

RLD-78MA3 RLD-78PA3

AlGaAs double-hetero visible laser diodes

These laser diodes have a smaller operating current than the RLD-78MA and RLD-78PA laser diodes.

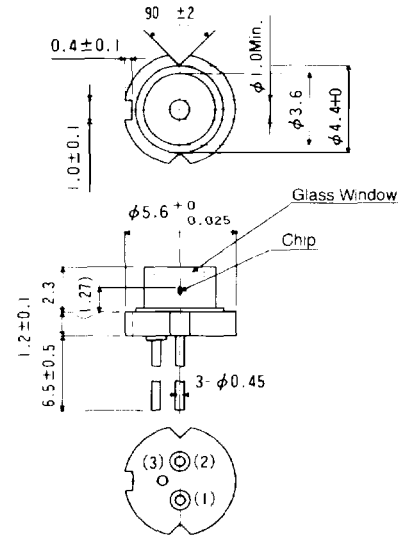
Features

- low operating current
- wavelength is 785 nm
- light beam dispersion angle suitable for compact disc players
- built in photo-diode for monitoring the laser diode
- very small, compact package; with close tolerances
- P type can be operated from single 5 V source

Applications

- portable compact disc players

Dimensions (Units : mm)



Selection guide

RLD-78MA3	Semi-standard
RLD-78PA3	Semi-standard

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Limits	Unit
Optical power		P_o	4	mW
Reverse voltage	Laser	V_R	2	V
	PIN photodiode	$V_{R(PIN)}$	30	V
Operating temperature range		T_{opr}	-10 ~ +60	$^\circ\text{C}$
Storage temperature range		T_{stg}	-40 ~ +85	$^\circ\text{C}$

Electrical-optical characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Threshold current	I_{th}		30	44	mA	
Operating current	I_{op}		40	50	mA	$P_o = 2.5 \text{ mW}$
Operating voltage	V_{op}		1.9	2.3	V	$P_o = 2.5 \text{ mW}$
Differential efficiency	η	0.1	0.3	0.6	mW/mA	$\frac{2 \text{ mW}}{I_{P3mW} - I_{P1mW}}$
Monitor current	I_m	0.1	0.2	0.6	mA	$P_o = 2.5 \text{ mW}, V_{R(PIN)} = 15 \text{ V}$
Beam divergence parallel	$\theta_{//}$	8	11	15	deg	$P_o = 2.5 \text{ mW}$
Beam divergence perpendicular	θ_{\perp}	20	37	45	deg	
Beam tolerance parallel	$\Delta\phi_{//}$			± 2	deg	
Beam tolerance perpendicular	$\Delta\phi_{\perp}$			± 3	deg	
Emission point accuracy	ΔX ΔY ΔZ			± 80	μm	
Wavelength	λ	770	785	810	nm	$P_o = 2.5 \text{ mW}$
Signal-to-noise ratio	S/N	60			dB	$f = 720 \text{ kHz}, \Delta f = 10 \text{ kHz}$

