

# GH06560B2C

(Under development)

## High Power Red Laser Diode for X4 Speed DVD Drive (658nm-pulse 100mW)

### ■ Features

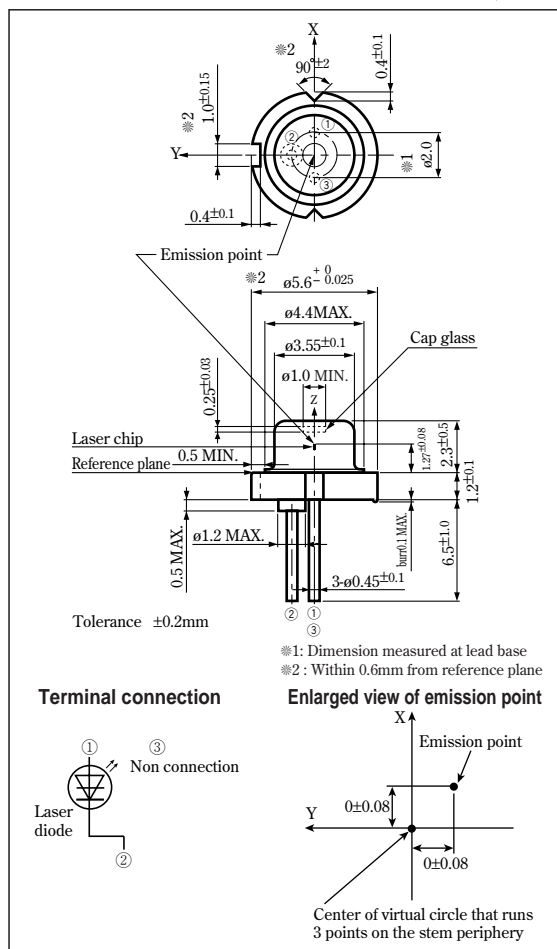
- (1) X4 speed DVD-R/+R/-RW/+RW/RAM drives
- (2) High power output (pulse MAX. 100mW)
- (3) Low aspect ratio type (Aspect ratio : 1.7)  
The shaping prism of a pick-up becomes unnecessary and the composition of optical parts can be simplified.
- (4) To set MAX. 662 nm wavelength to be compatible with pigment media such as DVD-R/+R
- (5) Operating temperature : MAX. 70°C
- (6)  $\phi$ 5.6mm package

### ■ Applications

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

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(T<sub>c</sub>=25°C ※1)

Parameter	Symbol	Rating	Unit
※3 Optical power output	P <sub>O</sub>	60	mW
※2 Optical power output (pulse)	P <sub>p</sub>	100	mW
Reverse voltage	Laser V <sub>ri</sub>	2	V
※1 Operating temperature	※3 CW	T <sub>op(c)</sub>	-10 to +70 °C
	※2 Pulse	T <sub>op(c)</sub>	-10 to +70 °C
Storage temperature	T <sub>stg</sub>	-40 to +85	°C
※4 Soldering temperature	T <sub>slid</sub>	300	°C

※1 Case temperature

※2 Pulse width : 0.3μs, Duty : 50%

※3 CW (Continuous Wave) drive

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

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## ■ Electro-optical Characteristics<sup>\*1</sup>

(T<sub>c</sub>=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Threshold current	I <sub>th</sub>	-	-	40	55	mA	
Operating current	I <sub>op</sub>	P <sub>o</sub> =50mW	-	85	105	mA	
Operating voltage	V <sub>op</sub>		-	2.6	3	V	
Wavelength	λ <sub>p</sub>		652	658	662	nm	
Half intensity angle	<sup>*2*</sup> Parallel		θ//	7.5	10	12	°
	<sup>*2*</sup> Perpendicular		θ⊥	15	17	19	°
<sup>*4</sup> Ripple	R <sub>i</sub>		-20	-	+20	%	
Misalignment angle	<sup>*3</sup> Parallel		Δθ//	-2	-	+2	°
	<sup>*3</sup> Perpendicular		Δθ⊥	-2	-	+2	°
Differential efficiency	η <sub>d</sub>		$\frac{40mW}{I(50mW)-I(10mW)}$	0.8	1.0	-	mW/mA
Interference pattern intensity	α		P <sub>o</sub> =50mW	-	-	1	-
<sup>*5</sup> Kink	K-LI	P1=20mW, P2=60mW, P3=100mW	-5	-	+5	%	
Polarization angle	ω	P <sub>o</sub> =3mW, NA=0.13	-20	-	+20	°	
Polarization ratio	P <sub>i</sub>		20	-	-	-	
Differential resistance	R <sub>d</sub>	$\frac{V(50mW)-V(10mW)}{I(50mW)-I(10mW)}$	-	-	10	Ω	

