# 808nm high power laser diodes

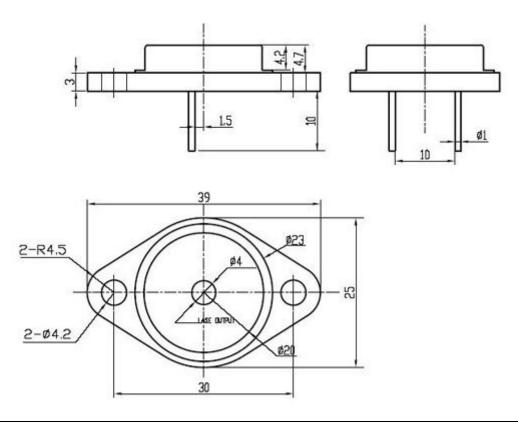
#### **Description**

The 808nm series high power laser diodes with optimized QW structure made by choe have a high reliability, high performance. It has several structures of emitter width. The 808nm series high power laser diodes can get 300mW \, 500mW \, 1.0W \, 2.0W \, 3.0W and 5.0W at RT and CW condition. These products can be applied to solid-state laser pumping sources, medical usage, target designation, and free space optical communication applications.

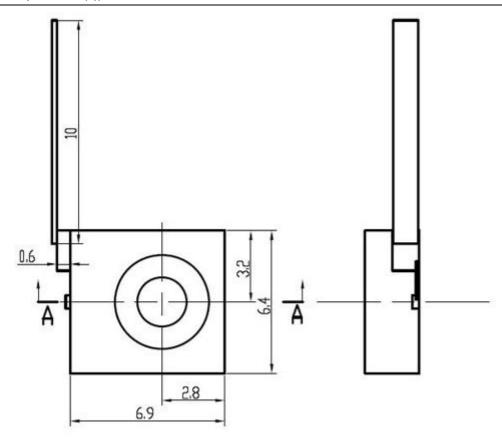
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Features				Applications				
• 300mW、500mW、1.0W、2.0W、3.0W、5.0W CW Output Power				Solid-state Laser Pumping				
Typical 808nm emission wavelength				Medical Usage				
• Variety of emitter width: 50μm、100μm、200μm				Target Designator				
Optimized QW Structure				Free-space Optical Communication				
Package: C-mount & TO	Mount							
Specifications (25°C)		T	1	1	T	I	l	1
Туре	Unit	LD 808-300mW	LD 808-500mW	LD 808-1W	LD 808-2W	LD 808-3W	LD 808-4W	LD 808-5W
Optical Specification		000-300III VV	000-300III VV	000-1 **	000-211	000-344	000-411	000-311
CW Output Power P <sub>o</sub>	mW	300	500	1	2	3	4	5
Operating Mode		CW	CW	CW	CW	CW	CW	CW
$\overline{\text{Center Wavelength } \lambda_c}$	nm	808	808	808	808	808	808	808
Wavelength Tolerance	nm	±5	±5	±5	±5	±5	±5	±5
Spectral Width Δλ	nm	≤1.8	≤1.8	≤1.8	≤1.8	≤1.8	≤1.8	≤1.8
Emitting Area	μm	30x1	50×1	100×1	100×1	150×1	200×1	200×1
Wavelength Temperature Coefficient	nm/ ℃	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Beam Divergence θ <sub>⊥</sub> ×θ <sub>#</sub>	Deg	38×10	38×10	38×10	38×10	38×10	38×10	38×10
Polarization		TE	TE	TE	TE	TE	TE	TE
Electrical Specification								
Slope Efficiency E <sub>s</sub>	W/A	≥0.95	≥1.0	≥1.3	≥1.3	≥1.3	≥1.3	≥1.3
Threshold Current I <sub>th</sub>	A	≤0.10	≤0.13	≤0.25	≤0.40	≤0.40	≤0.60	≤0.8
Operating Current I <sub>o</sub>	A	≤0.40	≤0.60	≤1.1	≤2.0	≤2.7	≤3.8	≤4.7
Operating Voltage V <sub>f</sub>	V	≤2.0	≤2.0	≤2.0	≤2.0	≤2.1	≤2.3	≤2.5
Series Resistance R <sub>d</sub>	Ω	€1.0	≤0.6	€0.3	≤0.25	€0.2	€0.2	≤0.1
Package Style		C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
		TO-3	TO-3	TO-3	TO-3	TO-3	TO-3	TO-3
Absolute Maximum Ratir	ngs	T	1	1	T	1	T	
Reverse Voltage V <sub>r</sub>	V	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Operating Temperature T <sub>o</sub>	$^{\circ}$ C	15-25	15-25	15-25	15-25	15-25	15-25	15-25
Storage Temperature T <sub>stg</sub>	$^{\circ}$	-10~60	-10~60	-10~60	-10~60	-10~60	-10~60	-10~60

