

GH06550B2B

High Power Red Laser Diode for X2 Speed DVD Drive (656nm-50mW)

Features

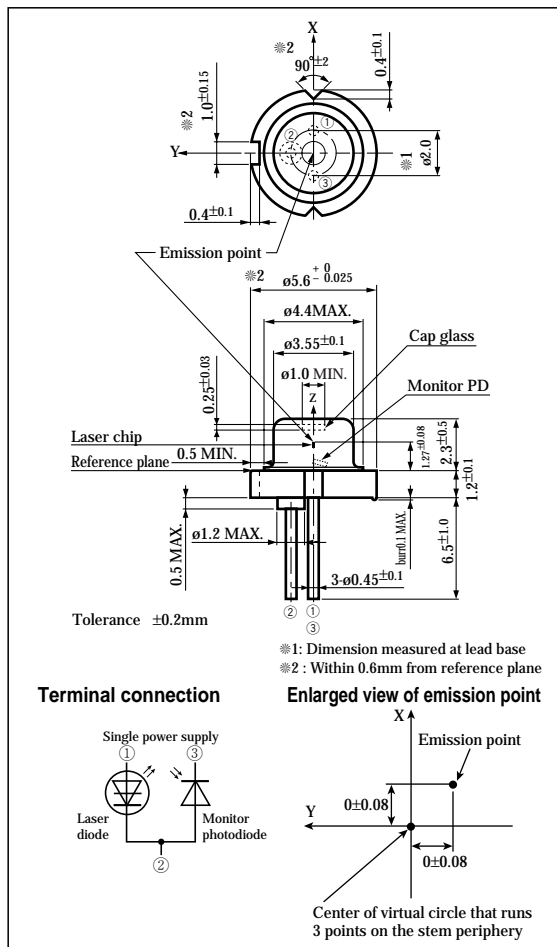
- (1) X2 speed DVD-R/+R/-RW/+RW/RAM drives
- (2) High power output (pulse MAX. 70mW)
- (3) Wavelength : TYP. 656nm
- (4) Operating temperature : MAX. 70°C
- (5) ϕ 5.6mm package

Applications

- (1) DVD-R/RW drives
- (2) DVD-RAM drives

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

(T_c=25°C^{*1})

Parameter	Symbol	Rating	Unit
*3 Optical power output	P _O	50	mW
*2 Optical power output (pulse)	P _p	70	mW
Reverse voltage	Laser	V _{rl}	2 V
	Monitor photodiode	V _{rd}	30 V
*1 Operating temperature	*3 CW	T _{op(c)}	-5 to +65 °C
	*2 Pulse	T _{opp(c)}	-5 to +70 °C
Storage temperature	T _{stg}	-40 to +85	°C
*4 Soldering temperature	T _{slid}	300	°C

*1 Case temperature

*3 CW (Continuous Wave) drive

*2 Pulse width : 0.3 μ s, Duty : 50%

*4 At the position of 1.6mm or more from the lead base (3s)

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■ Electro-optical Characteristics^{*1}

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Threshold current	I _{th}	-	-	35	55	mA	
Operating current	I _{op}	P _o =45mW	-	80	100	mA	
Operating voltage	V _{op}		-	2.6	2.95	V	
Wavelength	λ _p		650	656	660	nm	
Half intensity angle	^{*2*} Parallel		θ//	6	8	10	°
	^{*2*} Perpendicular		θ⊥	19	22	25	°
^{*4} Ripple	R _i		-20	-	+20	%	
Misalignment angle	^{*3} Parallel		Δθ//	-2	-	+2	°
	^{*3} Perpendicular		Δθ⊥	-3	-	+3	°
Differential efficiency	η _d		$\frac{35mW}{I(35mW)-I(10mW)}$	0.75	1.0	-	mW/mA
Interference pattern intensity	α		P _o =45mW	-	-	1	-
^{*5} Kink	K-LI	P1=14mW, P2=42mW, P3=70mW	-10	-	+10	%	
Polarization angle	ω	P _o =3mW, NA=0.13	-20	-	+20	°	
Polarization ratio	P _i		20	-	-	-	

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

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

^{*3} Parallel to the 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

^{*5} Pulse drive (Pulse width : 0.3μs, Duty : 50%)

■ Electrical Characteristics of Photodiode

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output current	I _m	P _o =45mW, V _{rd} =5V	0.01	-	0.2	mA
Dark current	I _D	V _{rd} =5V	-	-	150	nA
Terminal capacitance	C _t	V _{rd} =5V, f=1MHz	-	3.5	-	pF

• Please refer to the chapter "Handling Precautions"

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