

1310 nm InGaAsP MQW-FP LASER DIODE COAXIAL MODULE FOR FIBEROPTIC COMMUNICATIONS

NX7304BG-CC

FEATURES

- **CENTER WAVELENGTH:**
 $\lambda_c = 1310 \text{ nm}$
- **HIGH OUTPUT POWER FROM FIBER:**
 $P_F = 2.0 \text{ mW MIN}$
- **LOW THRESHOLD CURRENT:**
 $I_{TH} = 10 \text{ mA}$
- **HIGH CUT-OFF FREQUENCY:**
 $f_c = 2.0 \text{ GHz}$
- **InGaAs MONITOR PIN-PD**
- **WIDE OPERATING TEMPERATURE RANGE:**
 $T_c = -40 \text{ to } +85^\circ\text{C}$
- **WITH SC-UPC CONNECTOR**
- **BASED ON TELCORDIA RELIABILITY**

DESCRIPTION

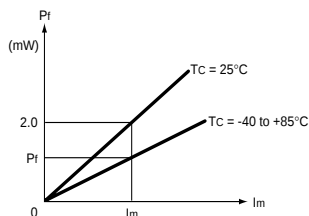
The NX7304BG-CC is a 1310 nm Multiple Quantum Well (MQW) structured Fabry-Perot (FP) laser diode coaxial module with single mode fiber. This module is ideal as a light source for ITU-T recommended Synchronous Digital Hierarchy (SDH) systems, for fiberoptic communications such as SONET and for digital transmission.

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

PART NUMBER PACKAGE OUTLINE			NX7304BG-CC		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
V_{OP}	Operating Voltage, $P_F = 2.0 \text{ mW}$	V		1.1	1.3
I_{TH}	Threshold Current, $T_c = 85^\circ\text{C}$	mA		10	25
				25	50
I_{MOD}	Modulation Current, $P_F = 2.0 \text{ mW}$	mA		15	20
η_D	Differential Efficiency, $T_c = 85^\circ\text{C}$	W/A	0.100	0.150	
			0.075	0.100	
λ_c	Center Wavelength, $P_F = 2.0 \text{ mW}$, RMS (-20 dB) $T_c = -40 \text{ to } +85^\circ\text{C}$	nm	1290	1310	1330
			1260		1360
$\Delta\lambda/\Delta T$	Temperature Dependence of Center Emission Wavelength, $T_c = -40 \text{ to } +85^\circ\text{C}$	nm/ $^\circ\text{C}$		0.4	0.5
σ	Spectral Width, $P_F = 2.0 \text{ mW}$, RMS (-20 dB) $T_c = 85^\circ\text{C}$	nm		1.3	2.5
				1.5	4.0
t_r	Rise Time, 10 to 90%	ns		0.2	0.5
t_f	Fall Time, 90 to 10%	ns		0.3	0.5
I_m	Monitor Current, $V_R = 5 \text{ V}$, $P_F = 2.0 \text{ mW}$	μA	100	700	
I_D	Monitor Dark Current, $V_R = 5 \text{ V}$	nA		0.1	10
γ^L	Tracking Error, $I_m = \text{const.}$, $T_c = -40 \text{ to } +85^\circ\text{C}$	dB			1.0

Note:

1. $\gamma = 10 \log \frac{P_F}{2.0 \text{ mW}}$



ABSOLUTE MAXIMUM RATINGS¹

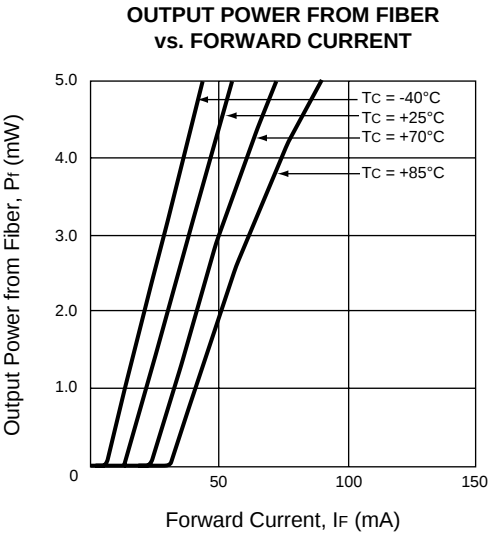
(T_C = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
I _F	Forward Current of LD	mA	150
V _R	Reverse Voltage of LD	V	2.0
I _F	Forward Current of PD	mA	10
V _R	Reverse Voltage of PD	V	20
T _C	Operating Case Temperature	°C	-40 to +85
T _{STG}	Storage Temperature	°C	-40 to +85
T _{SLD}	Lead Soldering Temperature (10 s)	°C	260
RH	Relative Humidity (noncondensing)	%	85

Note:

