

High Power Laser Diode for MAX. X24 Speed CD-R Drive(784nm-110mW)

■ Outline Dimensions

- (Unit : mm)

Technical Drawing of a Laser Diode Assembly

Top View: Shows a circular component with concentric circles. Dimensions include a diameter of $\phi 2.0$, a distance of 1.0 ± 0.15 from the center to a feature, and a distance of 0.4 ± 0.1 from the center to another feature. A 90° angle is indicated. Callouts 1 and 2 are present.

Side View: Shows the profile of the assembly. Key dimensions include a total height of 5.6 ± 0.025 , a diameter of $\phi 4.4 \text{ MAX.}$, a diameter of $\phi 3.55 \pm 0.1$, a diameter of $\phi 1.0 \text{ MIN.}$, a distance of 0.25 ± 0.03 from the top to a feature, a distance of 0.5 MIN. from the reference plane to a feature, a distance of 1.27 ± 0.08 from the reference plane to the top of the cap glass, a distance of 2.3 ± 0.5 from the reference plane to the top of the cap glass, a distance of 1.2 ± 0.1 from the reference plane to the bottom of the cap glass, a distance of 6.5 ± 1.0 from the reference plane to the bottom of the cap glass, a distance of 0.3 MAX. from the reference plane to the bottom of the cap glass, a diameter of $\phi 1.2 \text{ MAX.}$ for the stem, a distance of $3 \pm 0.45 \pm 0.1$ from the reference plane to the bottom of the cap glass, and a diameter of $\phi 0.1 \text{ MAX.}$ for the stem. Callouts 1 and 2 are present.

Enlarged view of emission point: Shows the emission point and the center of the virtual circle that runs 3 points on the stem periphery. Dimensions include a distance of 0 ± 0.08 from the center to the emission point.

Terminal connection: Shows a laser diode symbol with callouts 1, 2, and 3. Callout 1 is labeled "Non connection" and callout 2 is labeled "Laser diode".

Legend:

- ① : Dimension measured at lead base
- ② : Within 0.6mm from reference plane

Tolerance $\pm 0.2 \text{ mm}$

(T_C=25°C ※1)

Parameter		Symbol	Rating	Unit
*3	Optical power output	P _O	110	mW
*2	Optical power output (pulse)	P _p	160	mW
	Reverse voltage	V _{rl}	2	V
*1	Operating temperature	*3 CW T _{opc(c)}	-10 to +65	°C
		*2 Pulse T _{opp(c)}	-10 to +70	°C
	Storage temperature	T _{stg}	-40 to +85	°C
*4	Soldering temperature	T _{sld}	300	°C

*1 Case temperature	*4 At the position of 1.6mm or more from the lead base (Within 3s)
*2 Pulse width : 0.5μs, Duty : 50%	
*3 CW (Continuous Wave) drive	

■ Electro-optical Characteristics^{※1}

(T_C=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold current		I _{th}	—	-	30	40	mA
Operating current		I _{op}	P _o =90mW	-	130	155	mA
Operating voltage		V _{op}		-	2.1	2.5	V
Wavelength		λ _p		780	784	787	nm
Half intensity angle	^{※2※3} Parallel	θ//		8	9	10	°
	^{※2※3} Perpendicular	θ⊥		15	17	19	°
^{※4} Ripple		R _i		-20	-	+20	%
Misalignment angle	^{※3} Parallel	Δθ//		-1.5	-	+1.5	°
	^{※3} Perpendicular	Δθ⊥		-2.5	-	+2.5	°
Differential efficiency		η _d	$\frac{60\text{mW}}{I(90\text{mW}) - I(30\text{mW})}$	0.7	0.9	1.2	mW/mA
Interference pattern intensity		α	P _o =90mW	-	-	1	-
^{※5} Kink		K-LI	P1=32mW, P2=96mW, P3=160mW	-	-	10	%
Polarization ratio		P _i	P _o =3mW, NA=0.13	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 : 0.5μs, Duty : 50%)

• Please refer to the chapter "Handling Precautions"

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