GH06560B2C

(Under development)

High Power Red Laser Diode for ×4 Speed DVD Drive (658nm-pulse 100mW)

■ Features

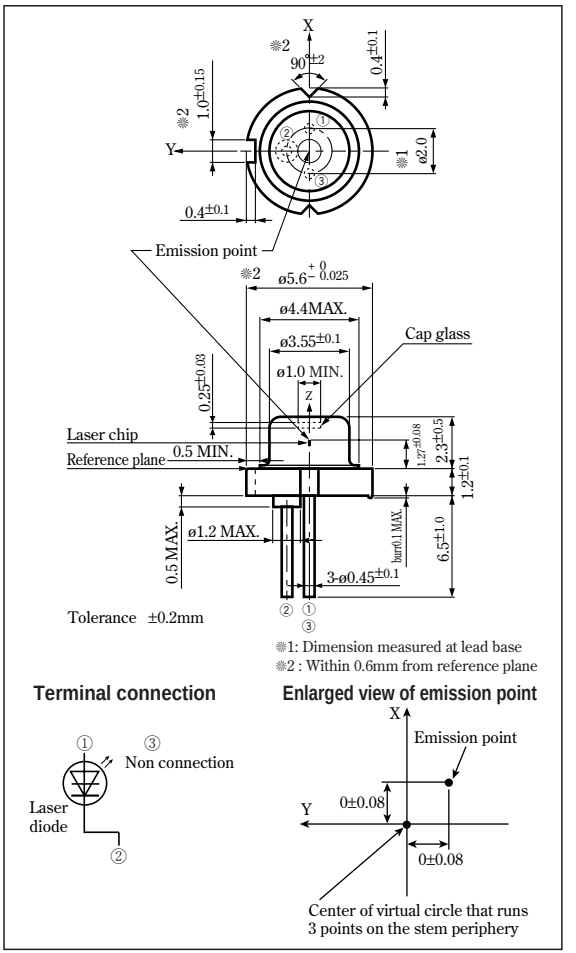
(1) ×4 speed DVD-R/+R/-RW/+RW/RAM drives
(2) High power output (pulse MAX. 100mW)
(3) Low aspect ratio type (Aspect ratio : 1.7)
The shaping prism of a pick-up becomes unnecessary and the composition of optical parts can be simplified.
(4) To set MAX. 662 nm wavelength to be compatible with pigment media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



Terminal connection

Enlarged view of emission point

■ 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_{rl}	2	V
※1 Operating temperature	※3	CW	Topc(c)	-10 to +70	°C
	※2	Pulse	Topp(c)	-10 to +70	°C
Storage temperature			T_{stg}	-40 to +85	°C
※4 Soldering temperature			T_{sld}	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※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)

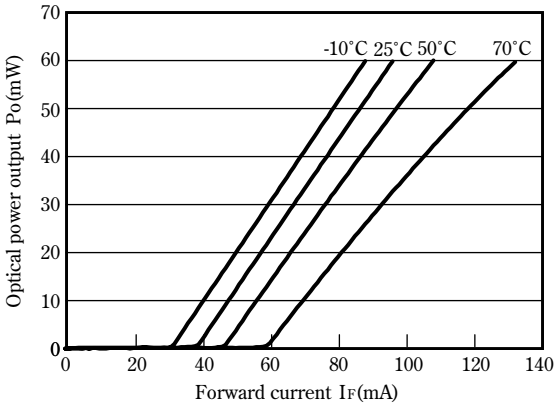
※4 $R_l=\Delta P/P$ ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

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

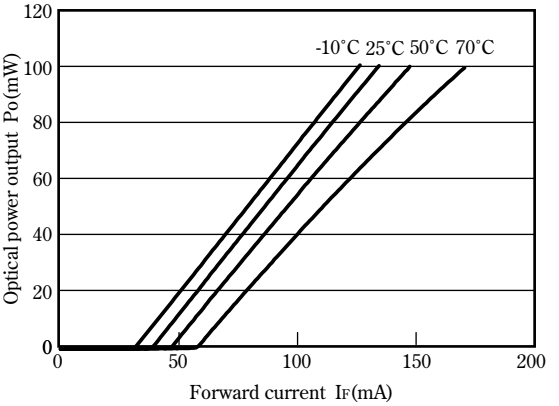
• Please refer to the chapter "Handling Precautions"

