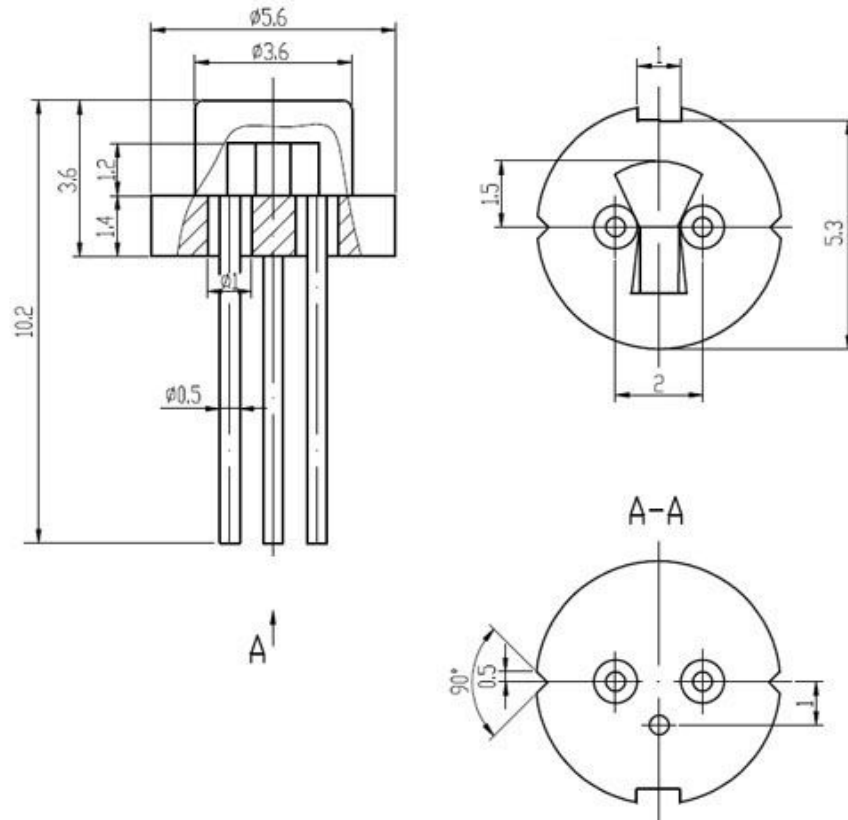


## 980nm high power laser diodes

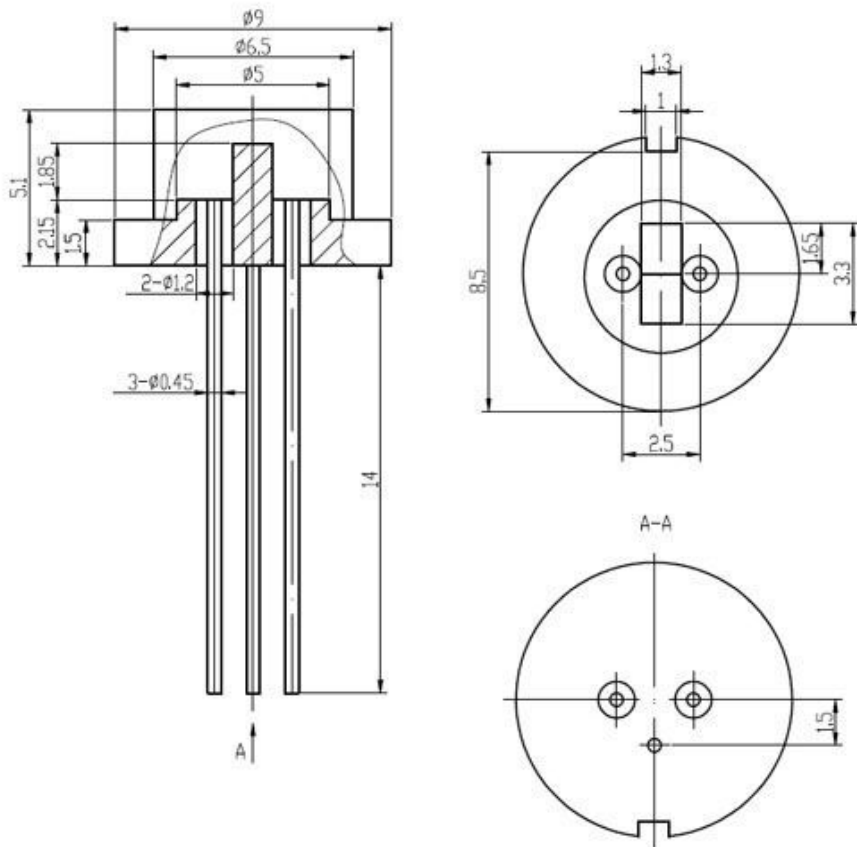
Description								
<p>The 980nm series high power laser diodes with optimized QW structure made by cboe have a high reliability, high performance. It has several structures of emitter width. The 980nm series high power laser diodes can get 50mW、300mW、500mW、1.0W and 4.0W at RT and CW condition. These products can be applied to solid-state laser pumping sources, medical usage, target designation, and free space optical communication applications.</p>								
Features				Applications				
<ul style="list-style-type: none"> <li>● 50mW、300mW、500mW、1.0W CW Output Power</li> <li>● Typical 980nm emission wavelength</li> <li>● Variety of emitter width: 4μm、50μm、100μm、200μm</li> <li>● Optimized QW Structure</li> <li>● Package:TO-18 &amp; TO-5</li> </ul>				<ul style="list-style-type: none"> <li>● Solid-state Laser Pumping</li> <li>● Medical Usage</li> <li>● Target Designator</li> <li>● Free-space Optical Communication</li> </ul>				
Specifications (25℃)								
