

VISIBLE LASER DIODE

NDL3321ST, NDL3321SU

5 mW, 650 nm AlGaInP MQW VISIBLE LASER DIODE FOR DVD, DVD-ROM APPLICATIONS

DESCRIPTION

The NDL3321ST and NDL3321SU are AlGaInP 650 nm visible laser diodes and especially developed for DVD, DVD-ROM. The newly developed Multiple Quantum Well (MQW) LD chip, can achieve low operating current, wide temperature range.

Use of a CD package allows easy replacement of conventional 780 nm LDs.

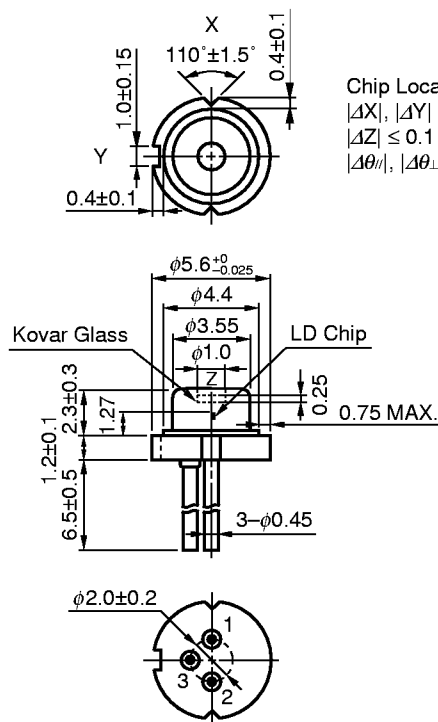
FEATURES

- | | | | |
|-------------------------|-------------------------------|------------------------------------|--|
| • Optical output power | $P_o = 5.0 \text{ mW}$ | • Wide operating temperature range | $T_c = -10 \text{ to } +70 \text{ }^\circ\text{C}$ |
| • Low threshold current | $I_{th} = 45 \text{ mA TYP.}$ | • Peak emission wavelength | $\lambda_p = 650 \text{ nm TYP.}$ |
| • Low operating current | $I_{op} = 60 \text{ mA TYP.}$ | • Fundamental transverse mode | |
| • Low operating voltage | $V_{op} = 2.2 \text{ V TYP.}$ | | |

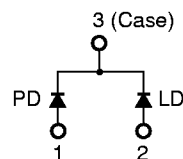
APPLICATIONS

- DVD, DVD-ROM
- Measurement Instrument

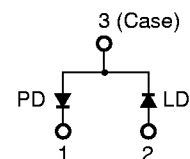
PACKAGE DIMENSIONS in millimeters



NDL3321ST



NDL3321SU



PIN CONNECTIONS

- | | |
|----------------|----------------|
| 1. PD Anode | 1. PD Cathode |
| 2. LD Anode | 2. LD Anode |
| 3. Case Ground | 3. Case Ground |

The information in this document is subject to change without notice.

ABSOLUTE MAXIMUM RATINGS ($T_c = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Optical Output Power	P_o	6.0	mW
Reverse Voltage of LD	V_R	2.0	V
Forward Current of PD	I_F	20	mA
Reverse Voltage of PD	V_R	30	V
Operating Case Temperature	T_c	-10 to +70	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 to +85	$^{\circ}\text{C}$

RECOMMENDED OPERATING CONDITIONS ($T_c = 25\text{ }^{\circ}\text{C}$)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Optical Output Power	P_o			5.0	mW

