

GH06510B2A

Red Laser Diode for DVD-ROM Drive(654nm-10mW)

■ Features

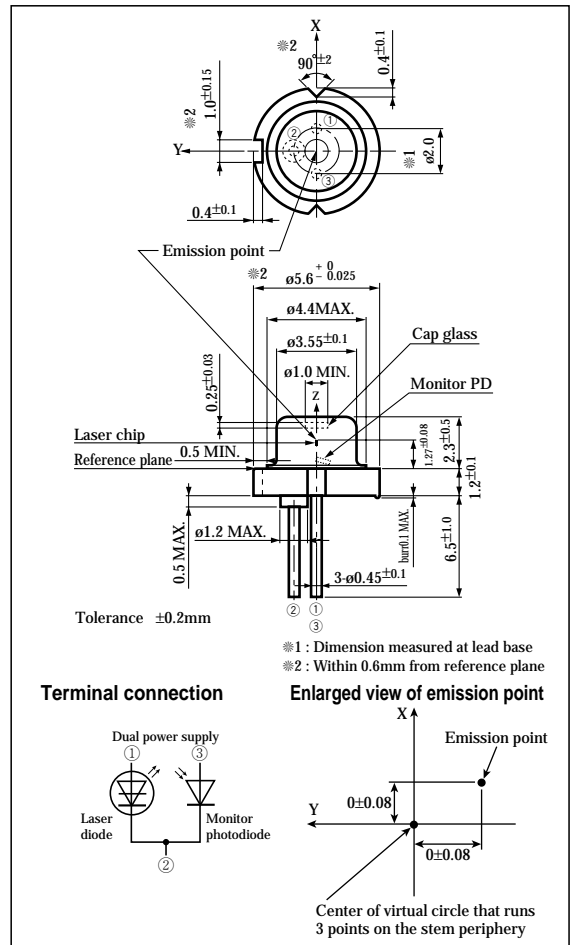
- (1) Maximum optical power output : 10mW CW
- (2) Wavelength : TYP. 654nm
- (3) Low current drive type (Iop : 40mA)
- (4) $\phi 5.6\text{mm}$ package

■ Applications

- (1) DVD-ROM drives
- (2) DVD video drives

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_c=25°C^{※1})

Parameter	Symbol	Rating	Unit
Optical power output	P _O	10	mW
Reverse voltage	Laser	V _{rl}	2
	Monitor photodiode	V _{rd}	30
※1 Operating temperature	T _{op(c)}	-10 to +70	°C
Storage temperature	T _{stg}	-40 to +85	°C
※2 Soldering temperature	T _{sld}	260	°C

※1 Case temperature

※2 At the position of 1.6mm or more from the lead base (5s)

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■ Electro-optical Characteristics^{*1}

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Threshold current	I _{th}	-	-	30	45	mA	
Operating current	I _{op}	P _o =7mW	-	40	55	mA	
Operating voltage	V _{op}		-	2.2	2.5	V	
Wavelength	λ _p		640	654	660	nm	
Half intensity angle	^{*2*} Parallel		θ//	7	8.5	10	°
	^{*2*} Perpendicular		θ⊥	24	29	33	°
^{*4} Ripple	R _i		-	-	±20	%	
Misalignment angle	^{*3} Parallel		Δθ//	-	-	±2	°
	^{*3} Perpendicular		Δθ⊥	-	-	±3	°
Differential efficiency	η _d		$\frac{5\text{mW}}{I(7\text{mW})-I(2\text{mW})}$	0.38	0.7	1.05	mW/mA
Interference pattern intensity	α		P _o =7mW	-	-	1	-

^{*1} Initial value, CW (Continuous Wave) drive

^{*2} Angle at 50% peak intensity (full-width at half-maximum)

^{*3} Parallel to junction plane (X-Z plane), Perpendicular to the junction plane (Y-Z plane)

^{*4} R_i=ΔP/P ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

■ Electrical Characteristics of Photodiode

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output current	I _m	P _o =7mW, V _{rd} =5V	0.08	0.2	0.4	mA
Dark current	I _D	V _{rd} =5V	-	-	150	nA
Terminal capacitance	C _t	V _{rd} =5V, f=1MHz	-	3.5	-	pF

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