Type	Unit	LD 980-50mW	LD 980-300mW	LD 908-500mW	LD 980-1W			
<b>Optical Specification</b>								
CW Output Power P <sub>o</sub>	mW	50	300	500	1000			
Operating Mode		CW	CW	CW	CW			
Center Wavelength λ <sub>c</sub>	nm	980	980	980	980			
Wavelength Tolerance	nm	±10	±10	±10	±10			
Spectral Width Δλ	nm	≤3.0	≤3.0	≤3.0	≤3.0			
Emitting Area	μm	4x1	50×1	50×1	100×1			
Wavelength Temperature Coefficient	nm/℃	0.3	0.3	0.3	0.3			
Beam Divergence θ <sub>1</sub> ×θ <sub>2</sub>	Deg	35×25	48×10	48×10	48×10			
Polarization		TE	TE	TE	TE			
<b>Electrical Specification</b>								
Slope Efficiency E <sub>s</sub>	W/A	≥0.45	≥0.9	≥0.9	≥0.88			
Threshold Current I <sub>th</sub>	A	≤0.025	≤0.15	≤0.15	≤0.30			
Operating Current I <sub>o</sub>	A	≤0.12	≤0.54	≤0.85	≤1.8			
Operating Voltage V <sub>f</sub>	V	≤2.0	≤2.0	≤2.0	≤2.0			
Series Resistance R <sub>d</sub>	Ω	≤5.0	≤0.8	≤0.8	≤0.5			
Package Style		TO18	TO-5	TO-5	TO-5			
<b>Absolute Maximum Ratings</b>								
Reverse Voltage V <sub>r</sub>	V	2.0	2.0	2.0	2.0			
Operating Temperature T <sub>o</sub>	℃	10-40	10-40	10-40	10-40			
Storage Temperature T <sub>stg</sub>	℃	-40~85	-40~85	-40~85	-40~85			

