

QSI LASER DIODE SPECIFICATIONS FOR APPROVAL

Customer :

Model : QL78F6DF-1

Signature of Approval

Approved by _____

Checked by _____

Issued by _____

Approval by Customer



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QL78F6DF-1

AlGaAs Laser Diode

Quantum Semiconductor International Co., Ltd.

March. 2006. Ver 4

◆ OVERVIEW

QL78F6DF-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

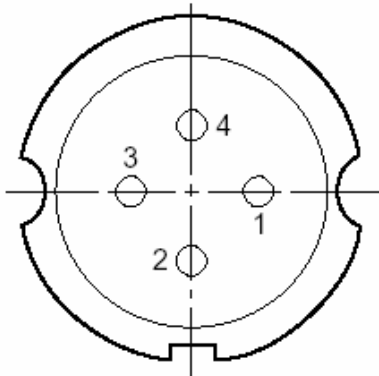
- Laser Printer
- Digital Copiers
- Industrial optical module

◆ FEATURES

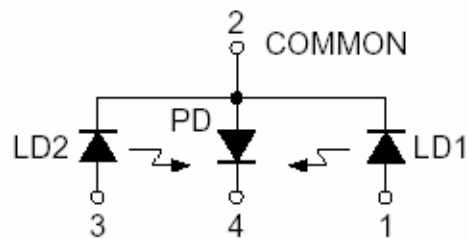
- Visible Light Output : $\lambda_p = 780 \text{ nm}$
- Optical Power Output : 10mW CW
- Dual Beam : 14um pitch (beam to beam)
- Package Type : TO-18 (5.6mm ϕ)
- Built-in Photo Diode for Monitoring Laser Diode

◆ ELECTRICAL CONNECTION

Bottom View



Pin Configuration



QL78F6DF-1

◆ ABSOLUTE MAXIMUM RATING at Tc=25°C

Items	Symbols	Values	Unit
Optical Output Power	P	15	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

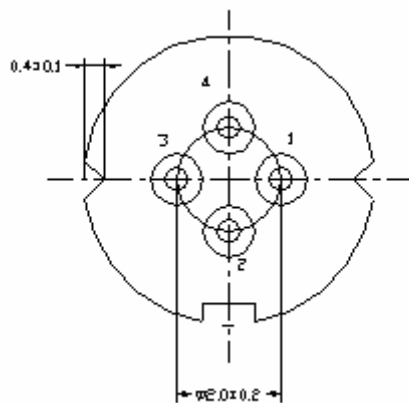
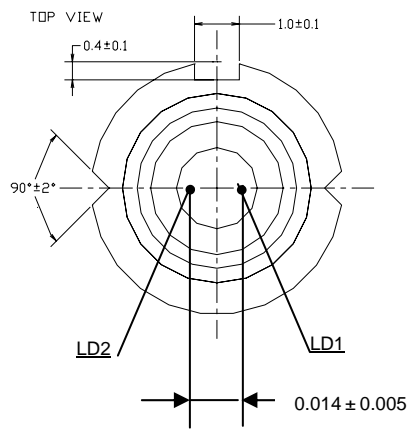
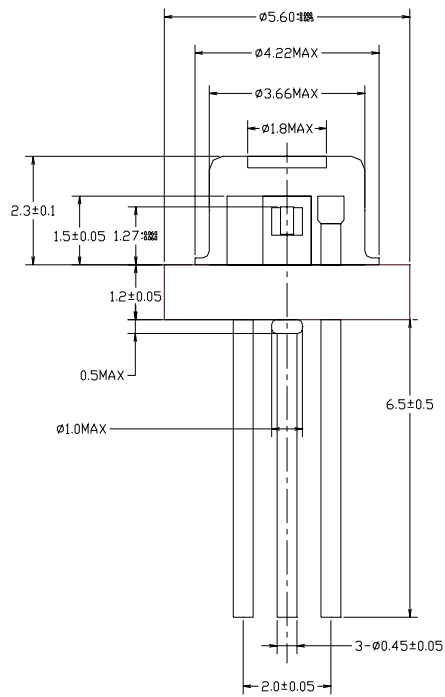
Items	Symbols	Min.	Typ.	Max.	Diff.	Unit	Condition
Optical Output Power	Po	-	10	-		mW	-
Threshold Current	Ith	8	14	20	2	mA	-
Operating Current	Iop	-	25	40	-	mA	Po=10mW
Differential efficiency		0.55	0.75	0.95	-	mW/mA	5mW/ I(15mW)-I(10mW)
Operating Voltage	Vop	1.5	1.8	2.4	-	V	Po=10mW
Lasing Wavelength	λ_p	775	788	800	1.8	nm	Po=10mW
Beam Divergence	$\theta_{ }$	7	9	12	2	deg	Po=10mW
	θ_{\perp}	25	31	35	3	deg	Po=10mW
Beam Angle	$\Delta\theta_{ }$	-	-	± 2.0		deg	Po=10mW
	$\Delta\theta_{\perp}$	-	-	± 3.0		deg	Po=10mW
Monitor Current	I _m	0.5	1.0	2.0	30%	mA	Po=10mW
Optical Distance	$\Delta X, \Delta Y, \Delta Z$	-	-	± 80		μm	Po=10mW
Center to Center spacing between adjacent beams		13.5	14	14.5		μm	SEM measurement
Astigmatism	As			10	2	μm	Po=10mW
PD Dark Current	I _d	-	-	100	-	nA	-

NOTICE : QL78F6DF- 1 to be operated on APC circuit.

The above product specifications are subject to change without notice.



◆ PACKAGE DIMENSION



◆PACKING