<sup>\*1</sup> Initial value, CW (Continuous Wave) drive

<sup>\*2</sup> Angle at 50% peak intensity (full-width at half-maximum)

<sup>\*3</sup> Parallel to the junction plane (X-Z plane)

Perpendicular to the junction plane (Y-Z plane)

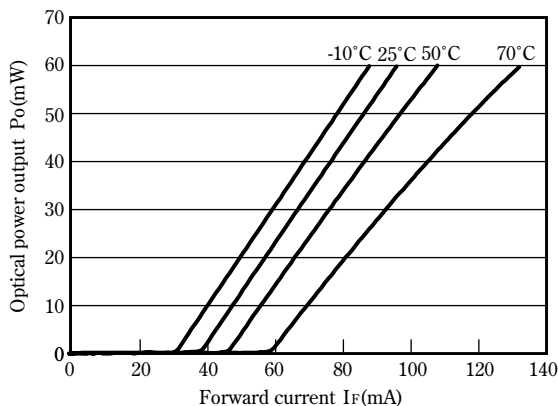
<sup>\*4</sup> R<sub>i</sub>=ΔP/P ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

<sup>\*5</sup> Pulse drive (Pulse width : 0.3μs, Duty : 50%)

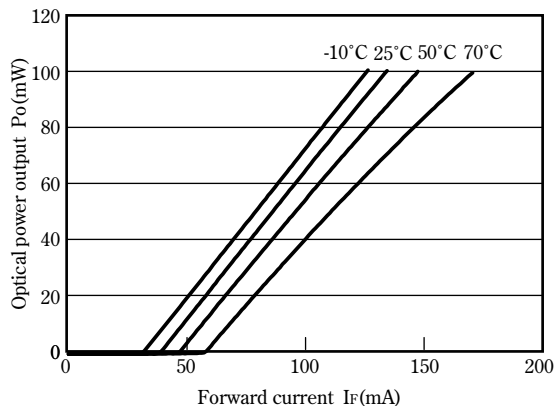
• Please refer to the chapter "Handling Precautions"

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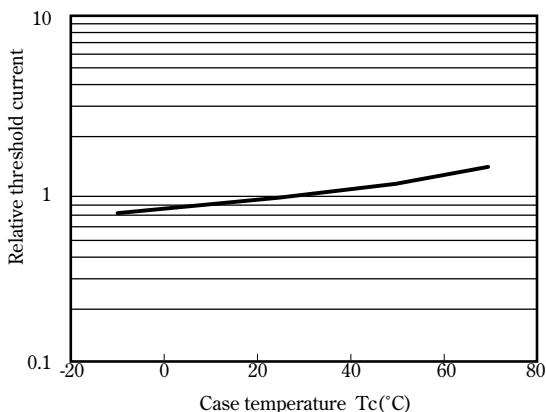
Optical power output - Forward current [CW]



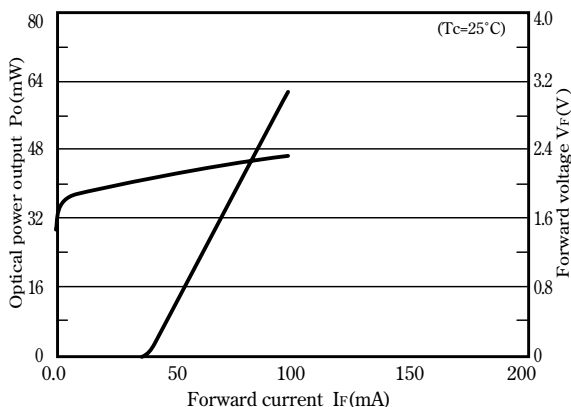
Optical power output - Forward current [Pulse]



