

# QSI LASER DIODE SPECIFICATIONS FOR APPROVAL

**Customer :**

**Model : QL78E6HG-Q**

## Signature of Approval

**Approved by** \_\_\_\_\_

**Checked by** \_\_\_\_\_

**Issued by** \_\_\_\_\_

## Approval by Customer

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**QSI Co., Ltd.**

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**[WWW.QSILaser.com](http://WWW.QSILaser.com)**

# QL78E6HG-Q

## AlGaAs Laser Diode

Quantum Semiconductor International Co., Ltd.

Ver.1 25-FEB-2010

### ◆ OVERVIEW

**QL78E6HG-Q** is a MOCVD grown 780nm band AlGaAs laser diode with quantum well structure. It's an attractive light source with a typical light output power of 6mW for industrial optical module and sensor application.

### ◆ APPLICATION

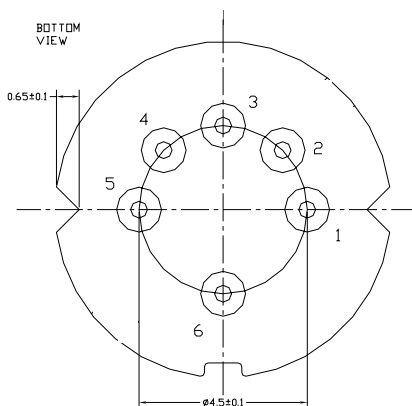
- Laser Printer
- Digital Copiers
- Industrial optical module

### ◆ FEATURES

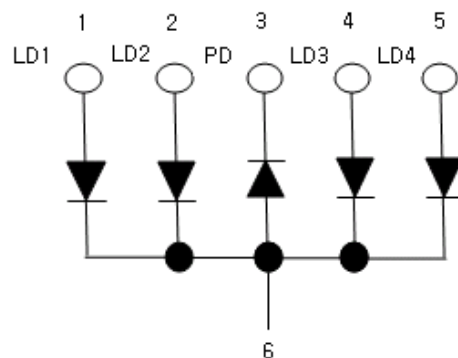
- Visible Light Output :  $\lambda_p = 780 \text{ nm}$
- Optical Power Output : 6mW CW
- Number of Beams : 4
- Nominal Beam to Beam Separation : 14um pitch (beam to beam distance)
- Package Type : TO-5 (9.0mm $\phi$ )
- Built-in Photo Diode for Monitoring Laser Diode

### ◆ ELECTRICAL CONNECTION

#### Bottom View



#### Pin Configuration



◆ ABSOLUTE MAXIMUM RATING at Tc=25°C

Items	Symbol	Values	Unit
Optical Output Power	P	10	mW
Laser Diode Reverse Voltage	V	2	V
Photo Diode Reverse Voltage	V	30	V
Operating Temperature	Topr	-10 ~ +60	°C
Storage Temperature	Tstg	-40 ~ +85	°C

◆ ELECTRICAL and OPTICAL CHARACTERISTICS at Tc=25°C

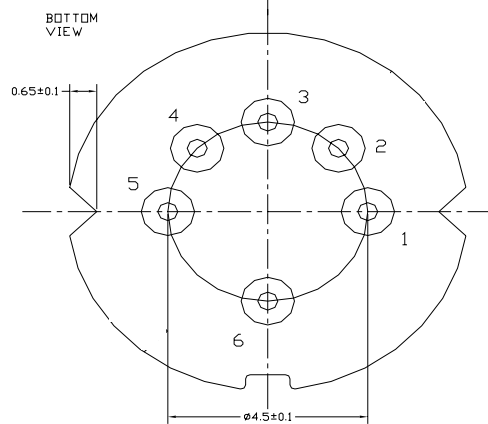
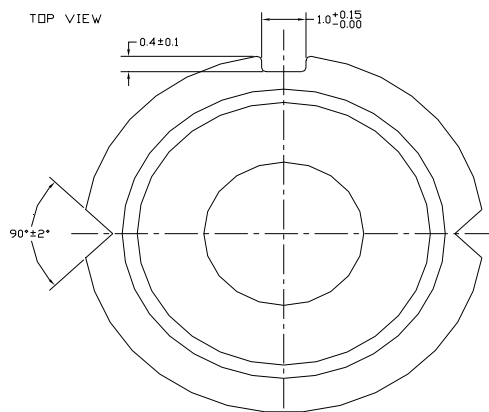
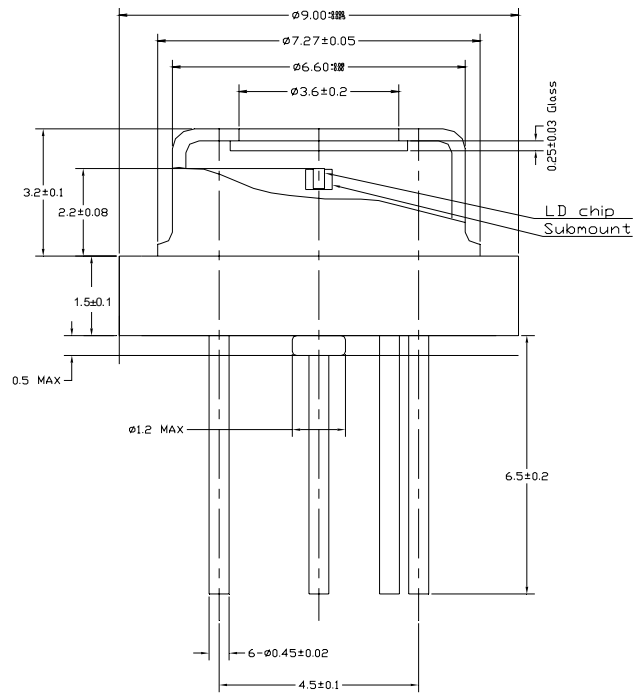
Items	Symbols	Min.	Typ.	Max.	Diff.	Unit	Condition
Optical Output Power	Po	-	6	-		mW	-
Threshold Current	Ith	8	14	24	2	mA	-
Operating Current	Iop	-	27	38	3	mA	Po=6mW
Differential efficiency	$\eta$	0.35	0.5	0.8	0.2	mA	5mW/ I(6mW)-I(1mW)
Operating Voltage	Vop	1.5	1.8	2.5		V	Po=6mW
Lasing Wavelength	$\lambda_p$	775	788	800	2	nm	Po=6mW
Beam Divergence	$\theta_{  }$	7	9	12	2		Po=6mW
	$\theta_{\perp}$	25	31	35	4		Po=6mW
Beam Angle	$\Delta\theta_{  }$			$\pm 2$		Deg	Po=6mW
	$\Delta\theta_{\perp}$			$\pm 3$		Deg	Po=6mW
Monitor Current	I <sub>m</sub>	0.25	0.4	0.8	30%	mA	Po=6mW
Center to Center spacing between adjacent beams		13.7	14	14.3		um	SEM measurement
Beam Spacing		41.7	42	42.3		um	LD1 to LD4
Astigmatism	As			10	2	um	Po=6mW

**NOTICE : QL78E6HG-Q to be operated on APC circuit.**

The above product specifications are subject to change without notice.



# ◆ PACKAGE DIMENSION



◆PACKING

