

GH06560B2C

(Under development)

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

■ Features

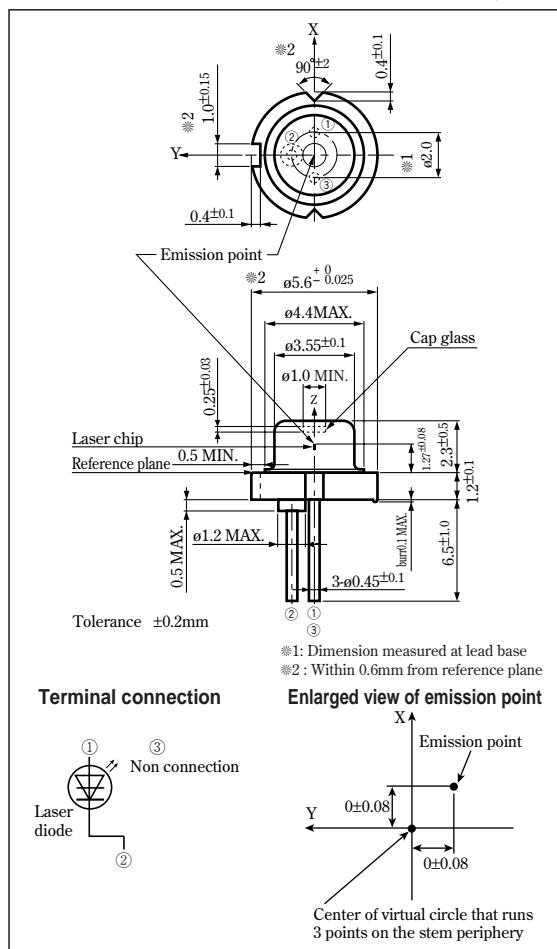
- (1) X4 speed DVD-R/+R/-RW/+RW/RAM drives
- (2) High power output (pulse MAX. 100mW)
- (3) Low aspect ratio type (Aspect ratio : 1.7)
The shaping prism of a pick-up becomes unnecessary and the composition of optical parts can be simplified.
- (4) To set MAX. 662 nm wavelength to be compatible with pigment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

■ Applications

- (1) DVD-R/+R drives
- (2) DVD-RW/+RW drives
- (3) 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	60	mW
※2 Optical power output (pulse)	P _p	100	mW
Reverse voltage	Laser V _{ri}	2	V
※1 Operating temperature	※3 CW	T _{op(c)}	-10 to +70 °C
	※2 Pulse	T _{op(c)}	-10 to +70 °C
Storage temperature	T _{stg}	-40 to +85	°C
※4 Soldering temperature	T _{slid}	300	°C

- ※1 Case temperature
 ※2 Pulse width : 0.3 μ s, 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^{*1}

(T_c=25°C)

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

^{*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)

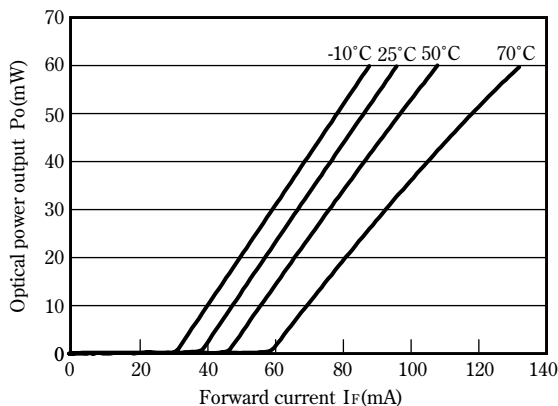
^{*4} R_i=ΔP/P ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

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

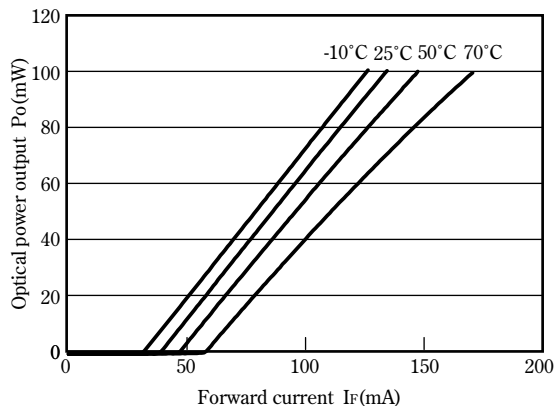
• Please refer to the chapter "Handling Precautions"