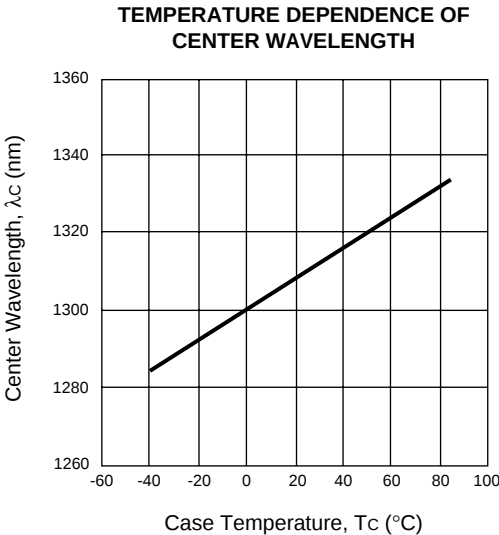
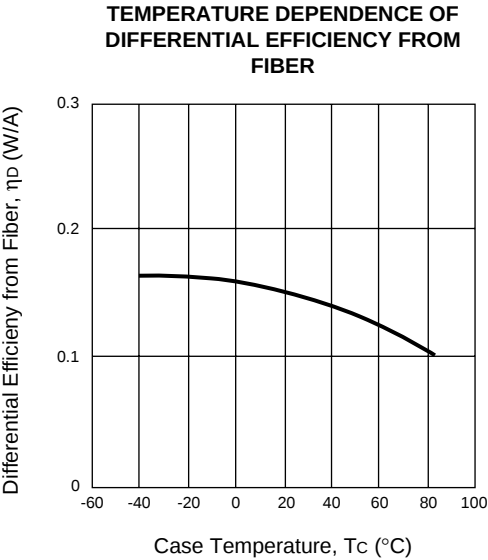
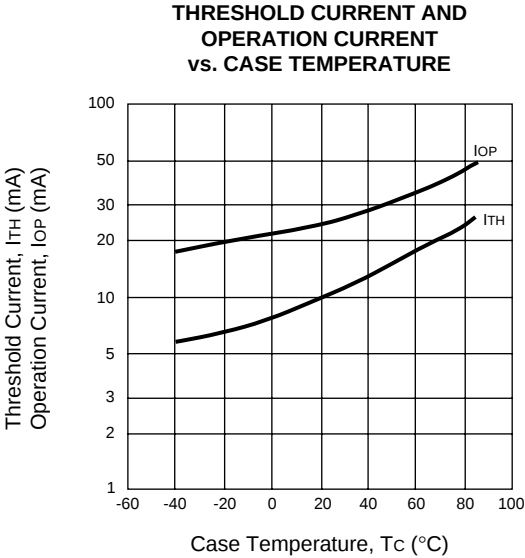
1. Operation in excess of any one of these parameters may result in permanent damage.

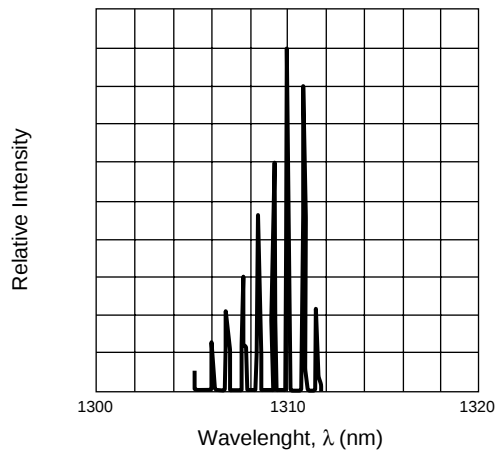
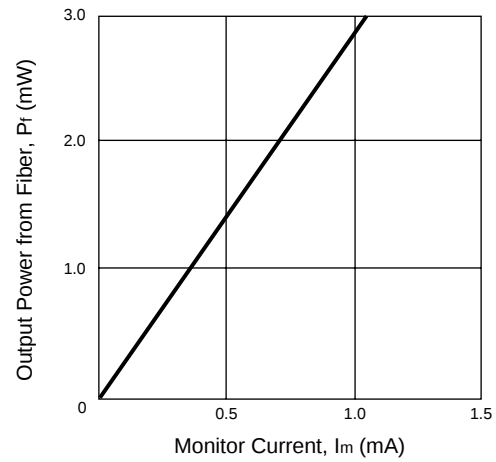
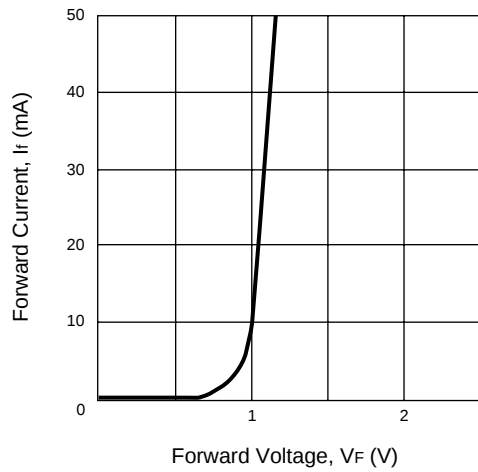
TYPICAL PERFORMANCE CURVES (T_C = -40 to +85°C)



ORDERING INFORMATION

PART NUMBER	AVAILABLE CONNECTOR	DESCRIPTION
NDL7304BG-CC	With SC-UPC Connector	Flat Mount Flange



TYPICAL PERFORMANCE CURVES ($T_C = 25^\circ\text{C}$)**LONGITUDINAL MODE FROM FIBER****OUTPUT POWER FROM FIBER
vs. MONITOR CURRENT****FORWARD CURRENT
vs. FORWARD VOLTAGE**



PARAMETER	UNITS	SPECIFICATION
Mode Field Diameter	μm	9.5±1
Cladding Diameter	μm	125±2
Maximum Cladding Noncircularity	%	2
Maximum Core/Cladding Concentricity	%	1.6
Outer Diameter	mm	0.9±0.1
Cut-off Wavelength	nm	1100 to 1270
Minimum Fiber Bending Radius	mm	30
Fiber Length	mm	500±50
Flammability	UL 1581 VW-1	

