

**1 550 nm InGaAsP MQW-FP LASER DIODE  
COAXIAL MODULE WITH MONITOR PD FOR OTDR APPLICATION****DESCRIPTION**

The NX7535 Series is a 1 550 nm Multiple Quantum Well (MQW) structured Fabry-Perot (FP) laser diode coaxial module with single mode fiber. This module is specified to operate under pulsed condition and designed for light source of Optical Time Domain Reflectometer (OTDR).

**FEATURES**

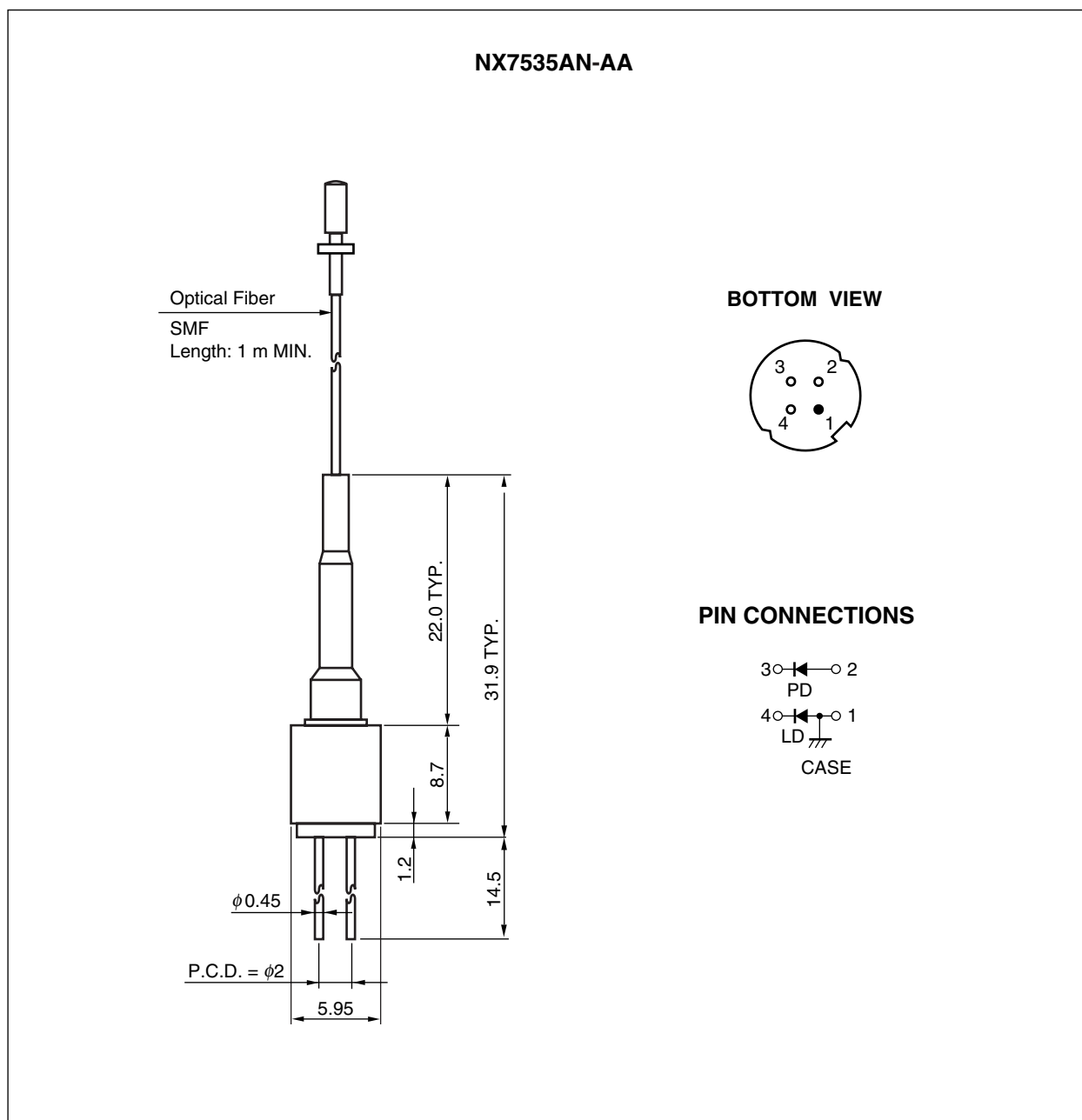
- High output power  $P_f = 30 \text{ mW} @ I_{FP} = 200 \text{ mA}^{*1}$
- Long wavelength  $\lambda_c = 1 550 \text{ nm}$
- Built-in monitor PD