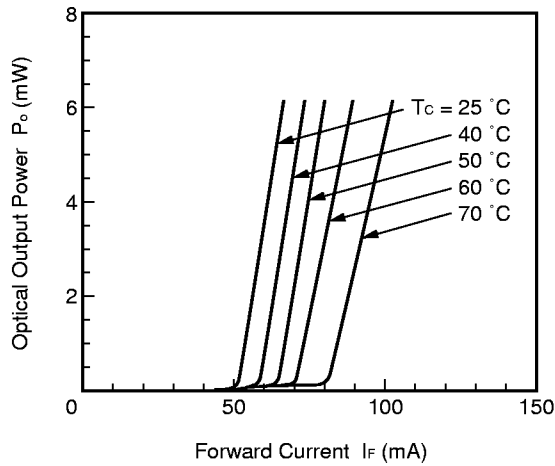
ELECTRO-OPTICAL CHARACTERISTICS ($T_c = 25\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating Voltage	V_{op}	$P_o = 5.0\text{ mW}$		2.2	2.7	V
Threshold Current	I_{th}	CW		45	65	mA
Operating Current	I_{op}	$P_o = 5.0\text{ mW}$		60	80	mA
Monitor Current	I_m	$V_R = 5\text{ V}$, $P_o = 5.0\text{ mW}$	0.1	0.3	0.5	mA
Peak Emission Wavelength	λ_p	$P_o = 5.0\text{ mW}$	645	650	657	nm
Vertical Beam Angle	$\theta_{\perp}$	$P_o = 5.0\text{ mW}$, FAHM ^{*1}	25	30	35	deg.
Lateral Beam Angle	$\theta_{//}$	$P_o = 5.0\text{ mW}$, FAHM ^{*1}	6	8	10	deg.

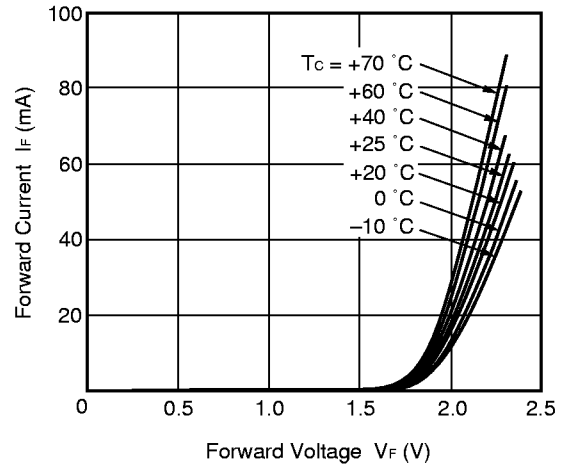
*1 FAHM: Full Angle at Half Maximum

★ TYPICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$, unless otherwise specified)

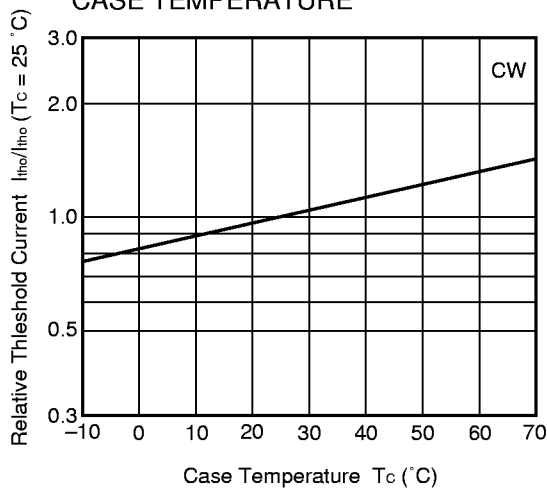
OPTICAL OUTPUT POWER vs.
FORWARD CURRENT