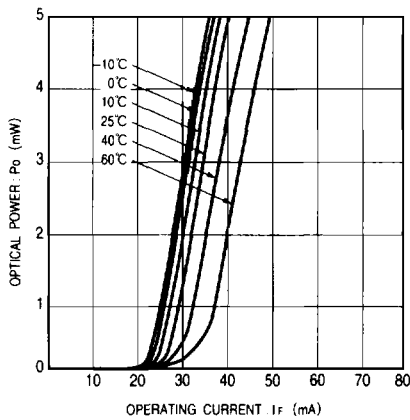


Figure 1

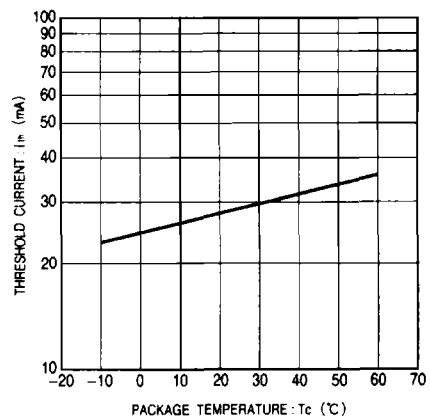


Figure 2

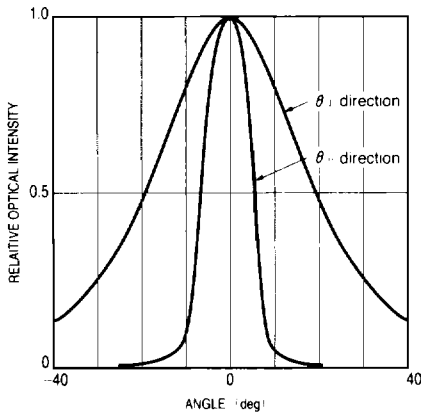


Figure 3

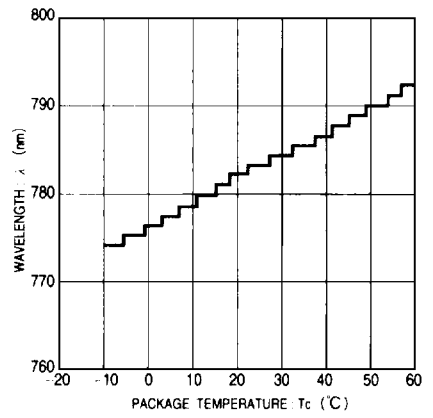


Figure 4

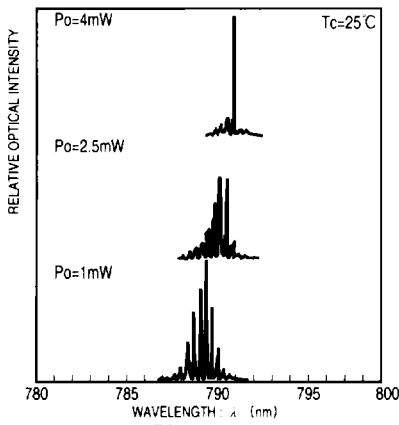


Figure 5

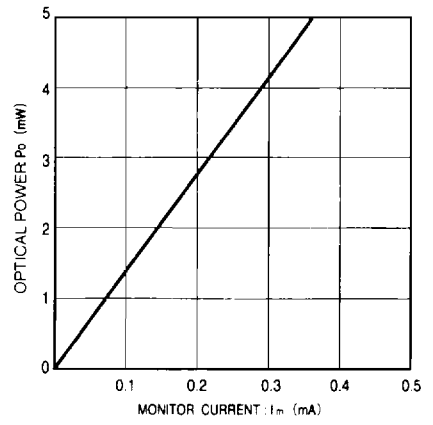


Figure 6

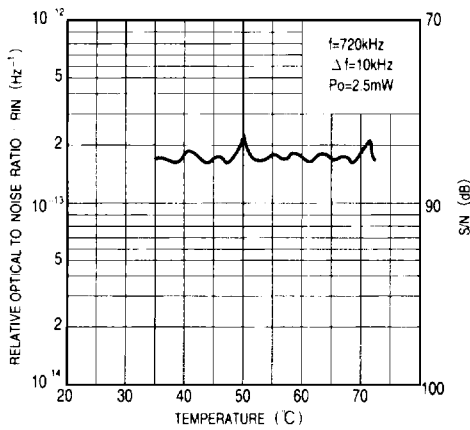


Figure 7

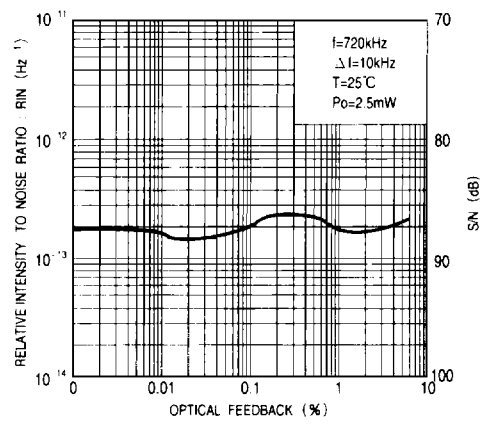


Figure 8