

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.

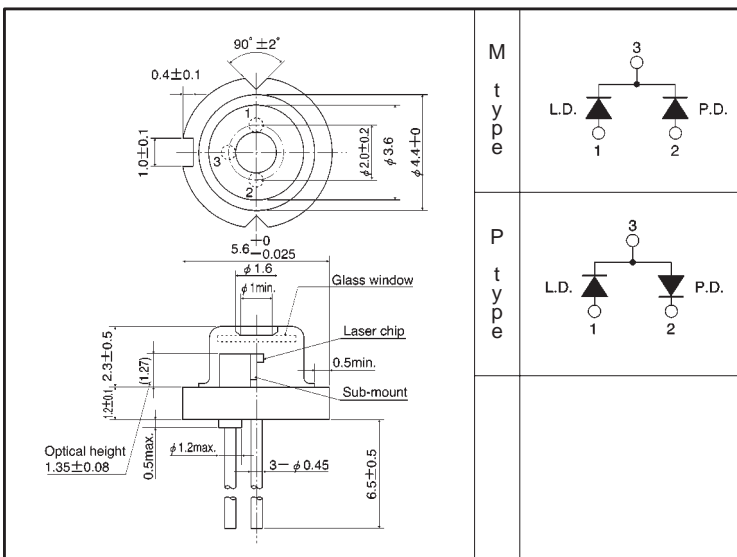
●Applications

- 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 ($T_c = 25^\circ\text{C}$)

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		T_{opr}	-10~+70	°C
Storage temperature		T_{stg}	-40~+85	°C

●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	$P_o=5mW$
Operating voltage	V_{op}	—	2.3	2.8	V	$P_o=5mW$
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	$P_o=5mW$ $V_{rpin}=15V$
Parallel divergence angle	$\theta_{//}^*$	6.5	8	10	deg	$P_o=5mW$
Perpendicular divergence angle	θ_{\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	$P_o=5mW$
Peak emission wavelength	λ	645	655	665	nm	$P_o=5mW$
Level aberration	$\Delta\phi$	—	—	$\lambda / 30$	rms	$NA=0.15$ $P_o=5mW$

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

●Electrical and optical curves

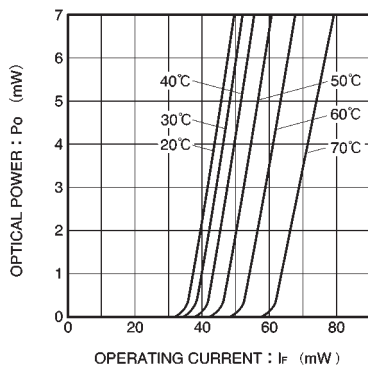


Fig.1 Optical output vs. operating current

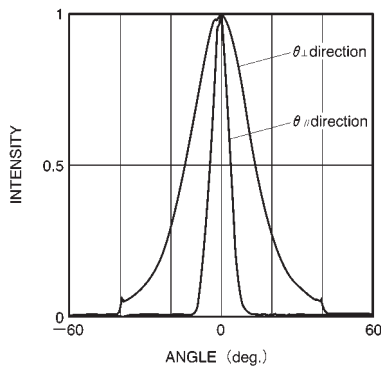


Fig.2 Far field pattern

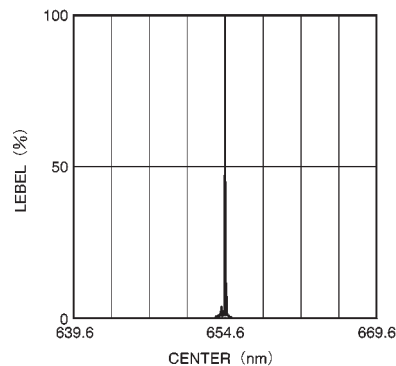


Fig.3 Emission spectrum