



NX6314EH Data Sheet

LASER DIODE

1 310 nm InGaAsP MQW-DFB LASER DIODE FOR 1.25 Gb/s FTTH P2P AND 3 Gb/s BTS

R08DS0054EJ0100 Rev.1.00 Jan 19, 2012

DESCRIPTION

The NX6314EH is a 1 310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode with InGaAs monitor PIN-PD.

APPLICATIONS

- 1.25 Gb/s FTTH P2P
- 3 Gb/s BTS

FEATURES

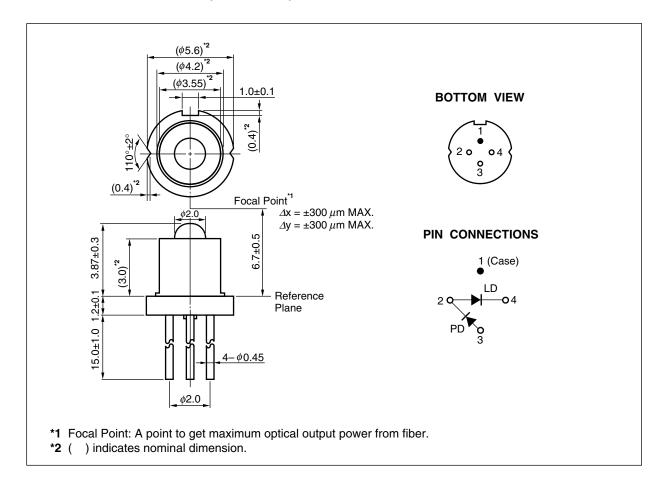
 $\begin{array}{lll} \bullet & \text{Optical output power} & P_{O} = 5.0 \text{ mW} \\ \bullet & \text{Low threshold current} & I_{th} = 10 \text{ mA} \\ \bullet & \text{Differential efficiency} & \eta_{d} = 0.4 \text{ W/A} \\ \bullet & \text{Wide operating temperature range} & T_{C} = -40 \text{ to } +85 ^{\circ}\text{C} \\ \end{array}$

• InGaAs monitor PIN-PD

CAN package φ 5.6 mm
 Focal point 6.7 mm



PACKAGE DIMENSIONS (UNIT: mm)



ORDERING INFORMATION

| Part Number | Package | Pin Connections |
|-------------|------------------------------|-----------------|
| NX6314EHËŒ | 4-pin CAN with ball lens cap | 1 |
| | | 2 LD 0 4 |
| | | PD 3 |

Remarks 1. The color of ball lens cap might be observed differently.

2. The hermetic test will be performed as AQL 1.0%.

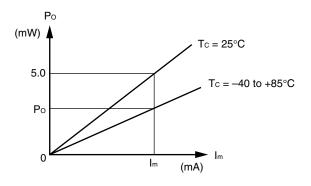
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|-----------------------------------|------------------|--------------|------|
| Optical Output Power | Po | 20 | mW |
| Forward Current of LD | I _F | 150 | mA |
| Reverse Voltage of LD | V_R | 2.0 | V |
| Forward Current of PD | I _F | 10.0 | mA |
| Reverse Voltage of PD | V_R | 15 | V |
| Operating Case Temperature | T _C | -40 to +85 | °C |
| Storage Temperature | T _{stg} | -40 to +85 | °C |
| Lead Soldering Temperature | T _{sld} | 350 (3 sec.) | °C |
| Relative Humidity (noncondensing) | RH | 85 | % |

ELECTRICAL/OPTICAL CHARACTERISTICS (T_c = 25°C, CW, BOL, unless otherwise specified)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|-----------------------------|-----------------|--|-------|------|-------|------|
| Operating Voltage | V _{op} | $P_{O} = 5.0 \text{ mW}, T_{C} = -40 \text{ to } 85^{\circ}\text{C}$ | _ | 1.1 | 1.6 | V |
| Threshold Current | I _{th} | | _ | 10 | 20 | mA |
| | | T _C = -40 to 85°C | _ | 30 | 50 | |
| Differential Efficiency | η_{d} | P _O = 5.0 mW | 0.3 | 0.4 | _ | W/A |
| | | $P_0 = 5.0 \text{ mW}, T_C = -40 \text{ to } 85^{\circ}\text{C}$ | 0.14 | _ | _ | W/A |
| Peak Emission Wavelength | λ_{p} | $P_0 = 5.0 \text{ mW}, T_C = -40 \text{ to } 85^{\circ}\text{C}$ | 1 290 | _ | 1 330 | nm |
| Side Mode Suppression Ratio | SMSR | $I_F = I_{th} + 20 \text{ mA},$ | 30 | _ | _ | dB |
| | | $T_{\rm C}$ = -40 to 85°C | | | | |
| Rise Time | t _r | $I_b = I_{th}$, 20-80% $P_O = 5.0 \text{ mW}$ | _ | 100 | 150 | ps |
| Fall Time | t _f | $I_b = I_{th}$, 80-20% $P_O = 5.0 \text{ mW}$ | _ | 100 | 150 | ps |
| Monitor Current | I _m | $V_R = 1.5 \text{ V}, I_F = I_{th} + 20 \text{ mA},$ | 80 | 250 | 1 000 | μΑ |
| | | T _C = 25°C | | | | |
| Monitor Dark Current | I _D | V _R = 5 V | _ | | 100 | nA |
| Tracking Error *1 | γ | I _m = const. | -1.0 | | 1.0 | dB |
| | | (@ $P_O = 5.0 \text{ mW}, T_C = 25^{\circ}\text{C}$) | | | | |

Note: 1. Tracking Error: γ



$$\gamma = \left| 10 \log \frac{Po}{5.0} \right| [dB]$$

SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



AVOID EXPOSURE-Invisible Laser Radiation is emitted from this aperture

| Warning Laser Beam | A laser beam is emitted from this diode during operation. The laser beam, visible or invisible, directly or indirectly, may cause injury to the eye or loss of eyesight. Do not look directly into the laser beam. Avoid exposure to the laser beam, any reflected or collimated beam. |
|-----------------------|---|
| Caution GaAs Products | This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points. |
| | Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below. |
| | Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials. |
| | Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal. |
| | Do not burn, destroy, cut, crush, or chemically dissolve the product. |
| | Do not lick the product or in any way allow it to enter the mouth. |

Revision History

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| | | Description | |
|------|--------------|-------------|----------------------|
| Rev. | Date | Page | Summary |
| 1.00 | Jan 19, 2012 | _ | First edition issued |