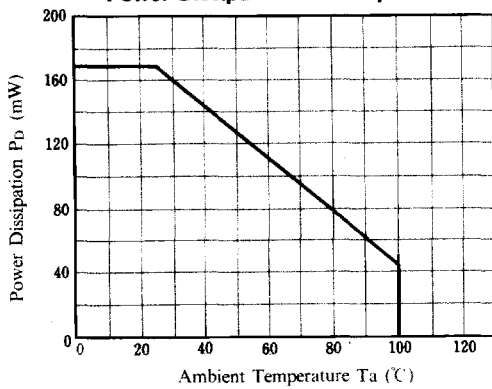
Forward Voltage vs. Temperature



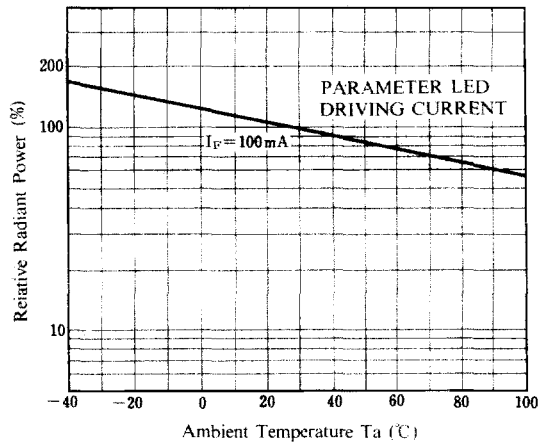
Forward Current vs. Forward Voltage ($T_a = 25^\circ\text{C}$)



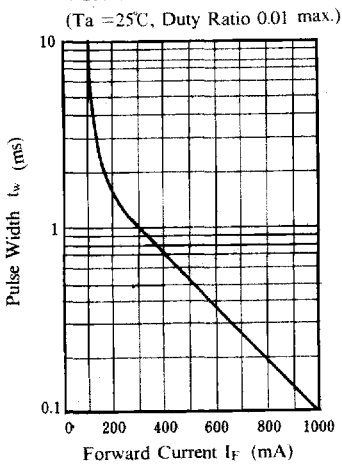
Power Dissipation vs. Temperature



Relative Radiant Power vs. Temperature



Maximum Pulse Width vs. Forward Current



Relative Intensity vs. Wavelength

