

**CEL**

**NEC's 1310 nm AlGaInAs  
MQW-DFB LASER DIODE MODULE  
WITH DRIVER IN SMT PACKAGE  
FOR 10 GB/s APPLICATIONS**

**NX8340MD-CC****FEATURES**

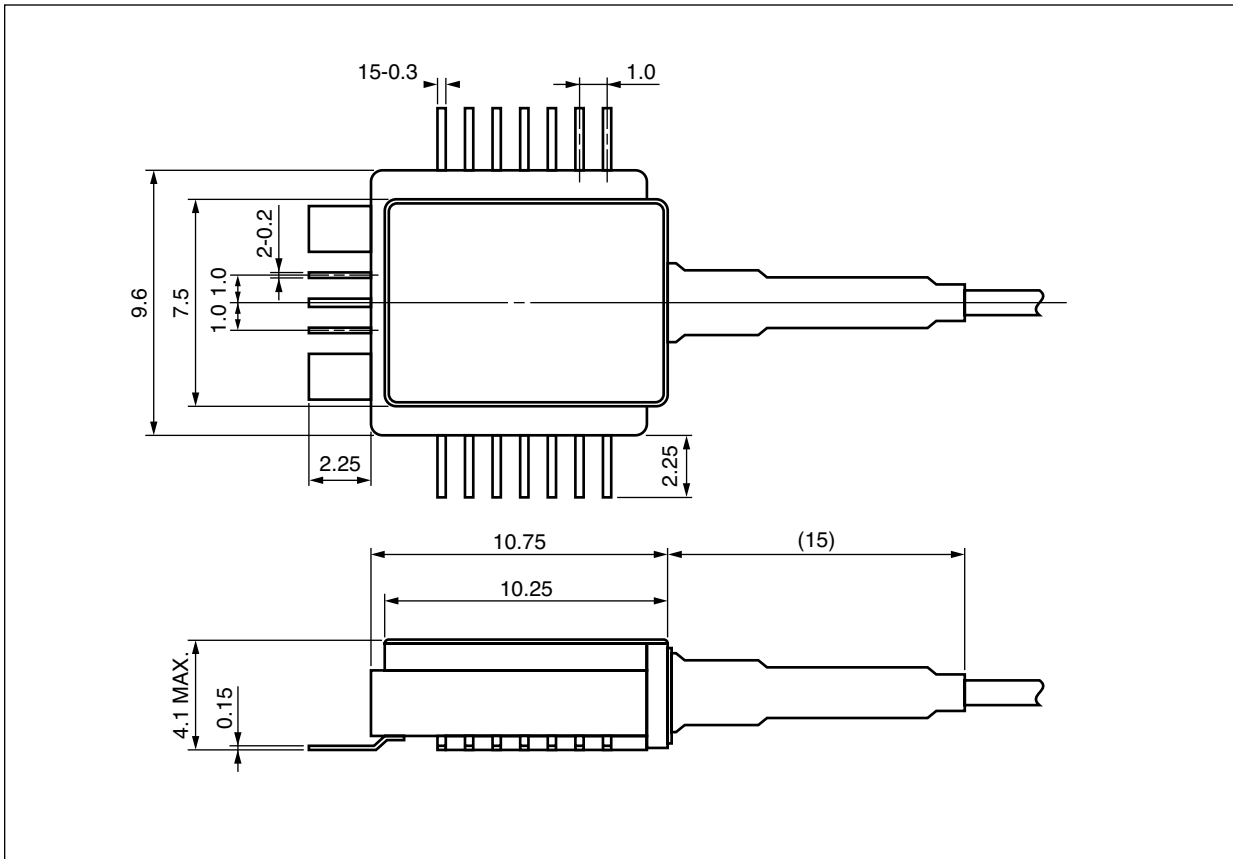
- AlGaInAs BH DFB-LD
- INTERNAL DRIVER IC
- UP TO 12 KM TRANSMISSION 10 GB/S  
Dispersion: 40 ps/nm
- 19-PIN SMT PACKAGE

