

AlGaAs laser diode

RLD78PZW1

The RLD78PZW1 is infrared laser diode high power output type (pulse 150mW, CW 95mW). This is the best for optical disk drive use, such as CD-R/RW.

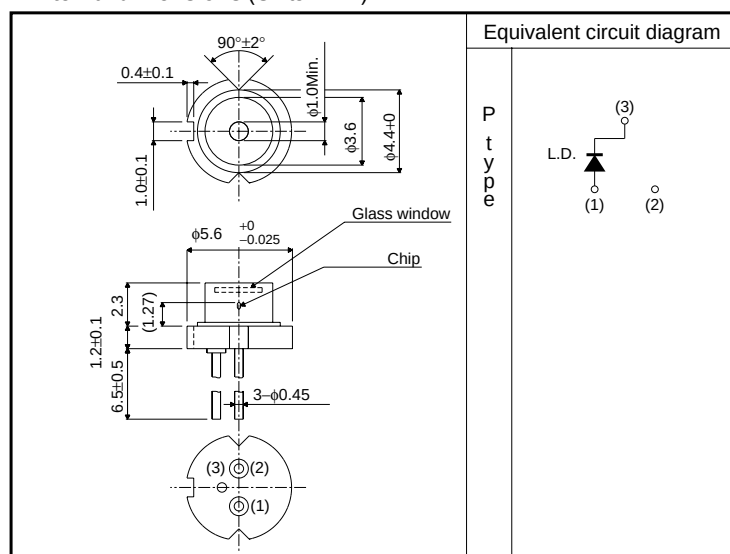
●Applications

Max. X24 speed CD-R/RW drives.

●Features

- 1) Absolute maximum optical power output : pulse 180mW
CW95mW
- 2) Wave length : Typ. 784nm
- 3) $\phi 5.6$ mm small packages

●External dimensions (Units : mm)



●Absolute maximum ratings (Tc=25°C)

Parameter		Symbol	Limits	Unit
Output		P _O	Pulsed 150 / CW95	mW
Reverse voltage	Raser	V _R	2	V
	PIN photodiode	V _{R(PIN)}	—	—
Operating temperature		T _{opr}	−10 to +70 (Pulsed) +60 (CW)	°C
Storage temperature		T _{stg}	−40 to +85	°C

Laser Diodes

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	—	30	50	mA	—
Operating current	I_{op}	—	120	150	mA	Po=80mW
Operating voltage	V_{op}	—	2.0	2.5	V	
Differential efficiency	η	0.7	0.9	1.4	mW/mA	
Parallel divergence angle	$\theta_{ }^*$	8	9	10	deg	
Perpendicular divergence angle	$\theta_{\perp}^*$	15	17	19	deg	
Parallel deviation angle	$\Delta\phi_{ }$	-2	0	+2	deg	
Perpendicular deviation angle	$\Delta\phi_{\perp}$	-3	0	+3	deg	—
Emission point accuracy	ΔX ΔY ΔZ	-80	0	+80	μm	
Peak emission wavelength	λ	779	784	789	nm	Po=80mW
Astigmatism	Δl	—	—	6	μm	NA=0.15, Po=80mW

* $\theta_{||}$ and $\theta_{\perp}$ are defined as the angle within which the intensity is 50% of the peak value.

●Electrical and optical characteristics curves

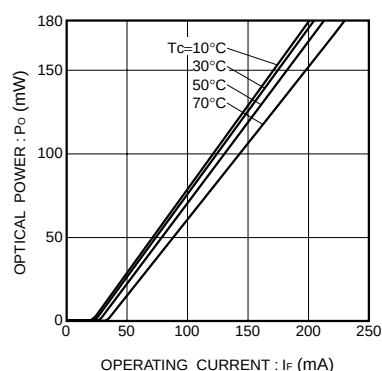


Fig.1 Optical output vs. operating current

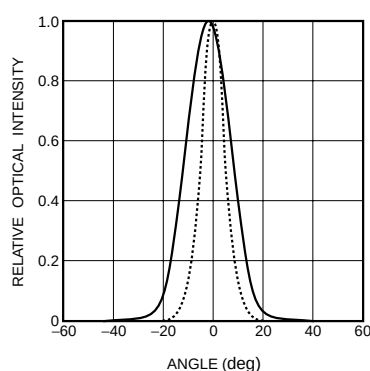


Fig.2 Far field pattern

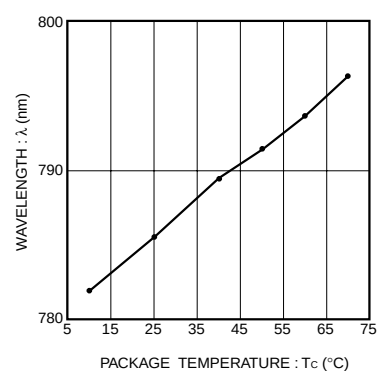


Fig.3 Dependence of wavelength on temperature