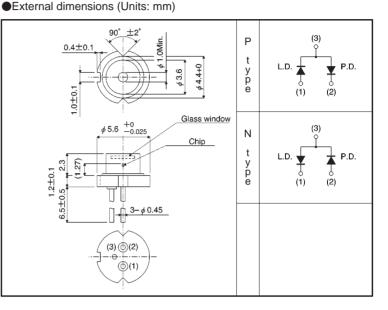
# AlGaAs laser diodes RLD-78PP-B/RLD-78NP-D

The RLD-78PP-B and RLD-78NP-D are the world's first mass-produced laser diodes those are manufactured by molecular beam epitaxy. The characteristics of these laser diodes are suitable for laser beam printers.

# Applications Laser beam printers

## Features

- 1) One-third dispersion compared with conventional laser diodes.
- 2) High-precision, compact package.
- 3) Low droop.
- Can be driven by single power supply.



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

Parameter		Symbol	Limits	Unit
Output		Po	5	mW
Reverse voltage	Laser	VR	2	V
	PIN photodiode	Vr (pin)	30	V
Operating temperature		Topr	$-10 \sim +60$	°C
Storage temperature		Tstg	-40~+85	°C



Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Threshold current	lth	15	25	45	mA	-	
Operating current	lop	25	45	65	mA	Po=3mW	
Operating voltage	Vop	_	1.9	2.3	V	Po=3mW	
Differential efficiency	η	0.1	0.2	0.3	mW/mA	2mW I(3mW)—I(1mW)	
Monitor current	lm	0.3	0.55	0.9	mA	Po=3mW	
Parallel divergence angle	θ // *	8	11	15	deg	Po=3mW	
Perpendicular divergence angle	$ heta  \lrcorner^*$	25	30	38	deg		
Parallel deviation angle	Δ φ //	_	_	±2	deg		
Perpendicular deviation angle	$\Delta \phi \perp$	_	_	±з	deg		
Emission point accuracy	ΔX ΔY ΔZ			±80	μm	_	
Peak emission wavelength	λ	770	785	795	nm	Po=3mW	
Droop	ΔP	_	5	10	%	Po=3mW	

•Electrical and optical characteristics (Tc =  $25^{\circ}$ C)

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

### Electrical and optical characteristic curves

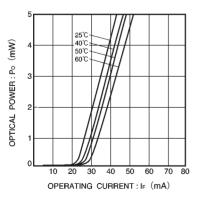


Fig. 1 Optical output vs. operating current

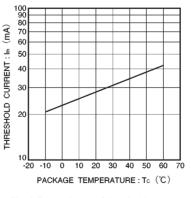


Fig. 2 Dependence of threshold current on temperature

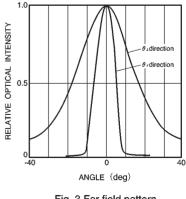


Fig. 3 Far field pattern



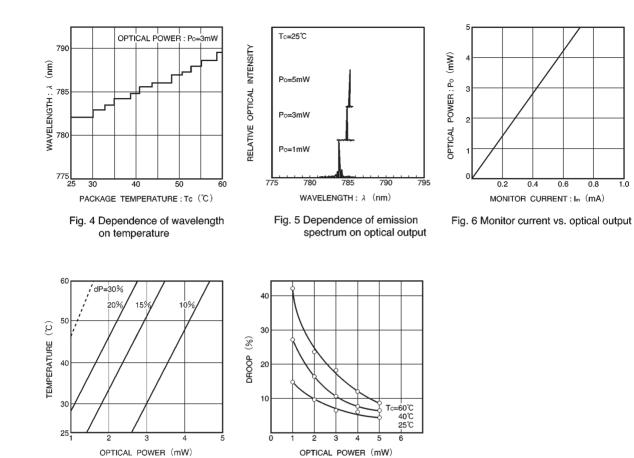
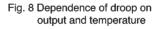


Fig. 7 Temperature vs. output guidelines for various droop percentages



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