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Laser diodes

Red laser diodes for digital video discs (DVD)

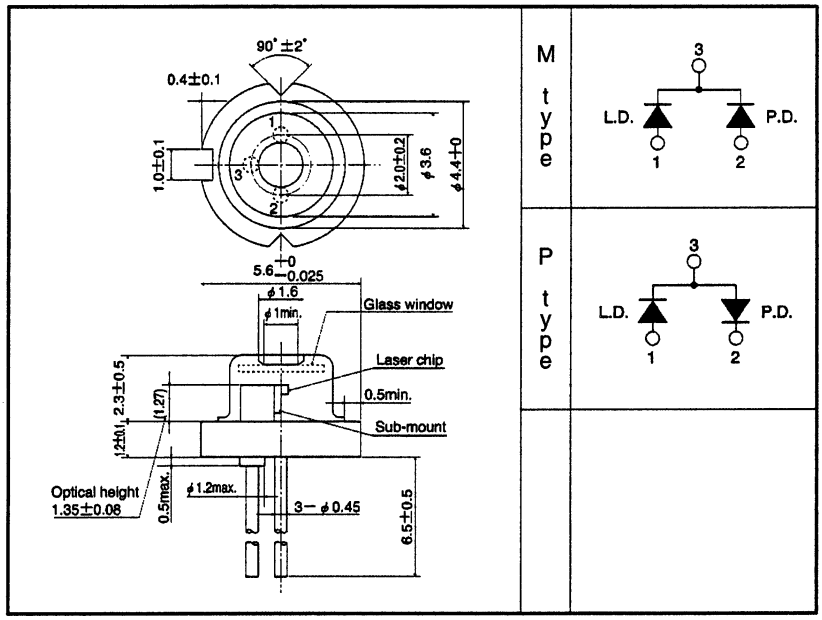
RLD-65MC / RLD-65PC

The RLD-65MC and RLD-65PC are red-colored laser diodes developed for use with DVDs.
With the introduction of a strained multi quantum well in the active layer, a low threshold current is achieved. Also, with a high operating temperature range that reaches up to 70°C, this laser diode can be used with DVD-ROM.

●Applications
DVD-movies
DVD-ROM
Laser pointer
Bar code readers

●Features
1) Low threshold current from the introduction of a strained multi quantum well in the active layer.
2) Guaranteed operation at the high temperature of 70°C.

●External dimensions (Units: mm)



●Absolute maximum ratings (Tc = 25°C)

Parameter		Symbol	Limits	Unit
Output		P_O	7	mW
Reverse voltage	Laser	V_R	2	V
	PIN photodiode	$V_{R(PIN)}$	30	V
Operating temperature		Topr	−10～+70	℃
Storage temperature		Tstg	−40～+85	℃

Laser diodes — RLD-65MC/RLD-65PC

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	—	40	70	mA	—
Operating current	I_{op}	—	50	80	mA	Po=5mW
Operating voltage	V_{op}	—	2.3	2.8	V	Po=5mW
Differential efficiency	η	0.2	0.4	0.8	mW / mA	$\frac{2mW}{I(5mW)-I(3mW)}$
Monitor current	I_m	0.10	0.20	0.50	mA	Po=5mW Vrpin=15V
Parallel divergence angle	$\theta //$ *	6.5	8	10	deg	Po=5mW
Perpendicular divergence angle	$\theta \perp$*	20	27	35	deg	
Parallel deviation angle	$\Delta \theta //$	—	—	±2	deg	
Perpendicular deviation angle	$\Delta \theta \perp$	—	—	±3	deg	
Emission point accuracy	ΔX ΔY ΔZ	—	—	±80	μm	Po=5mW
Peak emission wavelength	λ	645	655	665	nm	Po=5mW
Level aberration	$\Delta \Phi$	—	—	λ / 30	rms	NA=0.15 Po=5mW

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

●Electrical and optical curves

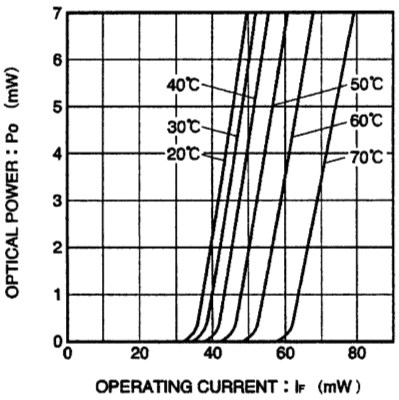


Fig.1 Optical output vs. operating current

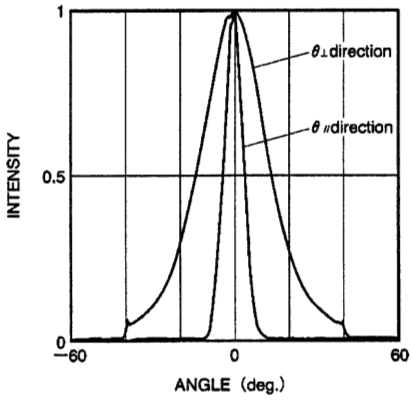


Fig.2 Far field pattern

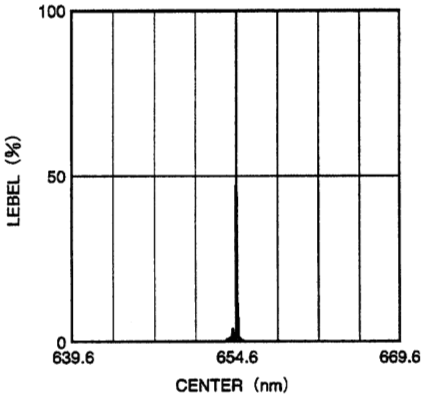


Fig.3 Emission spectrum

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IF / Version 4 / Mai 2000 / ROHM-DB / RLD-65MC-65PC.p65