

AlGaAs laser diodes

RLD78NZH1

The RLD78NZH1 is the laser diode for laser printers that has excellent temperature characteristics and excellent droop characteristics.

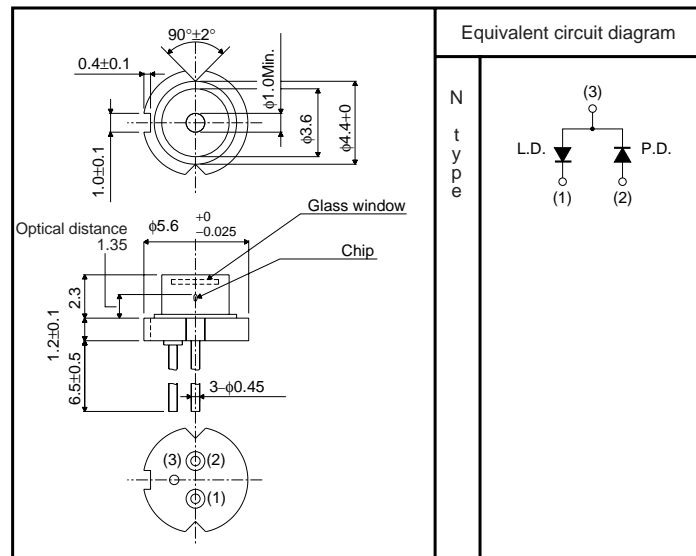
●Applications

Laser printers
Optical sensors

●Features

- 1) Absolute max. output power is 5mW.
- 2) High-precision, compact package.($\phi 5.6\text{mm}$)
- 3) Low droop.
- 4) Can be driven by single power supply (N type).

●External dimensions (Unit : mm)



●Absolute maximum ratings (Tc=25°C)

Parameter	Symbol	Limits	Unit	
Output	P _o	5	mW	
Reverse voltage	Laser	V _R	2	V
	PIN photodiode	V _{R (PIN)}	30	V
Operating temperature	T _{opr}	-10 to +60	°C	
Storage temperature	T _{stg}	-40 to +85	°C	

Laser diodes

●Electrical and optical characteristics (Tc=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I _{th}	-	16	45	mA	-
Operating current	I _{op}	-	28	65	mA	P _o =3mW
Operating voltage	V _{op}	-	1.9	2.3	V	P _o =3mW
Differential efficiency	η	0.1	0.25	0.4	mW/mA	$\frac{2mW}{I(3mW) - I(1mW)}$
Monitor current	I _m	0.2	0.45	0.9	mA	P _o =3mW
Parallel divergence angle	θ _∥ *	8	11	15	deg	P _o =3mW
Perpendicular divergence angle	θ _⊥ *	25	30	38	deg	
Parallel deviation angle	Δθ _∥	-	-	±2	deg	
Perpendicular deviation angle	Δθ _⊥	-	-	±3	deg	
Emission point accuracy	ΔX ΔY ΔZ	-100	-	+100	μm	-
Peak emission wavelength	λ	770	785	795	nm	P _o =3mW
Droop	ΔP	-	5	10	%	P _o =3mW

*θ_∥ and θ_⊥ are defined as the angle within which the intensity is 50% of the peak value.

●Electrical and optical characteristic curves

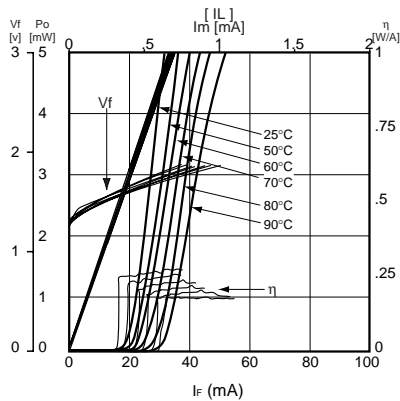


Fig.1 Dependence of I-L on temperature

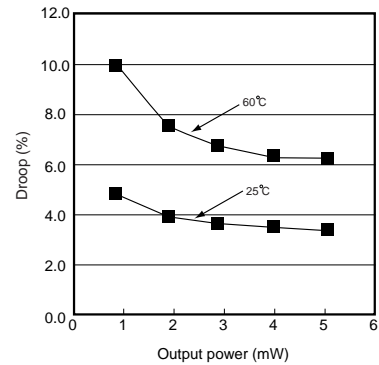


Fig.2 Dependence of droop on output power and temperature

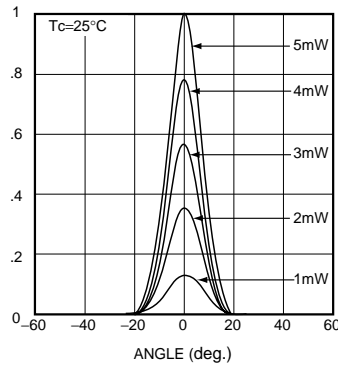


Fig.3 Parallel far field pattern

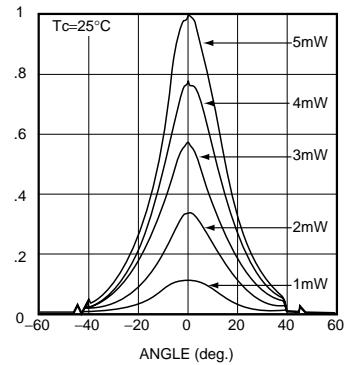


Fig.4 Perpendicular far field pattern

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