

# LD78F6DF-1

## AlGaAs Laser Diode

Quantum Semiconductor International Co., Ltd.

March. 2006. Ver 4

### ◆ OVERVIEW

LD78F6DF-1 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

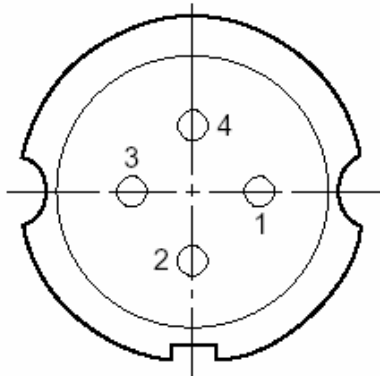
- Laser Printer
- Digital Copiers
- Industrial optical module

### ◆ FEATURES

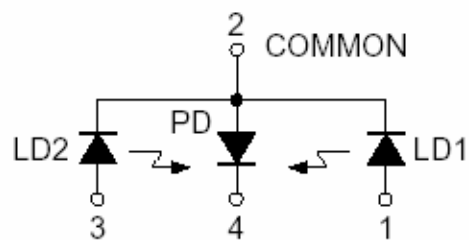
- Visible Light Output :  $\lambda_p = 780 \text{ nm}$
- Optical Power Output : 10mW CW
- Dual Beam : 14um pitch (beam to beam)
- Package Type : TO-18 (5.6mm $\phi$ )
- Built-in Photo Diode for Monitoring Laser Diode

### ◆ ELECTRICAL CONNECTION

Bottom View



Pin Configuration



LD78F6DF-1

### ◆ ABSOLUTE MAXIMUM RATING at Tc=25°C

Items	Symbols	Values	Unit
Optical Output Power	P	5 1	W m
Laser Diode Reverse Voltage	V	2	V
Photo Diode Reverse Voltage	V	0 3	V
Operating Temperature	Topr	-10 ~ +60	°C
Storage Temperature	Tstg	-40 ~ +85	°C

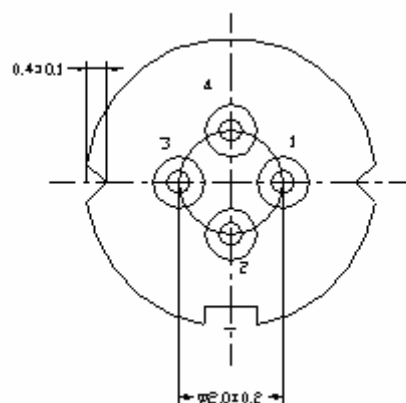
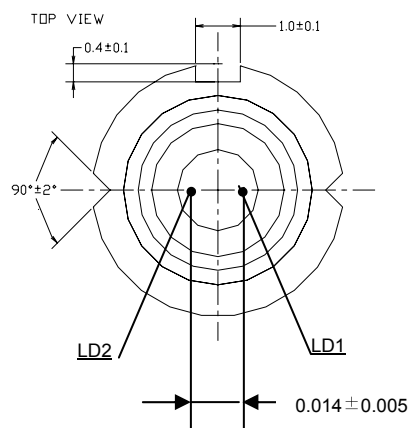
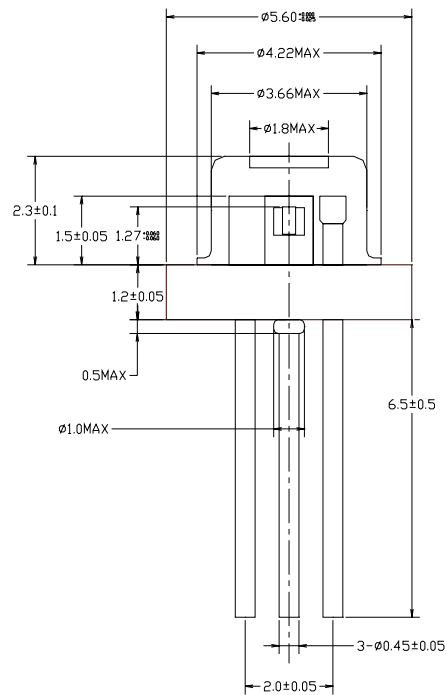
### ◆ ELECTRICAL and OPTICAL CHARACTERISTICS at Tc=25°C