**DESCRIPTION**

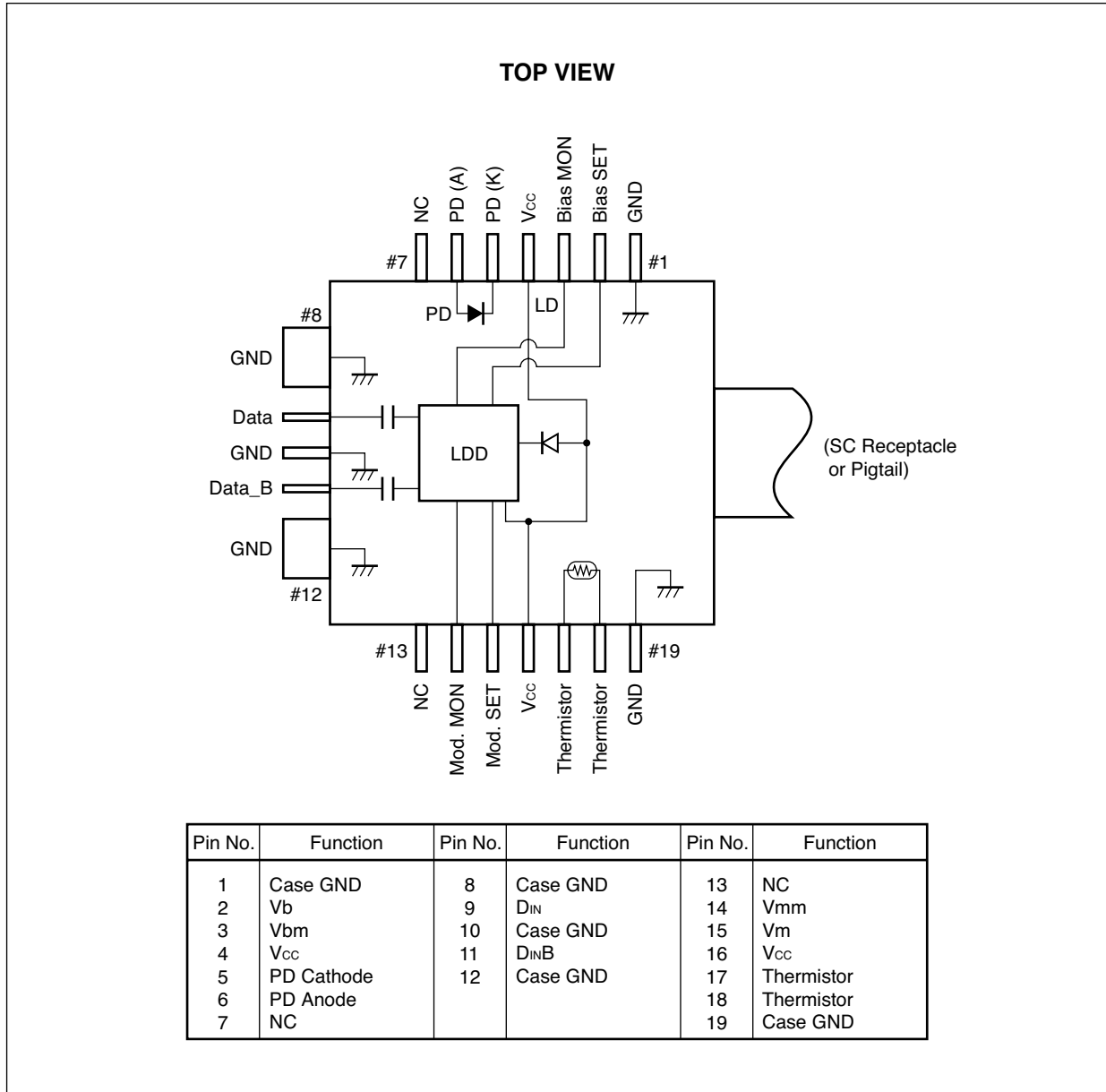
NEC's NX8340MD-CC is a 1310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode module with an internal driver IC. It is capable of transmitting up to 12 km standard single mode fiber (dispersion: 40 ps/nm) for 10 Gb/s applications.

California Eastern Laboratories

PACKAGE DIMENSIONS (UNIT : mm)



**PIN CONNECTIONS**



**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	$V_{bm}$	-0.5 to $V_{CC}+0.5$	V
Modulation Monitor Voltage	$V_{mm}$	-0.5 to $V_{CC}+0.5$	V
Bias Control Voltage	$V_b$	-0.5 to +2.6	V
Modulation Control Voltage	$V_m$	-0.5 to +1.4	V
Lead Soldering Temperature	$T_{slid}$	350 (3 sec.)	°C

**ELECTRO-OPTICAL CHARACTERISTICS** (T<sub>C</sub>= 0 to +75°C, BOL, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Optical Output Power	P <sub>op</sub>	*1	-4		-1	dBm
Peak Emission Wavelength	λ <sub>p</sub>	CW, P <sub>f</sub> = P <sub>op</sub>	1 290		1 330	nm
Side Mode Suppression Ratio	SMSR	CW, P <sub>f</sub> = P <sub>op</sub>	30			dB
Monitor Current	I <sub>m</sub>	P <sub>f</sub> = P <sub>op</sub> , V <sub>R</sub> = 1.5 V	*1	50		μA
Monitor Dark Current	I <sub>d</sub>	V <sub>R</sub> = 1.5 V			500	nA
Tracking Error	γ	I <sub>m</sub> = const. (P <sub>f</sub> = P <sub>op</sub> )	-1.0		1.0	dB
Driver Power Supply Voltage	V <sub>CC</sub>	*1	4.75	5.0	5.5	V
Driver Power Supply Current	I <sub>CC</sub>	*1			250	mA
Bias Set Voltage	V <sub>b</sub>	*1	1.7		2.15	V
Modulation Set Voltage	V <sub>m</sub>	*1	1.0		1.2	V
Data Input Voltage	D <sub>IN</sub> , D <sub>INB</sub>	Differential input, AC-coupled	0.2		1.6	V
Thermistor Resistance	R	T <sub>C</sub> = 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 <sup>-12</sup> , 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<sup>31</sup>-1, NRZ, Duty Cycle = 50%

**Life Support Applications**

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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