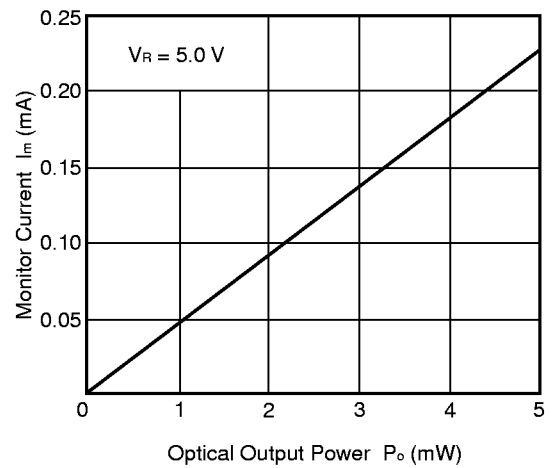
FORWARD CURRENT vs.
FORWARD VOLTAGE



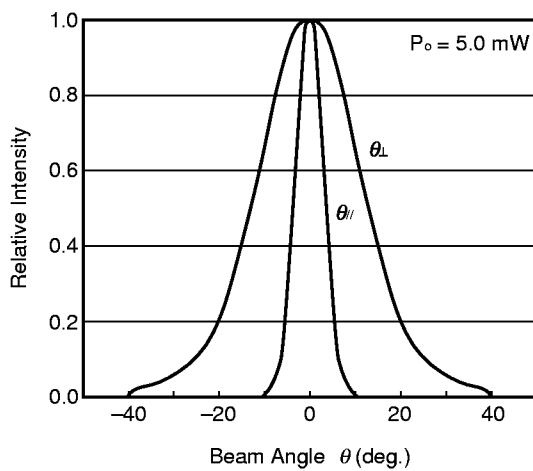
RELATIVE THRESHOLD CURRENT vs.
CASE TEMPERATURE



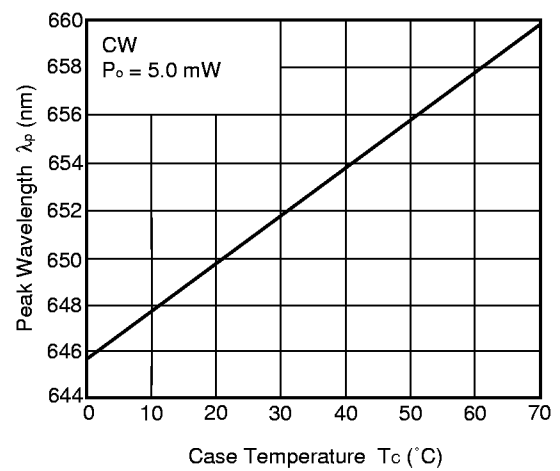
MONITOR CURRENT vs.
OPTICAL OUTPUT POWER

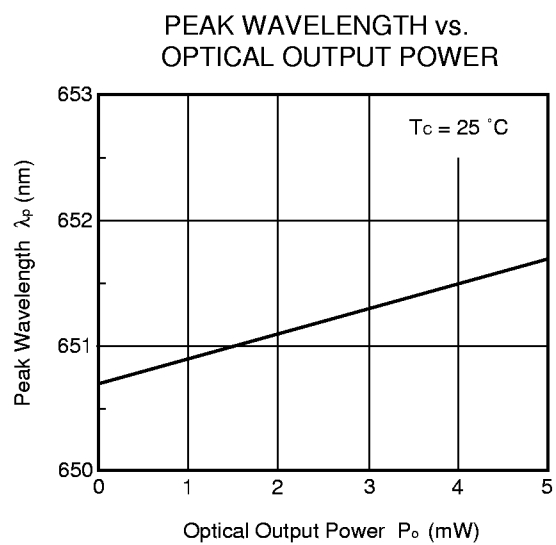
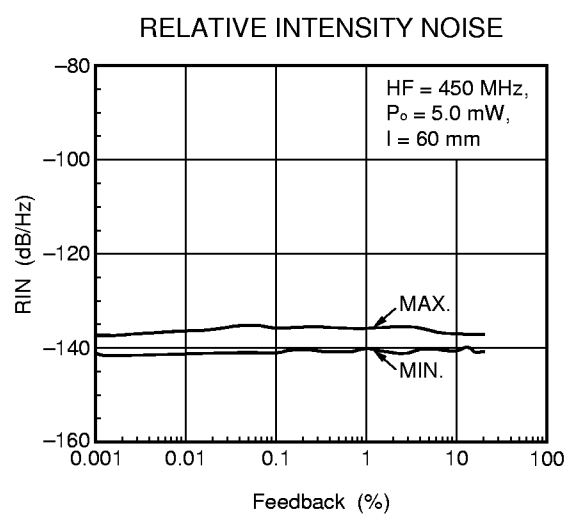


FAR FIELD PATTERN



PEAK WAVELENGTH vs.
CASE TEMPERATURE





★ TEMPERATURE DEPENDENCE OF OPTICAL CHARACTERISTICS

