DVD-ROM red laser diode

For DVD-ROM, DVD player, power saving type that made high temperature characteristics more improved.

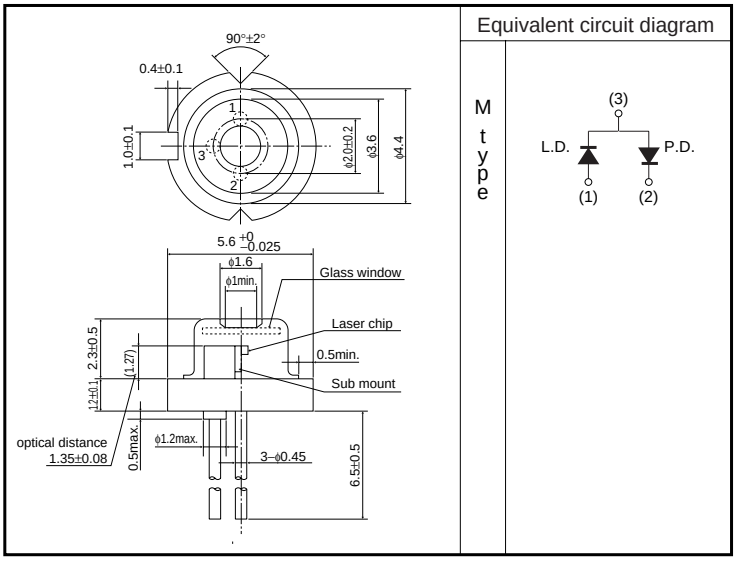
●Applications

DVD-ROM
DVD player
Barcode readers
Sensors

●Features

1) Optimization of a strained multi quantum well realizes the reduction in threshold current, and the good temperature characteristic.
2) Low threshold current :45 mA (T_C=25°C)
3) Low noise is realized by a high frequency modulation element.

●External dimensions (Unit : mm)



●Absolute maximum ratings (Tc=25°C)

Parameter		Symbol	Limits	Unit
Output		P_O	100	mW
Reverse voltage	Raser	V_R	1.5	V
	PIN photodiode	$V_{R(PD)}$	20	V
Operating temperature		Topr	−10 to +70	°C
Storage temperature		Tstg	−40 to +85	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	–	45	80	mA	–
Operating current	I_{op}	–	130	170	mA	P_O=90mW
Operating voltage	V_{op}	–	2.5	3.0	V	P_O=90mW
Differential efficiency	η	0.75	0.96	1.15	mW/mA	–
Monitor current	I_m	0.2	0.4	0.8	mA	P_O=90mW
Parallel divergence angle	$\theta_{//}$*	7	8	10	deg	P_O=90mW
Perpendicular divergence angle	$\theta_{\perp}$*	20	27	35	deg	P_O=90mW
Parallel deviation angle	$\Delta\phi_{//}$	−2	0	+2	deg	P_O=90mW
Perpendicular deviation angle	$\Delta\phi_{\perp}$	−2	0	+2	deg	P_O=90mW
Emission point accuracy	ΔX ΔY ΔZ	−1.5	0	+1.5	μm	–
Peak emission wavelength	λ	650	655	660	nm	P_O=90mW
Astigmatism	$\Delta\ell$	–	–	10	μm	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

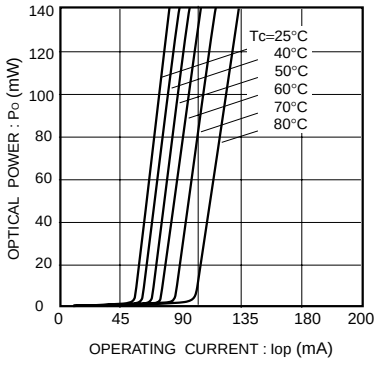


Fig.1 Optical output vs. operating current

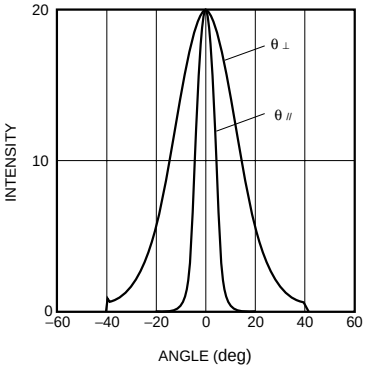


Fig.2 Far field pattern

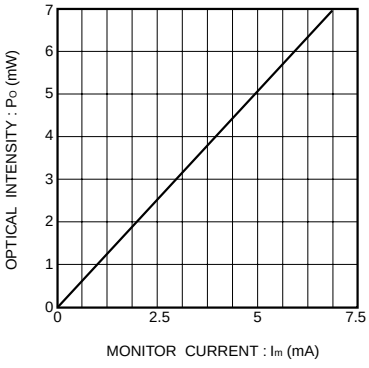


Fig.3 Monitor current vs. optical output