### **Package Dimensions**

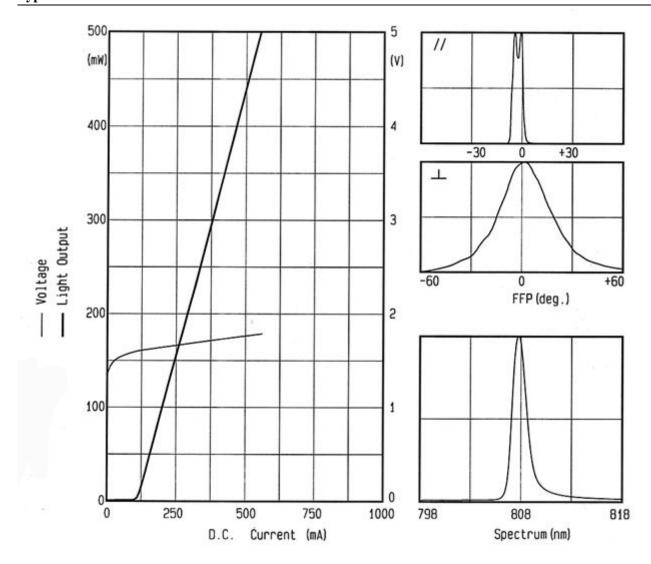
### TO-3 Package (Unit:mm)



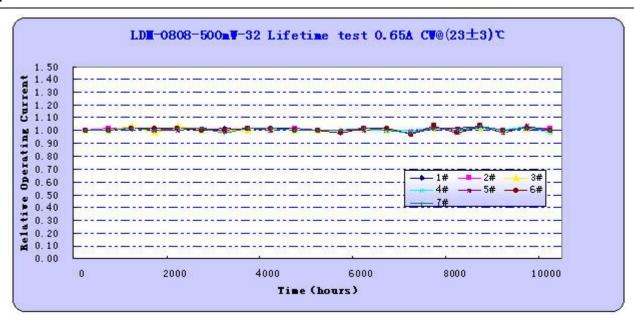
### C-mount Heat Sink (Unit:mm, Heat Sink(+))



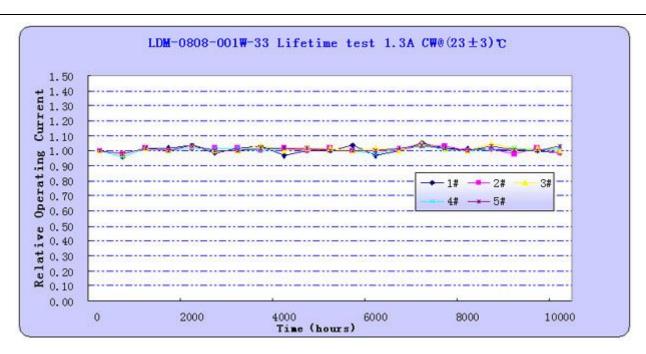
## Typical Performance Curves



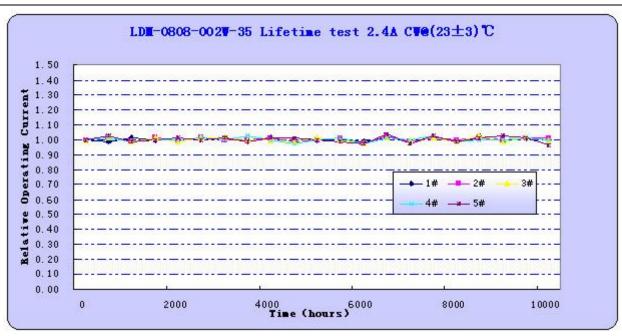
#### **Aging Data**



LD-808-500mW



LD-808-1W



LD-808-2W

#### Notes

- 1. High power laser diodes are high energy laser devices. It is harmful to human body and health. Never look directly into the laser output port.
- 2. High power laser diodes could operate in forward voltage. The reverse current and voltage should not be higher than 25µA and 3V, respectively.
- 3. Heavy humidity can get dew on the LD then damage the LD.
- 4. The generated heat must be removed in time when the LD working.
- 5. The high temperature will effect the performance of the products. The lifetime can also be shortened by high temperature.
- 6. The operating current and optical power of laser must not be higher than the given rate current and power. The excessive current would accelerate aging and shorten lifetime, even damage the LD.
- 7. The semiconductor laser diode is a sensitive electronic device. Please observe precaution for handling electrostatitic sensitive devices.