AlGaAs laser diodes

RLD-78MA

The RLD-78MA is world's first mass-produced laser diodes that is manufactured by molecular beam epitaxy. The signal-to-noise ratio is stable in comparison to conventional manufacturing techniques. This device is ideal for use in compact disc players.

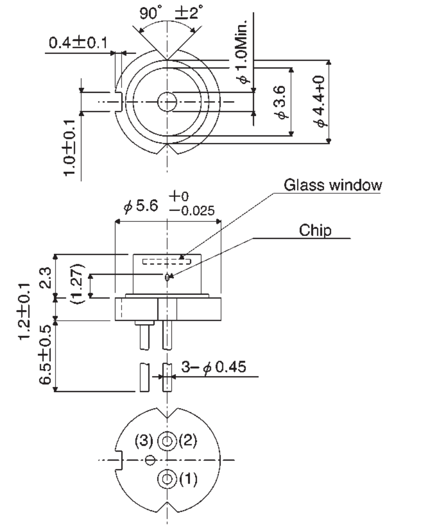
●Applications

Compact disc players

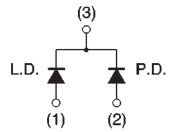
●Features

1) Signal-to-noise ratio guaranteed over entire operating temperature range.
2) Reduced facet reflection.
3) One-third the dispersion compared with conventional laser diodes.
4) High-precision, compact package.

●External dimensions (Units: mm)



M type



●Absolute maximum ratings (Tc = 25°C)

Parameter		Symbol	Limits	Unit
Output		Po	5	mW
Reverse voltage	Laser	V_R	2	V
	PIN photodiode	$V_{R (PIN)}$	30	V
Operating temperature		Topr	−10~+60	℃
Storage temperature		Tstg	−40~+85	℃

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	—	35	60	mA	—
Operating current	I_{op}	—	45	70	mA	Po=3mW
Operating voltage	V_{op}	—	1.9	2.3	V	Po=3mW
Differential efficiency	η	0.1	0.25	0.6	mW/mA	$\frac{2mW}{I(3mW)-I(1mW)}$
Monitor current	I_m	0.1	0.2	0.6	mA	Po=3mW, $V_{R(PIN)}$=15V
Parallel divergence angle	$\theta_{//}$*	8	11	15	deg	Po=3mW
Perpendicular divergence angle	$\theta_{\perp}$*	20	37	45	deg	
Parallel deviation angle	$\Delta\theta_{//}$	—	—	±2	deg	
Perpendicular deviation angle	$\Delta\theta_{\perp}$	—	—	±3	deg	
Emission point accuracy	ΔX ΔY ΔZ	—	—	±80	μm	—
Peak emission wavelength	λ	770	785	810	nm	Po=3mW
Signal-to-noise ratio	S / N	60	—	—	dB	f=720kHz, Δf=10kHz

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

●Electrical and optical characteristic curves

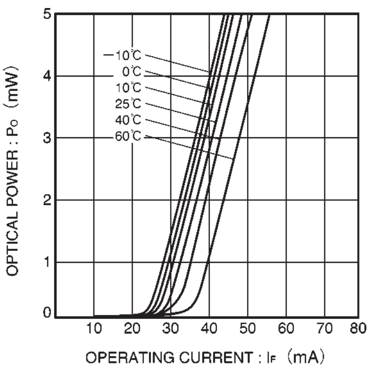


Fig. 1 Optical output vs. operating current

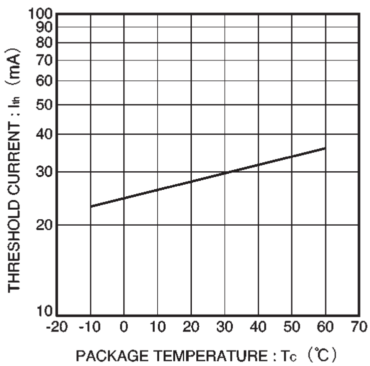


Fig. 2 Dependence of threshold current on temperature

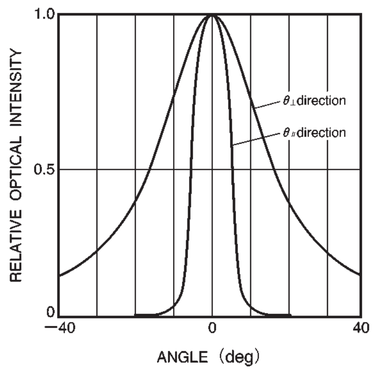


Fig. 3 Far field pattern

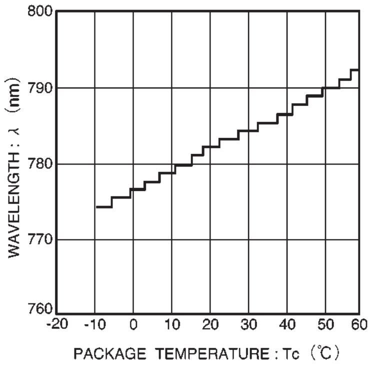


Fig. 4 Dependence of wavelength on temperature

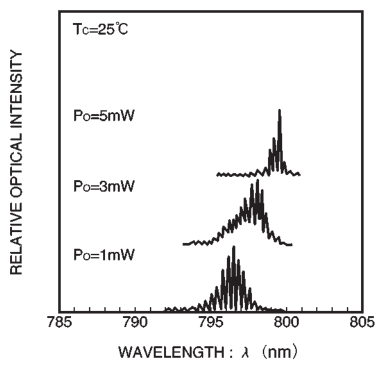


Fig. 5 Dependence of emission spectrum on optical output

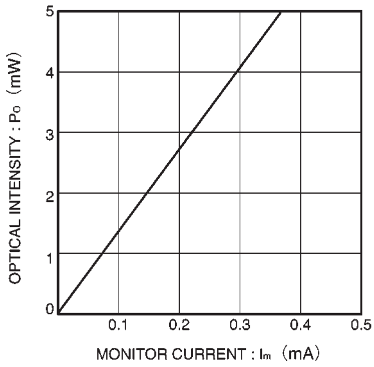


Fig. 6 Monitor current vs . optical output

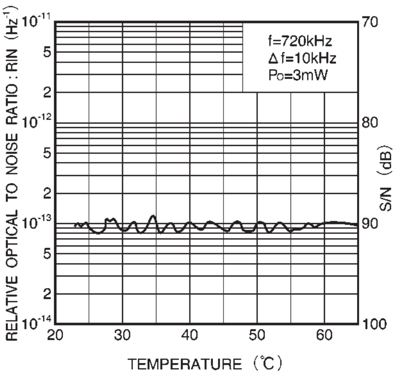


Fig. 7 Temperature dependence of noise

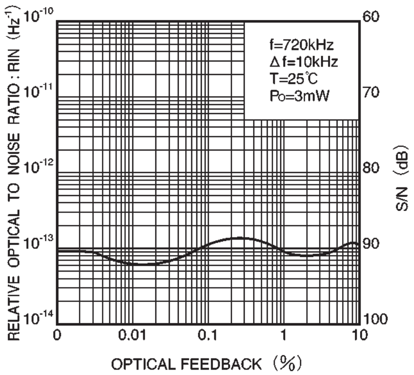


Fig. 8 Dependence of noise on optical feedback

LASER COMPONENTS

Distributor: Laser Components GmbH, Germany
Phone: ++49 (0)8142 28640, Fax: ++49 (0)8142 286411, e-mail: info@lasercomponents.com
www.lasercomponents.com