

# 780nm Low Power Lasers

## RLD78MRA1

A long-run product with market-proved high reliability. Matching to various needs.

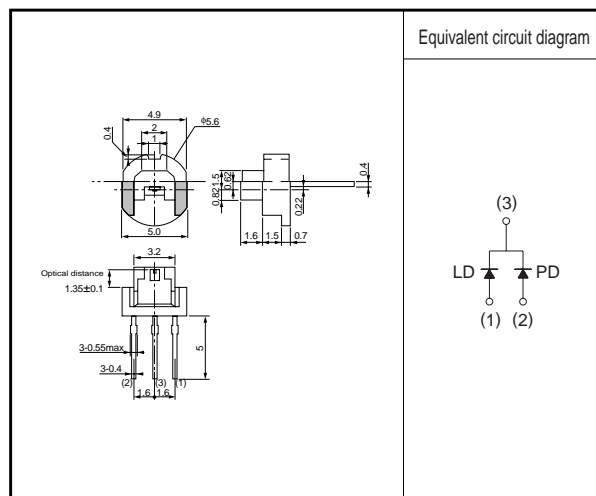
### ●Applications

CD-ROM  
CD player  
etc.

### ●Features

- 1) Optical power output : CW 4.5mW
- 2) Low noise
- 3) High precision  $\phi 5.6$  metal stem

### ●Dimensions (Unit : mm)



### ●Absolute maximum ratings (T<sub>c</sub>=25°C)

Parameter		Symbol	Limits	Unit
Output		P <sub>o</sub>	4.5	mW
Reverse voltage	Laser	V <sub>R</sub>	2	V
	Photodiode	V <sub>R</sub> (PIN)	30	V
Operating temperature		T <sub>opr</sub>	-10 to +70	°C
Storage temperature		T <sub>stg</sub>	-40 to +85	°C

### ●Electrical and optical characteristics (T<sub>c</sub>=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	2mW/ (I (3mW) - I (1mW))
Monitor current	I <sub>m</sub>	0.05	0.15	0.48	mA	P <sub>o</sub> =3mW, V <sub>R</sub> (PIN)=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	Δθ <sub>∥</sub>	-3	0	3	deg	
Perpendicular deviation angle	Δθ <sub>⊥</sub>	-3.6	0	3.6	deg	
Emission point accuracy	ΔX, ΔY, ΔZ	-100	0	100	μm	—
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, P <sub>o</sub> =3mW

Laser Diodes

●Electrical and optical characteristics curves

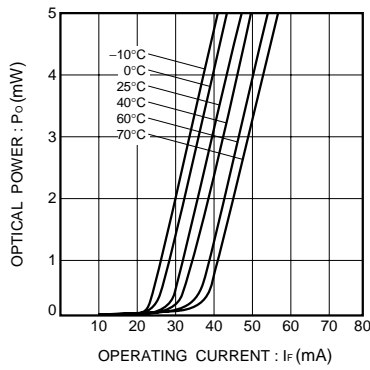


Fig.1 Optical output vs. operating current

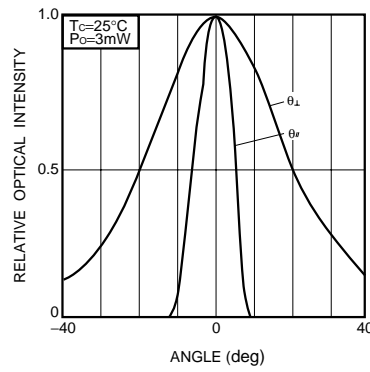


Fig.2 Far field pattern

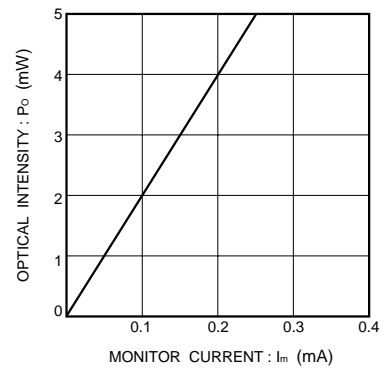


Fig.3 Monitor current vs. optical output

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