To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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RENESAS

DATA SHEET

Phase-out/Discontinued

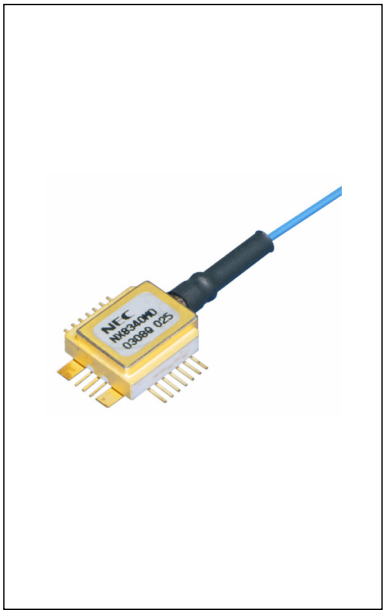
LASER DIODE

NX8340MD-CC

1 310 nm MQW-DFB LASER DIODE MODULE WITH DRIVER FOR 10 Gb/s APPLICATIONS

DESCRIPTION

★ The NX8340MD-CC is a 1 310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode module with an internal driver IC. It is capable of transmitting up to 12 km standard single mode fiber (dispersion: 40 ps/nm) for 10 Gb/s applications.



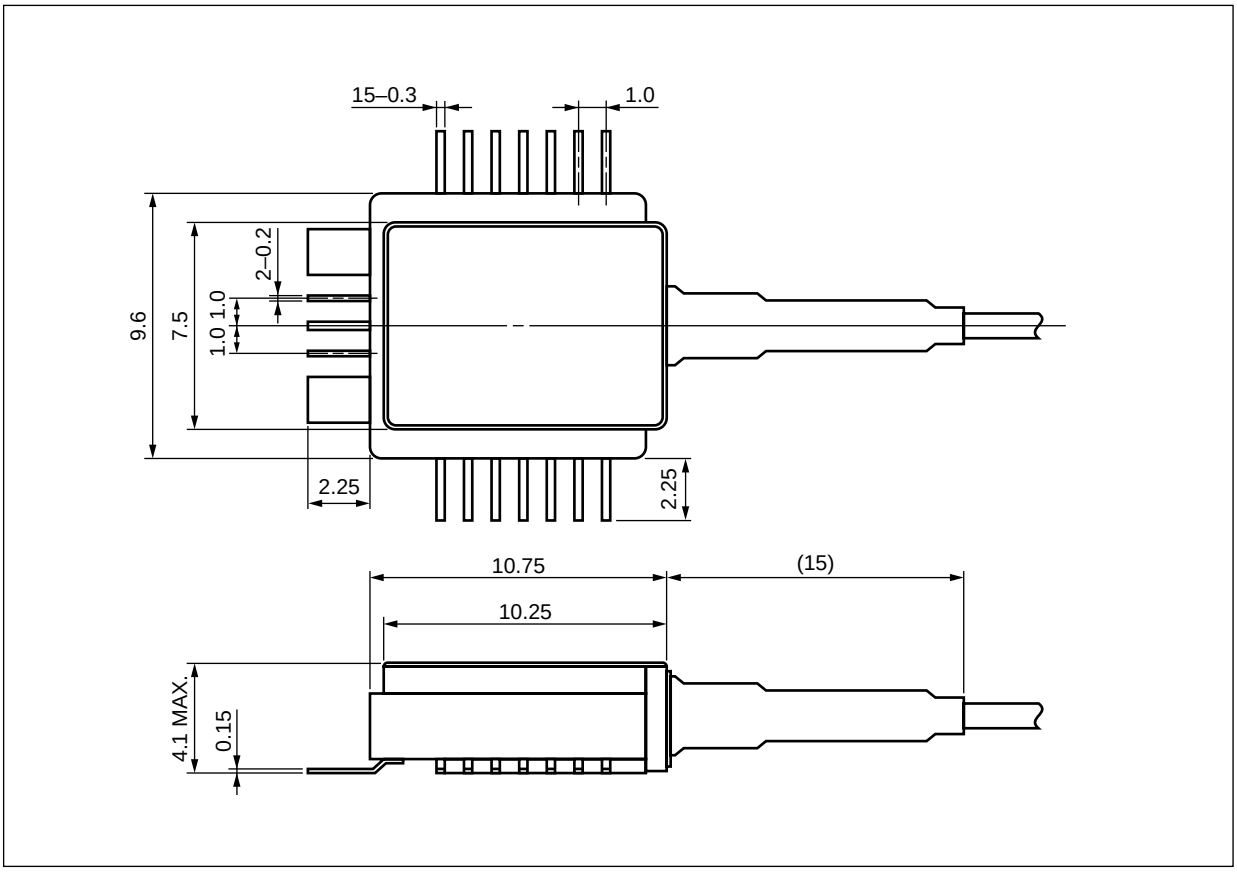
FEATURES

- AlGaInAs BH DFB-LD
- Internal driver IC
- Up to 12 km transmission 10 Gb/s (dispersion: 40 ps/nm)
- 19-pin SMT package

Document No. PL10457EJ02V0DS (2nd edition)
