

# CD players, CD-ROM laser diode

## RLD78MYA1

Though it is an open type package, by using a metal cap, pressing structure correspondence and protection of a laser element are enabled, and reliability is secured.

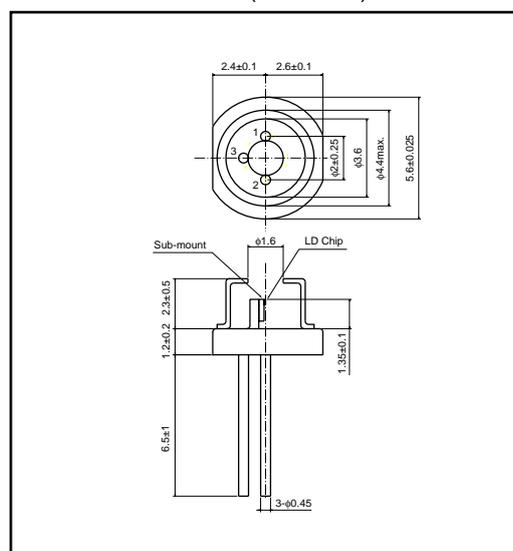
### ●Applications

Compact disc players  
CD-ROM

### ●Features

- 1)  $\phi 5.6$  metal shell type open package.
- 2) A laser element is protected by using a metal cap.
- 3) Interchangeability reservation with  $\phi 5.6$  metal package of an industry standard.

### ●External dimensions (Units : mm)



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

Parameter	Symbol	Limits	Unit	
Output	P <sub>O</sub>	5	mW	
Reverse voltage	Laser	V <sub>R</sub>	2	V
	PIN photodiode	V <sub>R (PIN)</sub>	30	V
Operating temperature	T <sub>opr</sub>	-10 to +70	°C	
Storage temperature	T <sub>stg</sub>	-40 to +85	°C	

Laser diodes

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I <sub>th</sub>	–	35	60	mA	–
Operating current	I <sub>op</sub>	–	45	70	mA	P <sub>o</sub> =3mW
Operating voltage	V <sub>op</sub>	–	1.9	2.3	V	P <sub>o</sub> =3mW
Differential efficiency	η	0.1	0.25	0.6	mW/mA	$\frac{2mW}{I(3mW)-I(1mW)}$
Monitor current	I <sub>m</sub>	0.05	0.15	0.3	mA	P <sub>o</sub> =3mW, V <sub>R(PIN)</sub> =15V
Parallel divergence angle	θ <sub>∥</sub> *	8	11	15	deg	P <sub>o</sub> =3mW
Perpendicular divergence angle	θ <sub>⊥</sub> *	20	37	45	deg	
Parallel deviation angle	Δφ <sub>∥</sub>	–	–	±2	deg	
Perpendicular deviation angle	Δφ <sub>⊥</sub>	–	–	±3	deg	
Emission point accuracy	ΔX	–	–	±100	μm	–
	ΔY					
	ΔZ					
Peak emission wavelength	λ	770	785	810	nm	P <sub>o</sub> =3mW
Signal-to-noise ratio	S / N	60	–	–	dB	f=720kHz, Δf=10kHz

\*θ<sub>∥</sub> and θ<sub>⊥</sub> are defined as the angle within which the intensity is 50% of the peak value.

●Electrical and optical characteristic curves

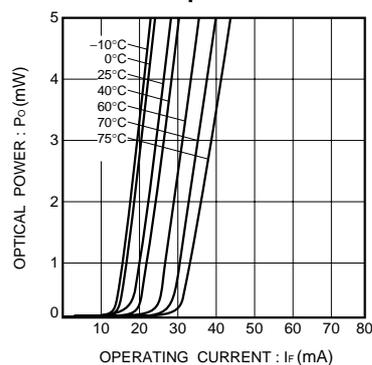


Fig.1 Optical output vs. operating current

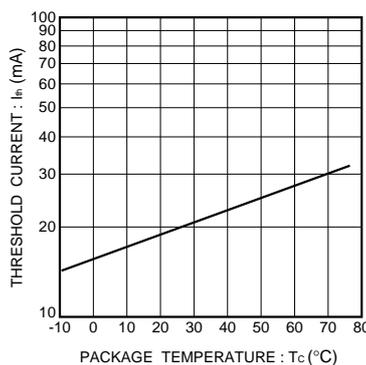


Fig.2 Dependence of threshold current on temperature

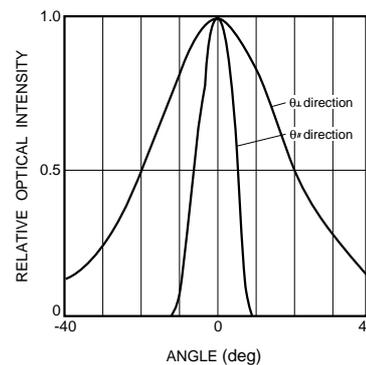


Fig.3 Far field pattern

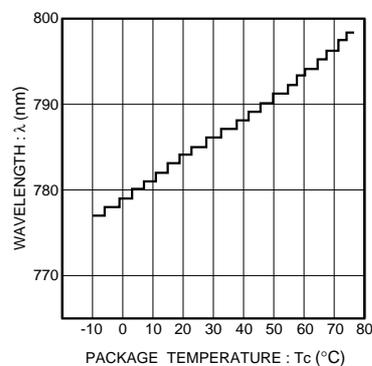


Fig.4 Dependence of wavelength on temperature

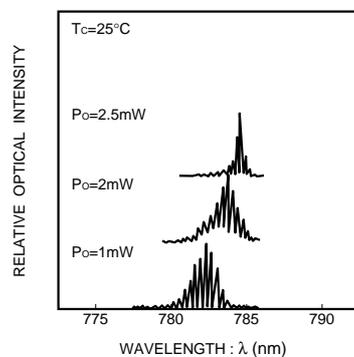


Fig.5 Dependence of emission spectrum on optical output

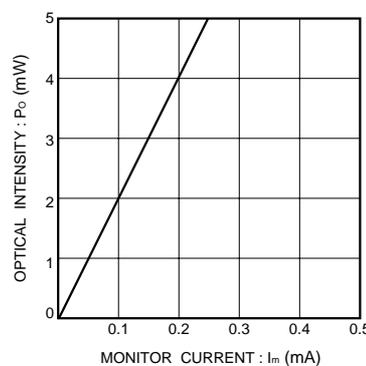


Fig.6 Monitor current vs. optical output

Laser diodes

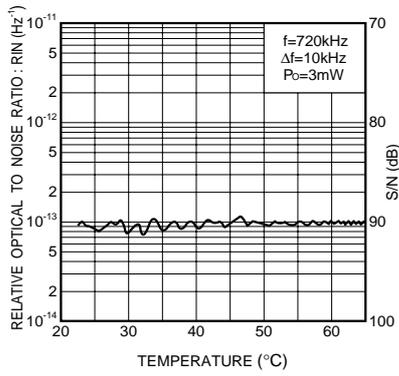


Fig.7 Temperature dependence of noise

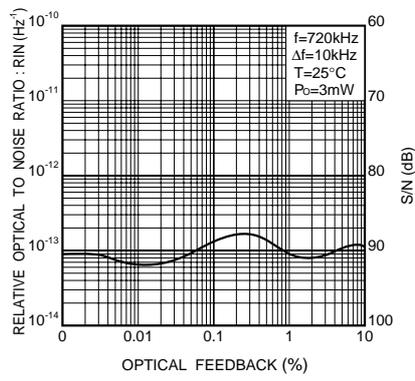


Fig.8 Dependence of noise on optical feedback