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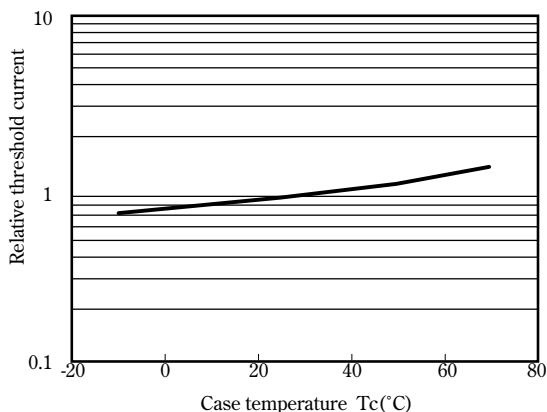
Optical power output - Forward current [CW]



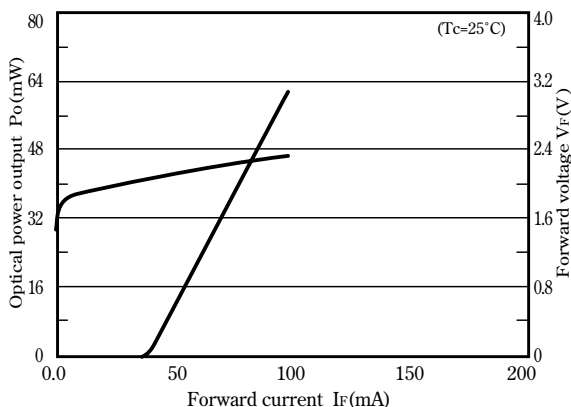
Optical power output - Forward current [Pulse]



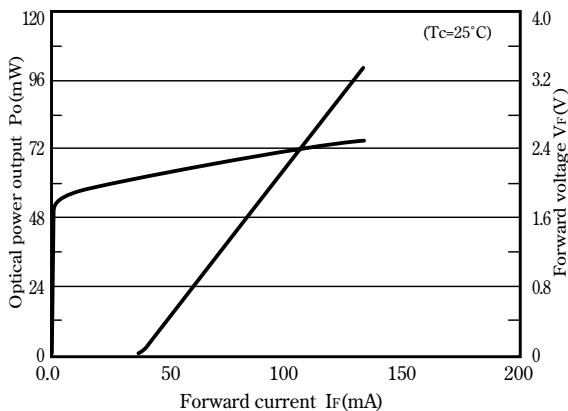
Case temperature dependence of threshold current [CW]



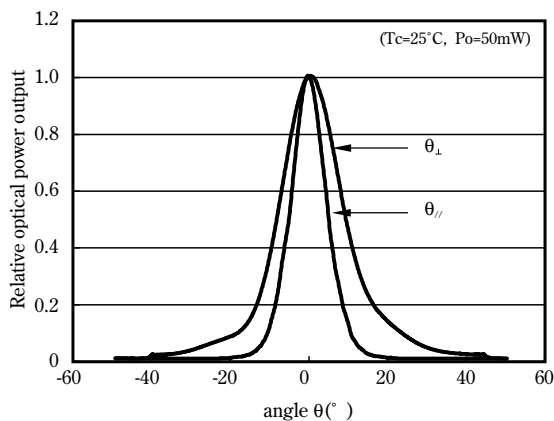
Forward voltage - Forward current [CW]
Optical power output - Forward current [CW]



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

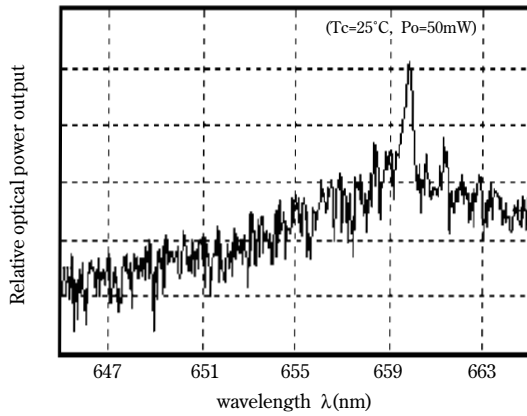


Far field pattern (FFP)

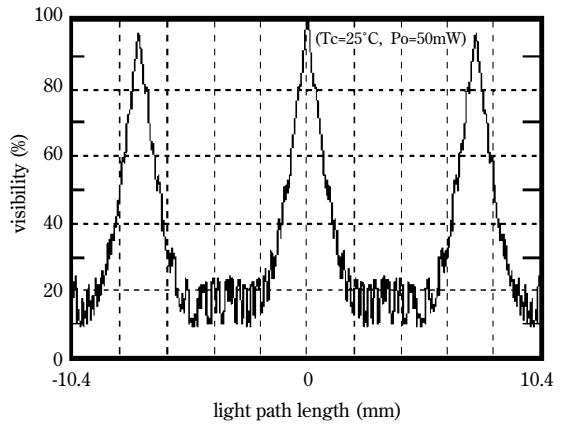


Note) Characteristics shown in diagrams are typical values. (not assurance value)

Lasing spectrum



Visibility



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

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