Date Published December 2004 CP(K)
Printed in Japan

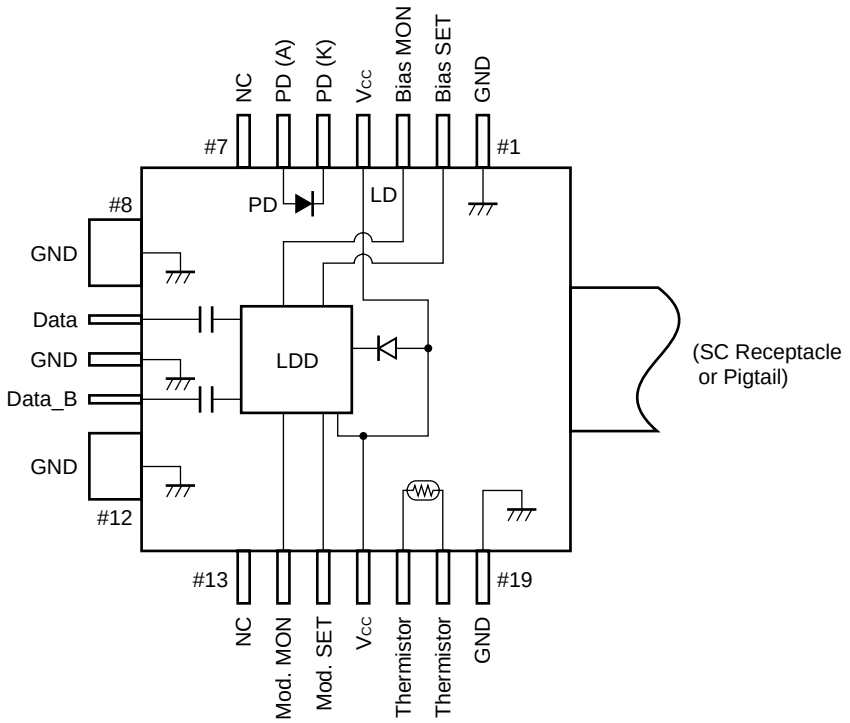
The mark ★ shows major revised points.

★ **PACKAGE DIMENSIONS (UNIT : mm)**



PIN CONNECTIONS

TOP VIEW



Pin No.	Function	Pin No.	Function	Pin No.	Function
1	Case GND	8	Case GND	13	NC
2	Vb	9	D_{IN}	14	Vmm
3	Vbm	10	Case GND	15	Vm
4	V_{CC}	11	$D_{IN}B$	16	V_{CC}
5	PD Cathode	12	Case GND	17	Thermistor
6	PD Anode			18	Thermistor
7	NC			19	Case GND

OPTICAL FIBER CHARACTERISTICS

Parameter	Specification	Unit
Mode Field Diameter	9.5±1.0	μm
Cladding Diameter	125±2	μm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Concentricity	1.6	%
Tight Buffer Diameter	900±100	μm
Cut-off Wavelength	< 1 270	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	900 MIN.	mm
Flammability	UL1581 VW-1	