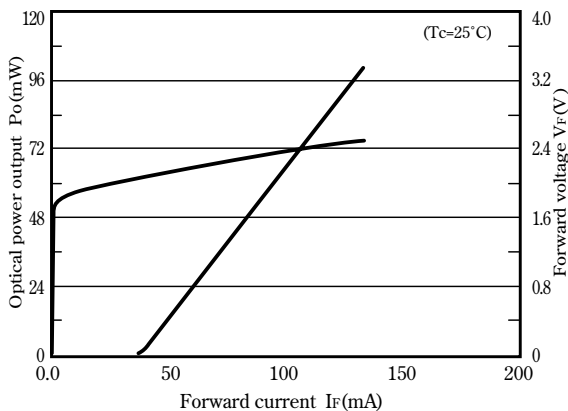
Case temperature dependence of threshold current [CW]



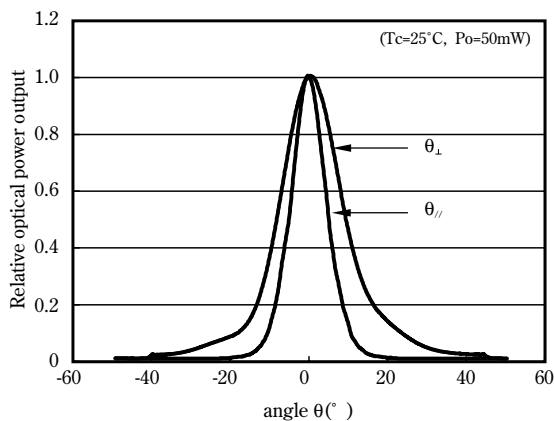
Forward voltage - Forward current [CW]  
Optical power output - Forward current [CW]



Forward voltage - Forward current [Pulse]  
Optical power output - Forward current [Pulse]

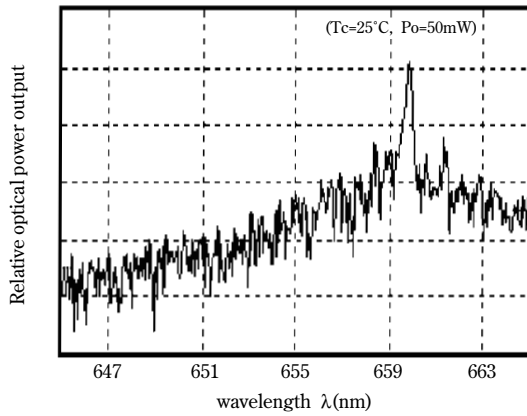


Far field pattern (FFP)

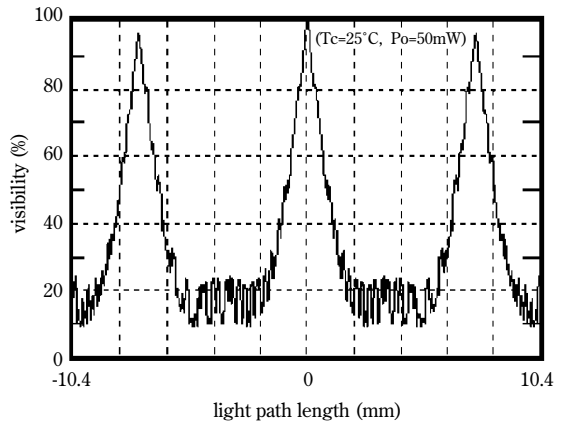


Note) Characteristics shown in diagrams are typical values. (not assurance value)

Lasing spectrum



Visibility



Note) Characteristics shown in diagrams are typical values. (not assurance value)

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