GH06560B2C

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

(Under development)

■ Features

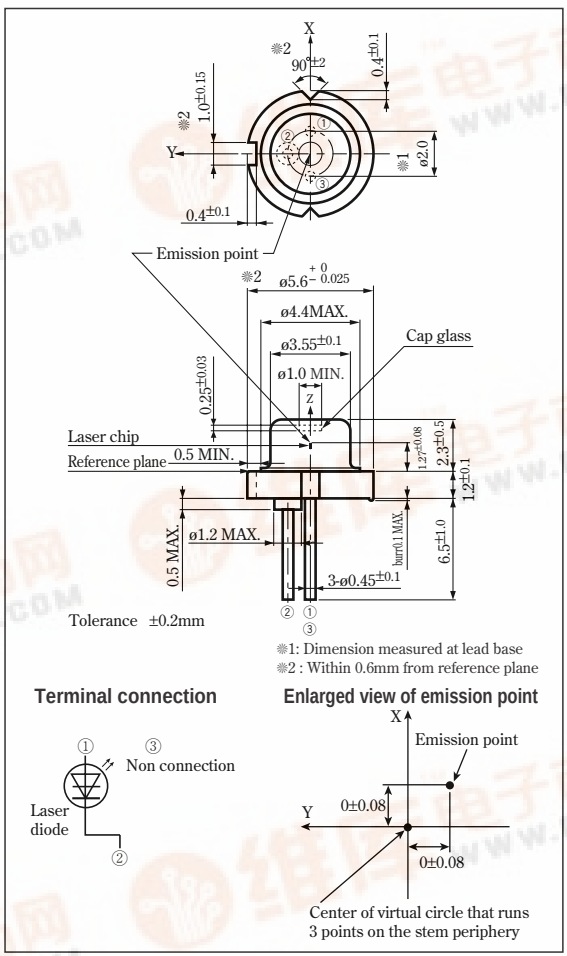
(1) X4 speed DVD-R/+R/-RW/+RW/RAM drives
(2) High power output (pulse MAX. 100mW)
(3) Low aspect ratio type (Aspect ratio : 1.7)
The shaping prism of a pick-up becomes unnecessary and the composition of optical parts can be simplified.
(4) To set MAX. 662 nm wavelength to be compatible with pigment media such as DVD-R/+R
(5) Operating temperature : MAX. 70°C
(6) ϕ5.6mm package

■ Applications

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

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Tc=25°C ※1)

Parameter			Symbol	Rating	Unit
※3 Optical power output			Po	60	mW
※2 Optical power output (pulse)			Pp	100	mW
Reverse voltage		Laser	Vrl	2	V
※1 Operating temperature	※3	CW	Topc(c)	-10 to +70	°C
	※2	Pulse	Topp(c)	-10 to +70	°C
Storage temperature			Tstg	-40 to +85	°C
※4 Soldering temperature			Tsld	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)

■ Electro-optical Characteristics※1

(Tc=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold current		I_{th}	–	-	40	55	mA
Operating current		I_{op}	Po=50mW	-	85	105	mA
Operating voltage		V_{op}		-	2.6	3	V
Wavelength		λ_p		652	658	662	nm
Half intensity angle	※2※3 Parallel	θ//		7.5	10	12	°
	※2※3 Perpendicular	θ⊥		15	17	19	°
※4 Ripple		R_l		-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	Po=50mW	-	-	1	-
※5 Kink		K-LI	P1=20mW, P2=60mW, P3=100mW	-5	-	+5	%
Polarization angle		ω	Po=3mW, NA=0.13	-20	-	+20	°
Polarization ratio		P_l		20	-	-	-
Differential resistance		Rd	$\frac{V(50mW)-V(10mW)}{I(50mW)-I(10mW)}$	-	-	10	Ω

※1 Initial value, CW (Continuous Wave) drive

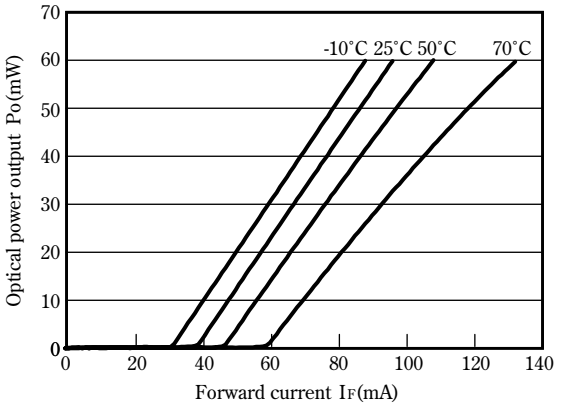
※2 Angle at 50% peak intensity (full-width at half-maximum)

※3 Parallel to the junction plane (X-Z plane)
Perpendicular to the junction plane (Y-Z plane)

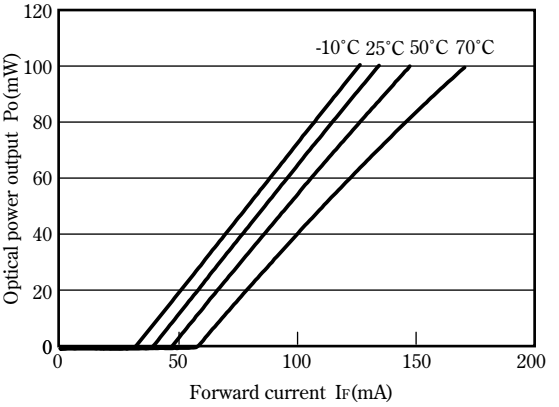
※4 $R_l=\Delta P/P$ ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

