

# 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.

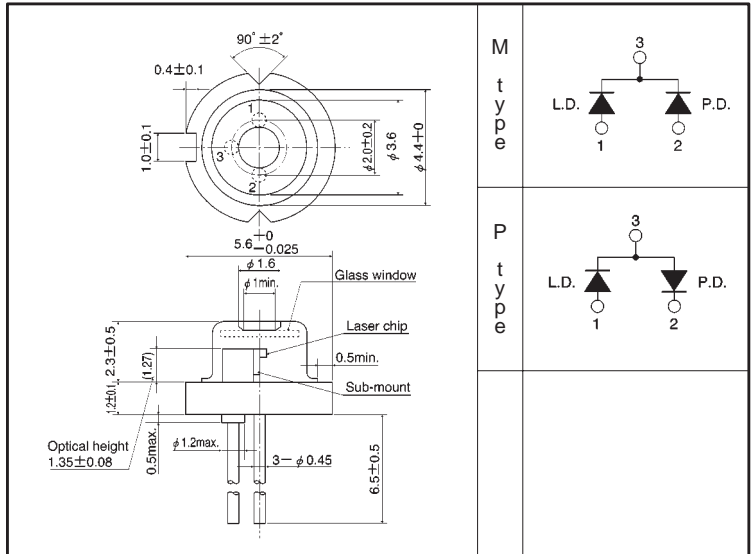
●Applications

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 <sub>O</sub>	7	mW
Reverse voltage	Laser	V <sub>R</sub>	2	V
	PIN photodiode	V <sub>R</sub> (PIN)	30	V
Operating temperature		T <sub>opr</sub>	-10~+70	°C
Storage temperature		T <sub>stg</sub>	-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	$\eta$	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	$\theta_{\perp}^*$	20	27	35	deg	
Parallel deviation angle	$\Delta\theta_{//}$	—	—	$\pm 2$	deg	
Perpendicular deviation angle	$\Delta\theta_{\perp}$	—	—	$\pm 3$	deg	
Emission point accuracy	$\Delta X$ $\Delta Y$ $\Delta Z$	—	—	$\pm 80$	$\mu m$	$P_o=5mW$
Peak emission wavelength	$\lambda$	645	655	665	nm	$P_o=5mW$
Level aberration	$\Delta\phi$	—	—	$\lambda / 30$	rms	$NA=0.15$ $P_o=5mW$

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

●Electrical and optical curves

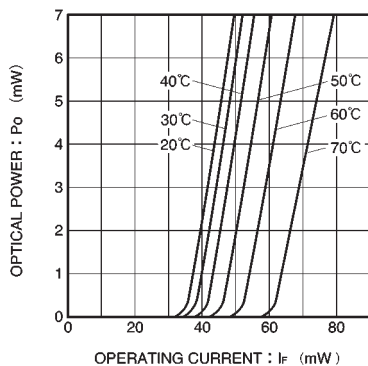


Fig.1 Optical output vs. operating current

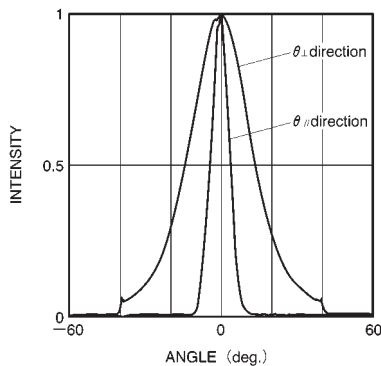


Fig.2 Far field pattern

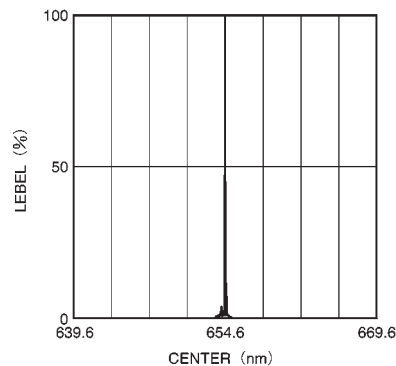


Fig.3 Emission spectrum