

# 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.

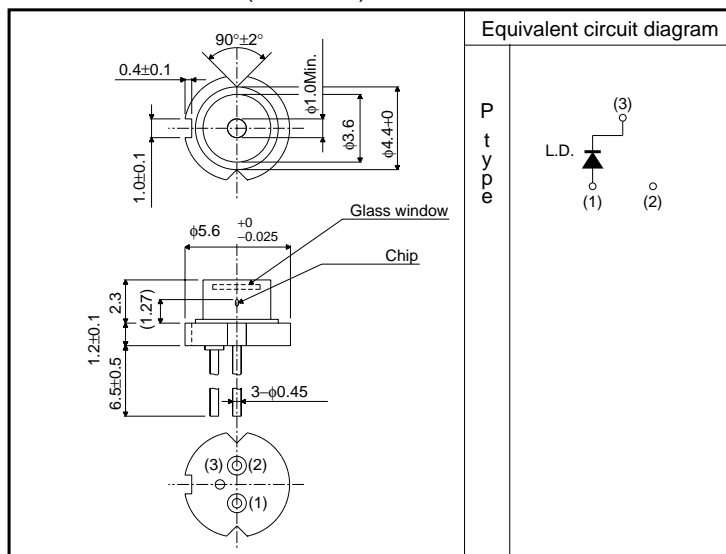
### ●Applications

Max. X24 speed CD-R/RW drives.

### ●Features

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

### ●External dimensions (Units : mm)



### ●Absolute maximum ratings (Tc=25°C)

Parameter		Symbol	Limits	Unit
Output		P <sub>o</sub>	Pulsed 150 / CW95	mW
Reverse voltage	Raser	V <sub>R</sub>	2	V
	PIN photodiode	V <sub>R(PIN)</sub>	—	—
Operating temperature		Topr	-10 to +70 (Pulsed) +60 (CW)	°C
Storage temperature		Tstg	-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	$\eta$	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	$\Delta X$ $\Delta Y$ $\Delta Z$	-80	0	+80	$\mu m$	-
Peak emission wavelength	$\lambda$	779	784	789	nm	Po=80mW
Astigmatism	$\Delta l$	-	-	6	$\mu m$	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

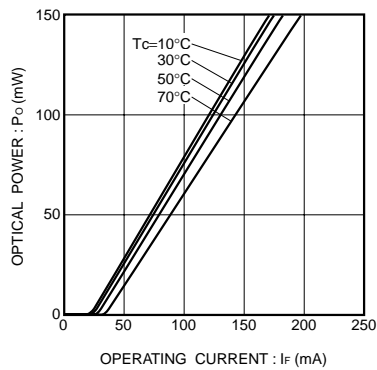


Fig.1 Optical output vs. operating current

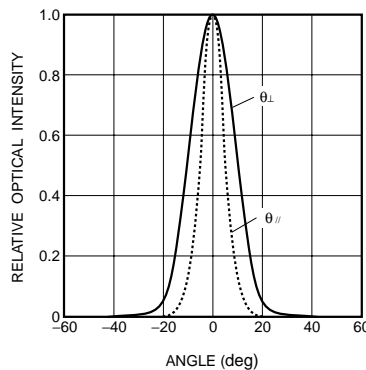


Fig.2 Far field pattern

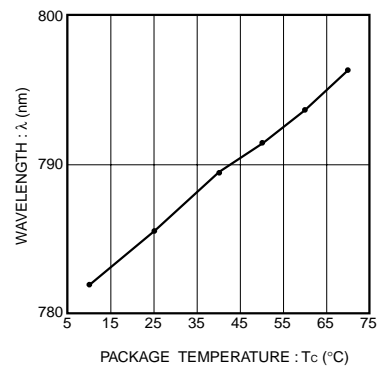


Fig.3 Dependence of wavelength on temperature