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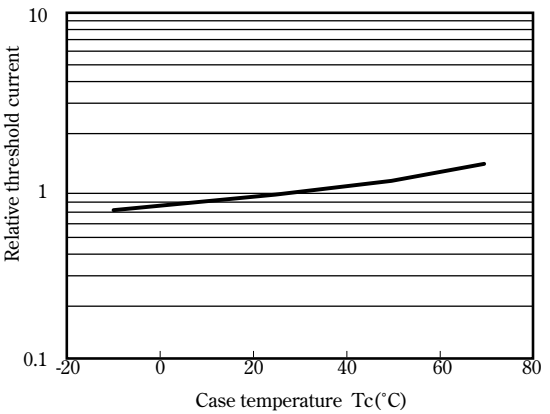
Optical power output - Forward current [CW]



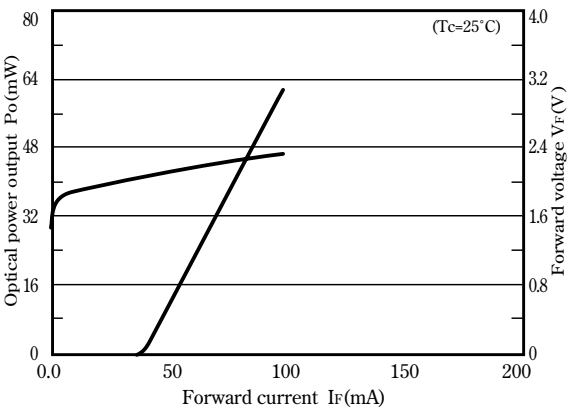
Optical power output - Forward current [Pulse]



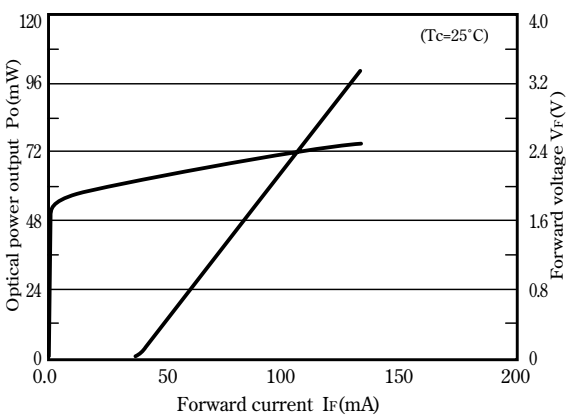
Case temperature dependence of threshold current [CW]



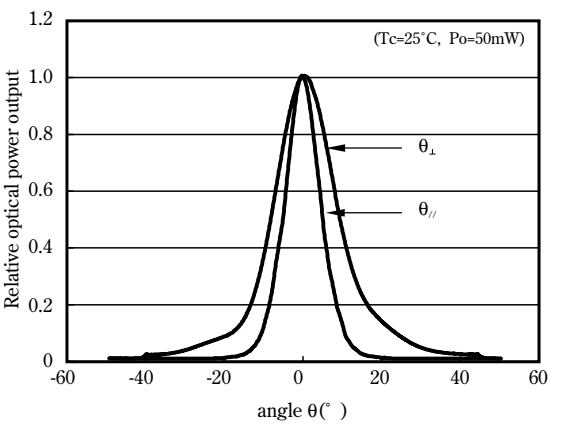
Forward voltage - Forward current [CW]
Optical power output - Forward current [CW]



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



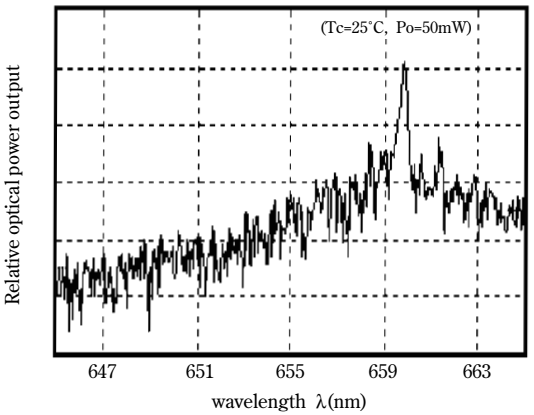
Far field pattern (FFP)



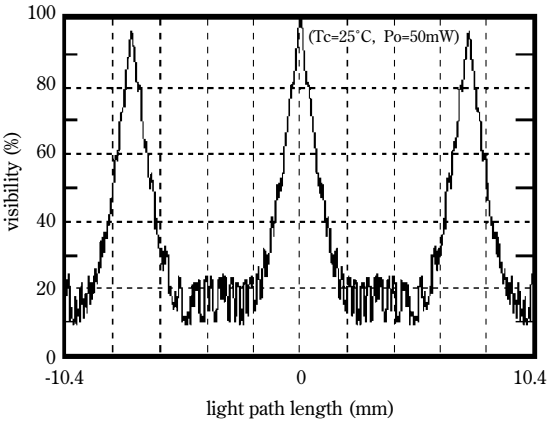
Note) Characteristics shown in diagrams are typical values. (not assurance value)

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Lasing spectrum



Visibility



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

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