※5 Pulse drive (Pulse width : 0.3μs, Duty : 50%)

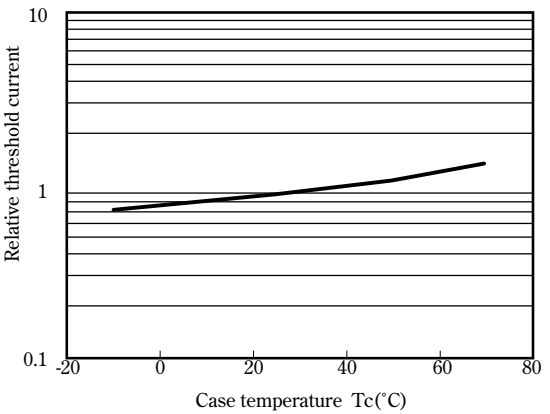
Optical power output - Forward current [CW]



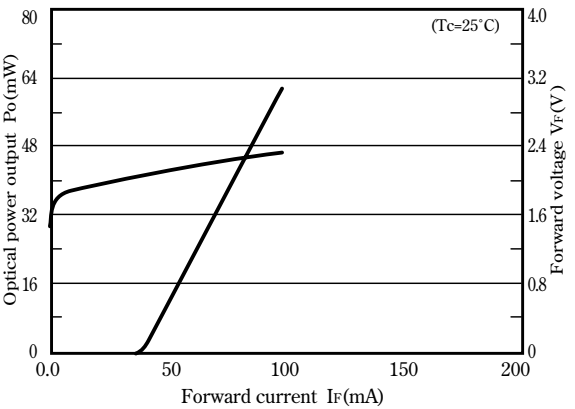
Optical power output - Forward current [Pulse]



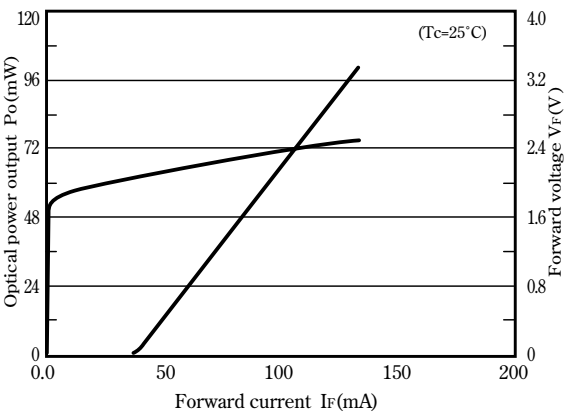
Case temperature dependence of threshold current [CW]



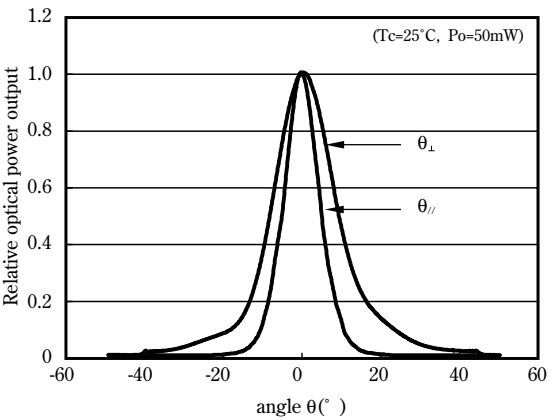
Forward voltage - Forward current [CW]
Optical power output - Forward current [CW]



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

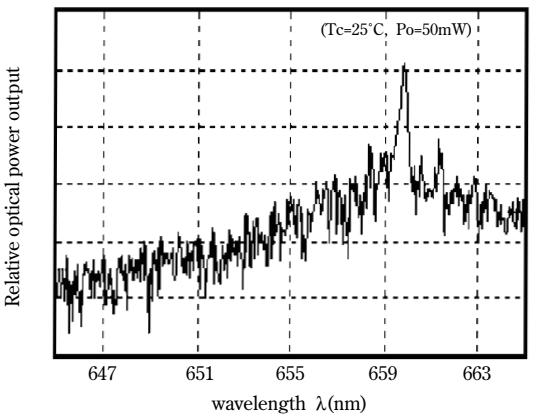


Far field pattern (FFP)

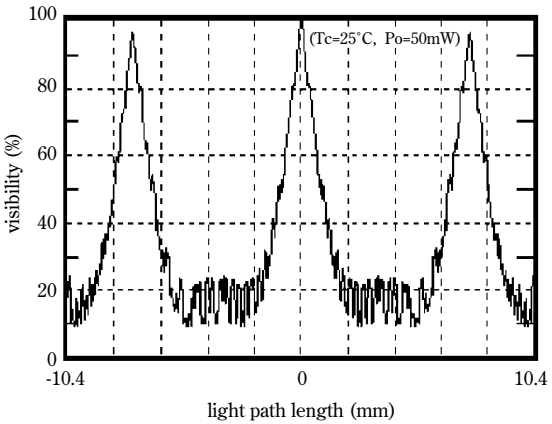


Note) Characteristics shown in diagrams are typical values. (not assurance value)

Lasing spectrum



Visibility



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

Application Circuits

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