AlGaAs Invisible Laser Diode   ADL-80Y01TX/TZ

2004/05 ver. 1.0
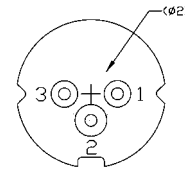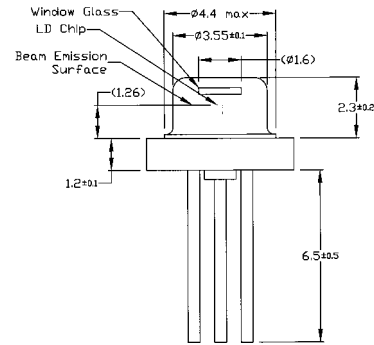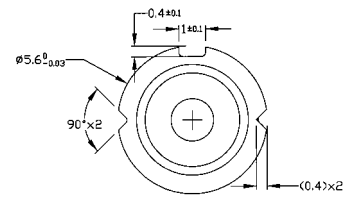
808nm 200mW 5.6   TO-Type High Power Laser Diode

- Features
    1. Standard 5.6   TO-type: easy for design, assembly and integration
    2. Low operation current
    3. Long operation lifetime, MTTF>10000 hrs
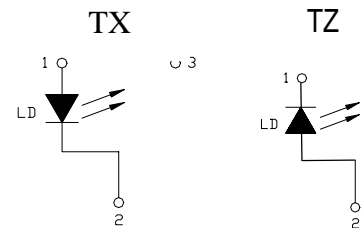   4. Cost effective

- Applications
    1. Pumps for solid state lasers
    2. Miniature low power green laser
    3. Medical use

( ) denoted typical value

- Absolute maximum ratings

Parameter	Symbol	Condition	Rating	Unit
Light output power	P_O	CW	200	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Case temperature	T_C	-	-10~+50	^{o}C
Storage temperature	T_S	-	-40~+75	^{o}C

- Electrical and optical characteristics (T_c=25 ^{o}C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Peak wavelength		805	808	811	nm	P_o=200mW
Threshold current	I_{th}	-	55	75	mA	
Operating current	I_{op}	-	260	280	mA	P_o=200mW
Operating voltage	V_{op}	-	1.7	1.9	V	P_o=200mW
Differential efficiency		0.8	1	-	mW/mA	P_o=150-200mW
Parallel divergence angle	//	-	9	15	degree	
Perpendicular divergence angle		-	41	48	degree	P_o=200mW
Emission point accuracy	x y z	-	-	±80	um	

- Precautions
1. Do not operate the device above the maximum rating condition, even momentarily.   It may cause unexpected permanent damage to the device.
2. Semiconductor laser device is very sensitive to electrostatic discharge.   High voltage spike current may change the characteristics of the device, or malfunction at any time during its service period.   Therefore, proper measures for preventing electrostatic discharge are strongly recommended.
3. Effective heat sink can help the device operates under a more relax condition; as a result, a more stable characteristics and better reliability can be achieved.   So it is recommended that always apply proper heat sink before the device is operating.
4. Do not look into the laser beam directly by bare eyes.   The laser beam may cause severe damage to human eyes.

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L-I Curve vs. Temperature

Optical Power (mW)

10 °C 20 °C 30 °C 40 °C 50 °C

Operation Current (mA)

Threshold Current vs. Case Temperature

Threshold Current (mA)

Case Temperature (degree)

Differential Efficiency vs. Case Temperature

Differential Efficiency (mW/mA)

Case Temperature (degree)

Oscillation Wavelength vs. Case Temperature

Oscillation Wavelength (nm)

Case Temperature (degree)

Power Dependence of Far Field Pattern

Intensity

Po = 200mW

Po = 150mW

Po = 100mW

Po = 50mW

Angle (degree)

Power Dependence of Wavelength

Intensity

Oscillation Wavelength (nm)