

LASER DIODE
NDL5003

**1 300 nm OPTICAL FIBER COMMUNICATIONS
InGaAsP DOUBLE HETEROSTRUCTURE LASER DIODE**

DESCRIPTION

NDL5003 is a long wavelength laser diode especially designed for long distance high capacity transmission systems. The DC-PBH (Double Channel Planar Buried Heterostructure) can achieve stable fundamental oscillation in wide temperature range.

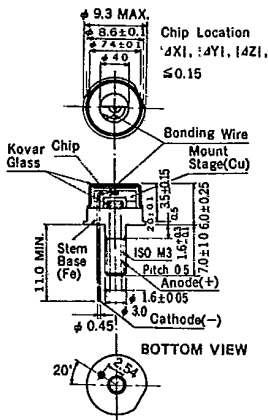
FEATURES

- High output power. $P_O = 8 \text{ mW}$
- Long wavelength. $\lambda_p = 1300 \text{ nm}$
- Low threshold current. $I_{th} = 20 \text{ mA}$
- Narrow vertical angle and wide lateral beam angle.
 $\theta_1 \times \theta_2 = 35^\circ \times 28^\circ$
- Fundamental transverse mode.
- Wide operating temperature range.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ \text{C}$)

Reverse Voltage	V_R	2.0	V
Optical Output Power	P_O	15	mW
Operating Case Temperature	T_C	-40 to +70	$^\circ \text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ \text{C}$

PACKAGE DIMENSIONS
in millimeters



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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Forward Voltage	V_F		1.3		V	$I_F = 30 \text{ mA}$
Threshold Current	I_{th}		20	35	mA	
Optical Output Power	P_O	6.0	8.0		mW	$I_F = I_{th} + 30 \text{ mA}$
Monitor Output Power	P_m	0.5	1.0		mW	$P_O = 6.0 \text{ mW}$
Peak Emission Wavelength	λ_p	1270	1300		nm	$P_O = 6.0 \text{ mW}$
Half Power Spectral Width	$\Delta\lambda$			4.0	nm	$P_O = 6.0 \text{ mW}$
Vertical Beam Angle	θ_1		35		deg.	$P_O = 6.0 \text{ mW}$, FAHM *
Lateral Beam Angle	θ_2		28		deg.	$P_O = 6.0 \text{ mW}$, FAHM *
Rise Time	t_r		0.5	1.0	ns	10-90 %
Fall Time	t_f		0.7	1.0	ns	90-10 %

* FAHM: Full Angle at Half Maximum

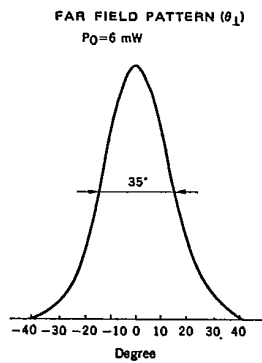
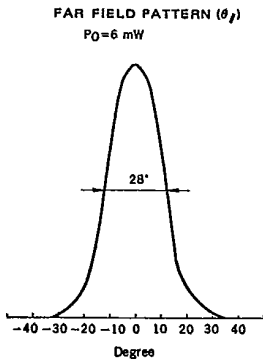
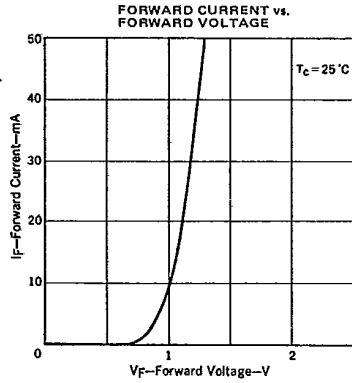
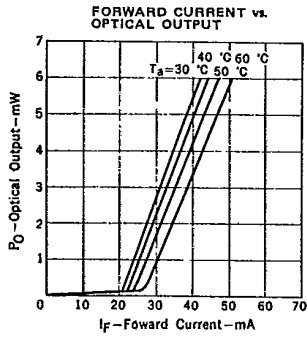
N E C ELECTRONICS INC

T-41-07

ELECTRO-OPTICAL CHARACTERISTICS ($T_a = 60^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Forward Voltage	V_F			1.3	V	$I_F = 30\text{ mA}$
Threshold Current	I_{th}		40	60	mA	
Optical Output Power	P_O	5.0			mW	$I_F = I_{th} + 30\text{ mA}$
Peak Emission Wavelength	λ_p	1275	1315	1350	nm	$P_O = 5.0\text{ mW}$
Monitor Output Power	P_m	300			μW	$P_O = 5.0\text{ mW}$
Half Power Spectral Width	$\Delta\lambda$			4.0	nm	$P_O = 5.0\text{ mW}$
Rise Time	t_r		0.5	1.0	ns	10-90%
Fall Time			0.7	1.0	ns	90-10%

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



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