\*1 Pulse Conditions: Pulse width (PW) = 10  $\mu\text{s}$ , Duty = 1%

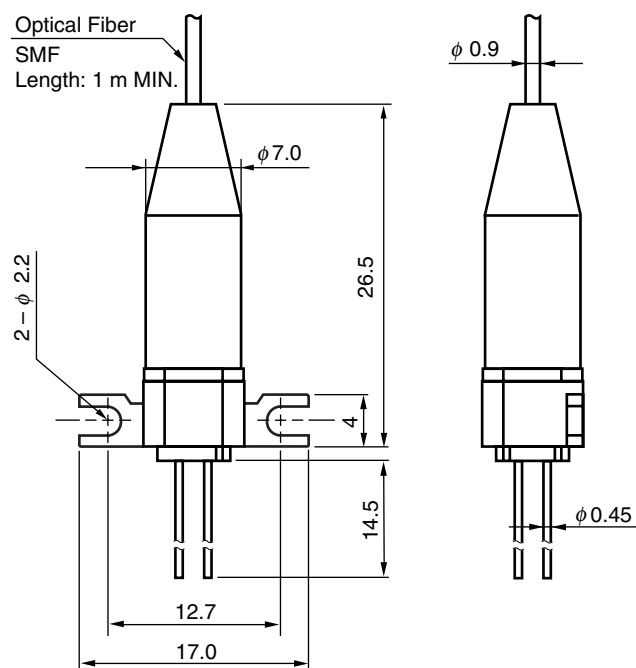
**NX7535AN-AA****NX7535BN-AA**

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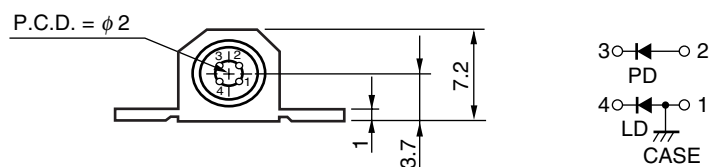
PACKAGE DIMENSIONS (UNIT: mm)



NX7535BN-AA

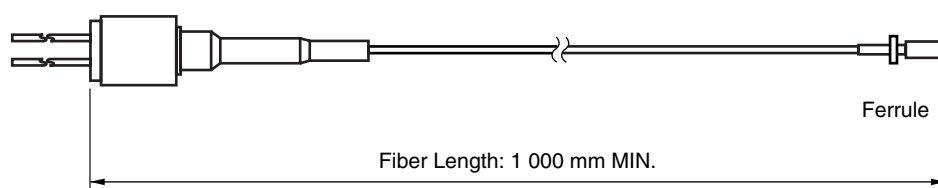


PIN CONNECTIONS



# OPTICAL FIBER CHARACTERISTICS

Parameter	Specification	Unit
Mode Field Diameter	9.5±1	μm
Cladding Diameter	125±2	μm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Concentricity	1.6	%
Outer Diameter	0.9±0.1	mm
Cut-off Wavelength	1 140 to 1 280	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1 000 MIN.	mm



## ORDERING INFORMATION

Part Number	Flange Type
NX7535AN-AA	without flange
NX7535BN-AA	flat mount flange

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current <sup>*1</sup>	$I_{FP}$	300	mA
Reverse Voltage	$V_R$	2.0	V
Reverse Voltage (monitor PD)	$V_{RM}$	10	V
Reverse Current (monitor PD)	$I_{FPM}$	2.0	mA
Operating Case Temperature	$T_C$	0 to +60	°C
Storage Temperature	$T_{stg}$	-40 to +85	°C
Lead Soldering Temperature	$T_{sld}$	350 (3 sec.)	°C
Relative Humidity (noncondensing)	RH	85	%

