AlGaAs laser diode

RLD78PZW4

The RLD78PZW4 is infrared laser diode high power output type (pulse 230mW). This is the best for optical disk drive use, such as CD-R / RW.

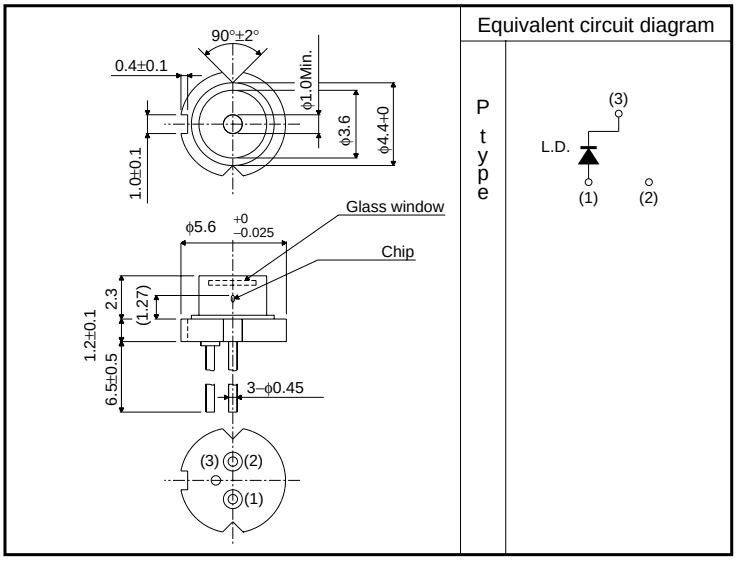
●Applications

Max. ×52 speed CD-R / RW drives.

●Features

1) Absolute maximum optical power output : pulse 230mW
2) Wave length : Typ. 784nm
3) ϕ5.6mm small packages

●External dimensions (Unit : mm)



●Absolute maximum ratings (Tc=25°C)

Parameter		Symbol	Limits	Unit
Output		P_O	Pulsed 230 Pulse condition : pulse 70nsec, Duty50%	mW
Reverse voltage	Raser	V_R	2	V
	PIN photodiode	$V_{R(PIN)}$	–	–
Operating temperature		Topr	−10 to +75 (Pulsed)	°C
Storage temperature		Tstg	−40 to +85	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	–	30	50	mA	–
Operating current	I_{op}	–	133	165	mA	
Operating voltage	V_{op}	–	2.1	2.5	V	
Differential efficiency	η	0.7	0.9	1.4	mW / mA	
Parallel divergence angle	$\theta_{//}$*	8	9	10	deg	P_O=90mW
Perpendicular divergence angle	$\theta_{\perp}$*	15	17	19	deg	
Parallel deviation angle	$\Delta\phi_{//}$	–2	0	+2	deg	
Perpendicular deviation angle	$\Delta\phi_{\perp}$	–3	0	+3	deg	
Emission point accuracy	ΔX ΔY ΔZ	–80	0	+80	μm	–
Peak emission wavelength	λ	779	784	789	nm	P_O=90mW
Astigmatism	$\Delta\ell$	–	–	6	μm	NA=0.15, P_O=90mW

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

●Electrical and optical characteristics curves

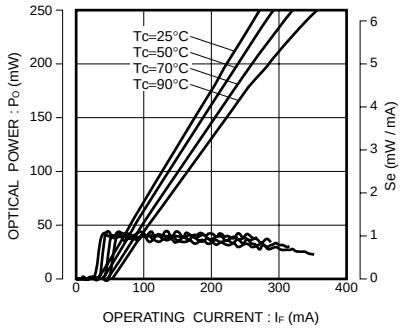


Fig.1 Optical output vs. operating current

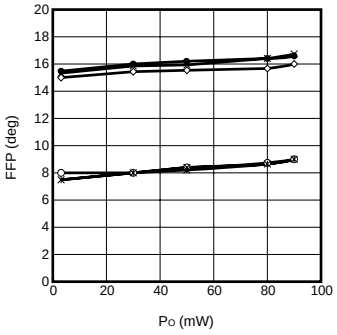


Fig.2 PO vs. FFP

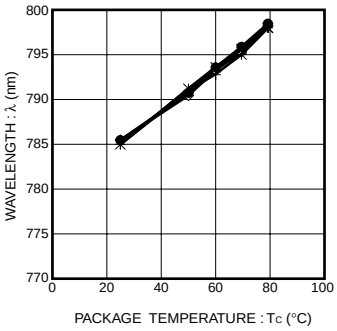


Fig.3 Dependence of wavelength on temperature

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