

# QSI LASER DIODE

## SPECIFICATIONS FOR APPROVAL

**Customer :**

**Model : QL78F6S-A/B/C**

**Signature of Approval**

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

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

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

**Approval by Customer**

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# QL78F6S-A/B/C

## AlGaAs Laser Diode

Quantum Semiconductor International Co., Ltd.

Ver. 1. 2009

### ◆ OVERVIEW

**QL78F6S-A/B/C** 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 10mW for industrial optical module and sensor application

### ◆ APPLICATION

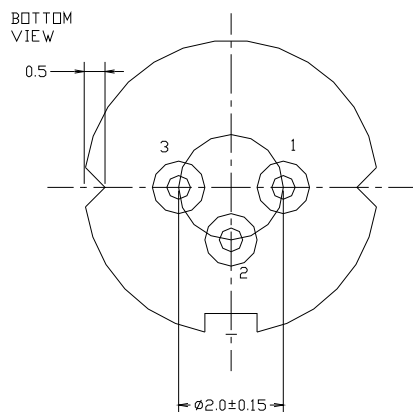
- Industrial optical module
- Laser Beam Printer

### ◆ FEATURES

- Visible Light Output :  $\lambda_p = 780 \text{ nm}$
- Optical Power Output : 10mW CW
- Package Type : TO-18 (5.6mm $\phi$ )
- Built-in Photo Diode for Monitoring Laser Diode

### ◆ ELECTRICAL CONNECTION

#### Bottom View



#### Pin Configuration

|   |                              |
|---|------------------------------|
| A | LD cathod, PD anode (Fig. 1) |
| B | LD , PD anode (Fig. 2)       |
| C | LD anode, PD cathod (Fig. 3) |

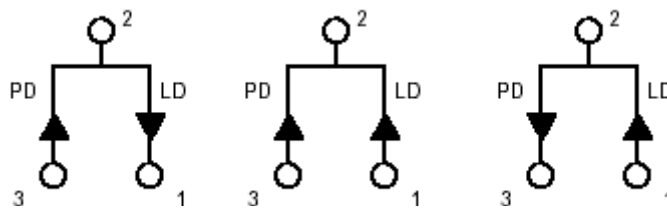


Fig. 1

QL78F6SA

Fig. 2

QL78F6SB

Fig. 3

QL78F6SC

◆ ABSOLUTE MAXIMUM RATING at Tc=25°C

| Items                       | Symbols | Values    | Unit |
|-----------------------------|---------|-----------|------|
| Optical Output Power        | P       | 12        | 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

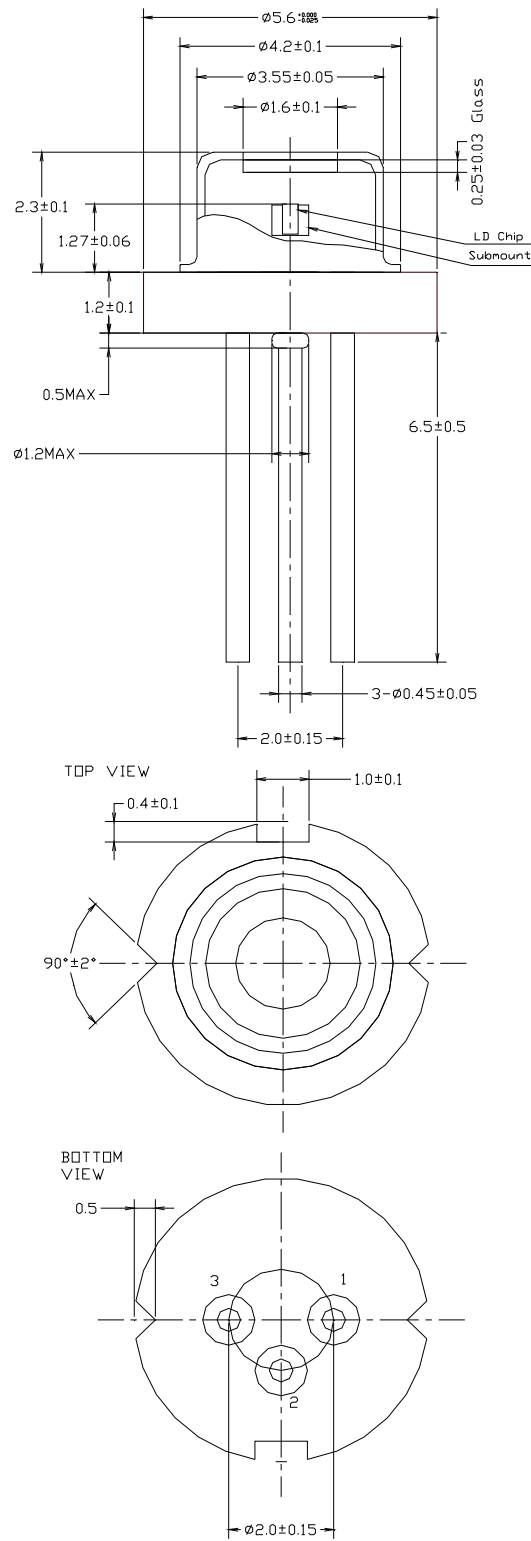
| Items                   | Symbols                        | Min. | Typ. | Max       | Unit          | Condition   |
|-------------------------|--------------------------------|------|------|-----------|---------------|---|
| Optical Output Power    | Po                             | -    | 10   | -         | mW            | -   |
| Threshold Current       | Ith                            | 8    | 12   | 18        | mA            | -   |
| Operating Current       | Iop                            | -    | 22   | 40        | mA            | Po=10mW   |
| Differential efficiency | $\eta$                         | 0.55 | 0.75 | 0.95      | mW/mA         | $\frac{5\text{mW}}{I(10\text{mW})-I(5\text{mW})}$ |
| Operating Voltage       | Vop                            | 1.5  | 1.8  | 2.4       | V             | Po=10mW   |
| Lasing Wavelength       | $\lambda_p$                    | 775  | 788  | 800       | nm            | Po=10mW   |
| Beam Divergence         | $\theta_{  }$                  | 6    | 8    | 13        | deg           | Po=10mW   |
|                         | $\theta_{\perp}$               | 25   | 31   | 35        | deg           | Po=10mW   |
| Beam Angle              | $\Delta\theta_{  }$            | -    | -    | $\pm 2.0$ | deg           | Po=10mW   |
|                         | $\Delta\theta_{\perp}$         | -    | -    | $\pm 3.0$ | deg           | Po=10mW   |
| Monitor Current         | I <sub>m</sub>                 | 0.5  | 0.7  | 1.5       | mA            | Po=10mW   |
| Optical Distance        | $\Delta X, \Delta Y, \Delta Z$ | -    | -    | $\pm 60$  | $\mu\text{m}$ | Po=10mW   |
| Astigmatism             | As                             |      |      | 10        | $\mu\text{m}$ | Po=10mW   |

**NOTICE : QL78F6S-A/B/C to be operated on APC**

The above product specifications are subject to change without notice.



# ◆ PACKAGE DIMENSION



◆PACKING