\*1 Pulse Condition: Pulse Width (PW) = 10  $\mu$ s, Duty = 1%

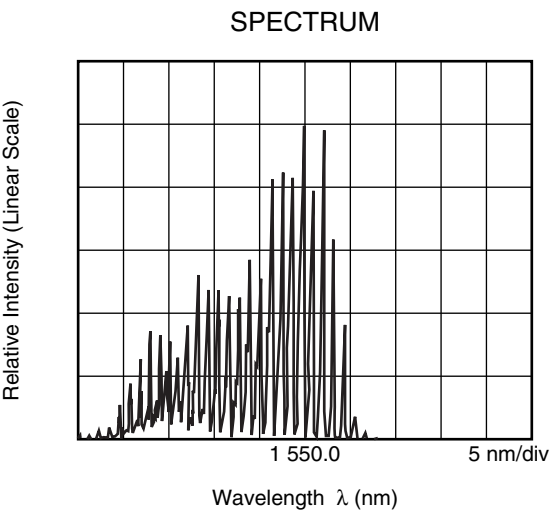
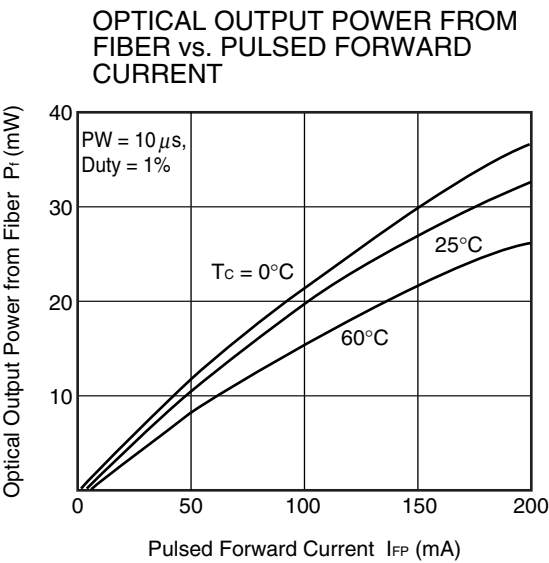
## ELECTRO-OPTICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	$V_{FP}$	$I_{FP} = 200$ mA, PW = 10 $\mu$ s, Duty = 1%			3.5	V
Threshold Current	$I_{th}$			5	25	mA
Optical Output Power from Fiber	$P_f$	$I_{FP} = 200$ mA, PW = 10 $\mu$ s, Duty = 1%	15	30		mW
Center Wavelength	$\lambda_C$	RMS (-20 dB), $I_{FP} = 200$ mA, PW = 10 $\mu$ s, Duty = 1%	1 530	1 550	1 570	nm
Spectral Width	$\sigma$	RMS (-20 dB), $I_{FP} = 200$ mA, PW = 10 $\mu$ s, Duty = 1%			10.0	nm
Rise Time	$t_r$	10-90%			2.0	ns
Fall Time	$t_f$	90-10%			2.0	ns
Forward Current (CW)	$I_{fcw}$	$P_{fcw} = 2$ mW		15		mA
Monitor Current	$I_m$	$P_{fcw} = 2$ mW, $V_{RM} = 2$ V	0.05		2	mA

**ELECTRO-OPTICAL CHARACTERISTICS (T<sub>c</sub> = 0 to +60°C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 200 mA, PW = 10 μs, Duty = 1%	7.5			mW
Center Wavelength	λ <sub>c</sub>	RMS (−20 dB), I <sub>FP</sub> = 200 mA, PW = 10 μs, Duty = 1%	1 514		1 595	nm
Spectral Width	σ	RMS (−20 dB), I <sub>FP</sub> = 200 mA, PW = 10 μs, Duty = 1%			10	nm

TYPICAL CHARACTERISTICS (T<sub>c</sub> = 25°C, unless otherwise specified)



**Remark** The graphs indicate nominal characteristics.

**REFERENCE**

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E

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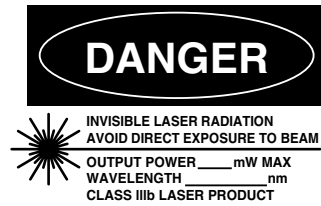
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(Note)

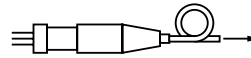
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M8E0904E

# SAFETY INFORMATION ON THIS PRODUCT



## SEMICONDUCTOR LASER



**AVOID EXPOSURE-Invisible**  
Laser Radiation is emitted from  
this aperture

<div>Warning</div> <div>Laser Beam</div>	<p>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.</p> <ul style="list-style-type: none"> <li>• Do not look directly into the laser beam.</li> <li>• Avoid exposure to the laser beam, any reflected or collimated beam.</li> </ul>
<div>Caution</div> <div>GaAs Products</div>	<p>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.</p> <ul style="list-style-type: none"> <li>• 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. <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol> </li> <li>• Do not burn, destroy, cut, crush, or chemically dissolve the product.</li> <li>• Do not lick the product or in any way allow it to enter the mouth.</li> </ul>
<div>Caution</div> <div>Optical Fiber</div>	<p>A glass-fiber is attached on the product. Handle with care.</p> <ul style="list-style-type: none"> <li>• When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.</li> </ul>