### Package Dimensions

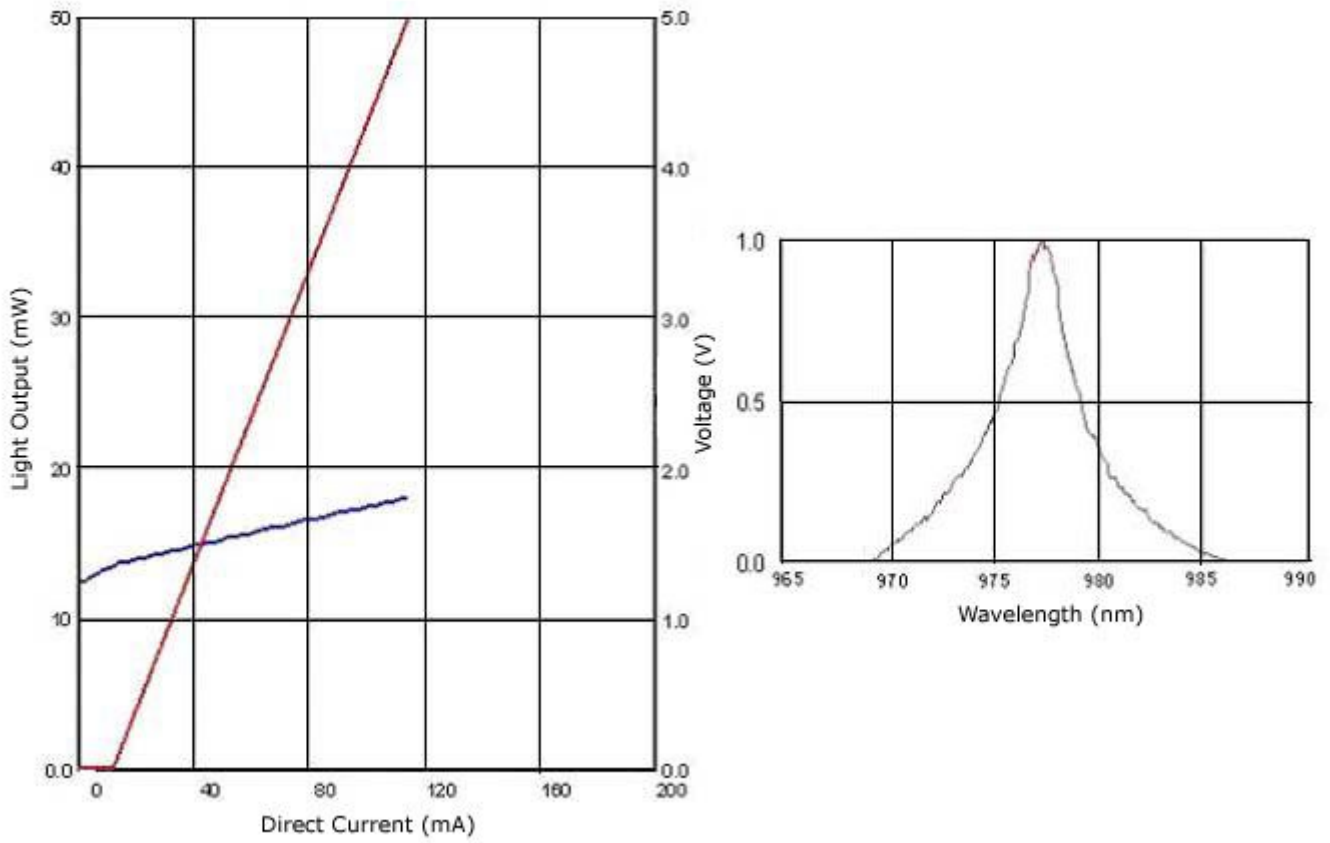
#### TO-18 Package (Unit:mm)



#### TO-5 Package (Unit:mm)



## Typical Performance Curves



## Notes

1. Caution! Don't look at the laser beam directly, because it's harmful to eyes.
2. The storage temperature is between -40 and 85 °C.
3. Under normal circumstances, the higher the temperature is, the shorter the life of semiconductor laser will be. It is recommended to use lasers under TEC cooling or in air-conditioned room.
4. To use a laser diode in following sequences: Turn on the power supply; connect to the laser diode; and then increase the current gradually to the specified operating value. To shut down the laser diode, please decrease the current to zero gradually, and then turn off the power. Please make sure that the power supply has no current overshoot at any time. The current overshoot can damage the laser diodes permanently.
5. The high power laser diode arrays are very sensitive to electrostatic. Please wear anti-static bracelet during operating with the laser diodes (arrays).
6. Be sure that the operating current does not exceed the specified operating current. Otherwise, it will accelerate laser aging, shorten lifetime or even damage devices permanently.
7. A clean, dry and ventilated environment should be available when storing and operating laser diodes (arrays). Dust may degrade the laser diodes (arrays).
8. Constant-current power supply with voltage regulator should be used to avoid surge.