Items	Symbols	Min.	Typ.	Max.	Diff.	Unit	Condition
Optical Output Power	Po	-	10	-		mW	-
Threshold Current	Ith	8	14	20	2	mA	-
Operating Current	Iop	-	25	40	-	mA	Po=10mW
Differential efficiency		0.55	0.75	0.95	-	mW/mA	5mW/ I(15mW)-I(10mW)
Operating Voltage	Vop	1.5	1.8	2.4	-	V	Po=10mW
Lasing Wavelength	$\lambda_p$	775	788	800	1.8	nm	Po=10mW
Beam Divergence	$\theta_{  }$	7	9	12	2	deg	Po=10mW
	$\theta_{\perp}$	25	31	35	3	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	1.0	2.0	30%	mA	Po=10mW
Optical Distance	$\Delta X, \Delta Y, \Delta Z$	-	-	$\pm 80$		$\mu\text{m}$	Po=10mW
Center to Center spacing between adjacent beams		13.5	14	14.5		$\mu\text{m}$	SEM measurement
Astigmatism	As			10	2	$\mu\text{m}$	Po=10mW
PD Dark Current	I <sub>d</sub>	-	-	100	-	nA	-

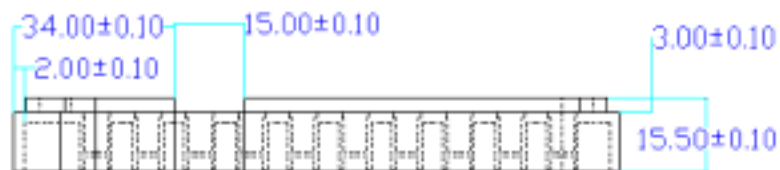
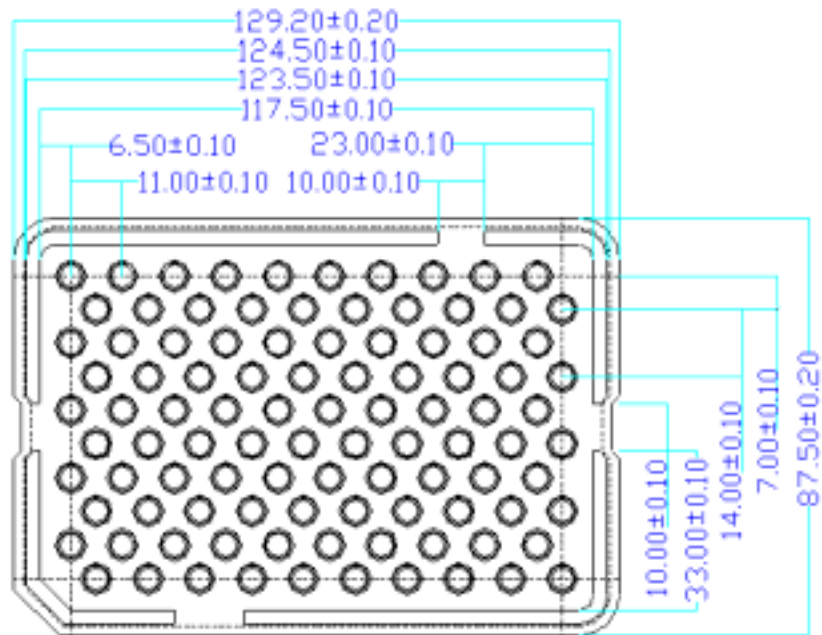
**NOTICE : LD78F6DF- 1 to be operated on APC circuit.**

The above product specifications are subject to change without notice.

## ◆ PACKAGE DIMENSION



◆ PACKING



**International Sales**

**First Sensor AG**  
 Peter-Behrens-Str. 15  
 12459 Berlin  
 Germany  
 T +49 30 6399 2399  
 F +49 30 6399 23-752  
 sales.opto@first-sensor.com  
 www.first-sensor.com

**US Sales**

**First Sensor Inc.**  
 5700 Corsa Avenue #105  
 Westlake Village, CA 91362  
 USA  
 T +1 818 7063 400  
 F +1 818 8897 053  
 sales.us@first-sensor.com  
 www.first-sensor.com