★ ORDERING INFORMATION

Part Number	Available Connector/Receptacle
NX8340MD-CC	With SC-UPC Connector

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Storage Temperature	T_{stg}	–40 to +85	°C
Operating Case Temperature	T_C	0 to +75	°C
Forward Current of PD	I_{FPD}	10	mA
Reverse Voltage of PD	V_{RPD}	20	V
Driver Power Supply Voltage	V_{CC}	–0.5 to +6.0	V
Data Input Voltage (DC coupled, single)	D_{IN}, D_{INB}	V_{CC}–1.2 to V_{CC}+0.5	V
Bias Monitor Voltage	Vbm	–0.5 to V_{CC}+0.5	V
Modulation Monitor Voltage	Vmm	–0.5 to V_{CC}+0.5	V
Bias Control Voltage	Vb	–0.5 to +2.6	V
Modulation Control Voltage	Vm	–0.5 to +1.4	V
Lead Soldering Temperature	T_{sld}	350 (3 sec.)	°C

ELECTRO-OPTICAL CHARACTERISTICS (T_C = 0 to +75°C, BOL, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Optical Output Power	P_{op}	***1**	–4		–1	dBm
Peak Emission Wavelength	λ_p	CW, $P_f = P_{op}$	1 290		1 330	nm
Side Mode Suppression Ratio	SMSR	CW, $P_f = P_{op}$	30			dB
Monitor Current	I_m	$P_f = P_{op}$, V_R = 1.5 V ***1**	50			μA
Monitor Dark Current	I_D	V_R = 1.5 V			500	nA
Tracking Error	γ	I_m = const. ($P_f = P_{op}$)	–1.0		1.0	dB
Driver Power Supply Voltage	V_{CC}	***1**	4.75	5.0	5.5	V
Driver Power Supply Current	I_{CC}	***1**			250	mA
Bias Set Voltage	Vb	***1**	1.7		2.15	V
Modulation Set Voltage	Vm	***1**	1.0		1.2	V
Data Input Voltage	D_{IN}, $D_{IN}B$	Differential input, AC-coupled	0.2		1.6	V
Thermistor Resistance	R	T_C = 25°C, Non-operation	9.5	10.0	10.5	kΩ
B Constant	B		3 350	3 450	3 550	K
Eye Mask Margin	MASK	Ex = 7 dB, Back to back ***1**	5			%
Extinction Ratio	ER	***1**	6			dB
Dispersion Penalty	DP	BER = 10^{-12}, 40 ps/nm, SMF ***1**			1	dB
Connector Repeatability (Applicable to SC receptacle)	–	With master pigtail	–1.0		1.0	dB

***1** 9.95/10.66 Gb/s, PRBS 2^{31}–1, NRZ, Duty Cycle = 50%

REFERENCE

Document Name	Document No.
OPTICAL SEMICONDUCTOR DEVICES FOR FIBEROPTIC COMMUNICATIONS SELECTION GUIDE	PL10161E
Opto-Electronics Devices Pamphlet	PX10160E

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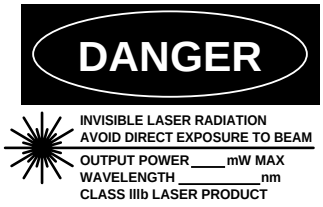
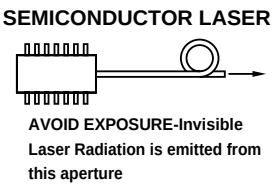
M8E 00.4-0110

SAFETY INFORMATION ON THIS PRODUCT





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. 1. 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. 2. 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.
Caution Optical Fiber	A glass-fiber is attached on the product. Handle with care. • When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.

▶**For further information, please contact**

NEC Compound Semiconductor Devices, Ltd. **http://www.ncsd.necel.com/**
E-mail: salesinfo@ml.ncsd.necel.com (sales and general)
techinfo@ml.ncsd.necel.com (technical)
Sales Division TEL: +81-44-435-1588 FAX: +81-44-435-1579

NEC Compound Semiconductor Devices Hong Kong Limited
E-mail: ncsd-hk@elhk.nec.com.hk (sales, technical and general)
Hong Kong Head Office TEL: +852-3107-7303 FAX: +852-3107-7309
Taipei Branch Office TEL: +886-2-8712-0478 FAX: +886-2-2545-3859
Korea Branch Office TEL: +82-2-558-2120 FAX: +82-2-558-5209

NEC Electronics (Europe) GmbH **http://www.ee.nec.de/**
TEL: +49-211-6503-0 FAX: +49-211-6503-1327

California Eastern Laboratories, Inc. **http://www.cel.com/**
TEL: +1-408-988-3500 FAX: +1-408-988-0279