

# NX7337AF-AA

LASER DIODE

R08DS0149EJ0100

Rev.1.00

1 310 nm InGaAsP MQW-FP LASER DIODE COAXIAL MODULE FOR OTDR APPLICATION

Mar 15, 2019

## DESCRIPTION

The NX7337AF-AA is a 1 310 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  $P_r = 180 \text{ mW} @ I_{FP} = 1\,000 \text{ mA}^{*1}$
- Long wavelength  $\lambda_c = 1\,310 \text{ nm}$

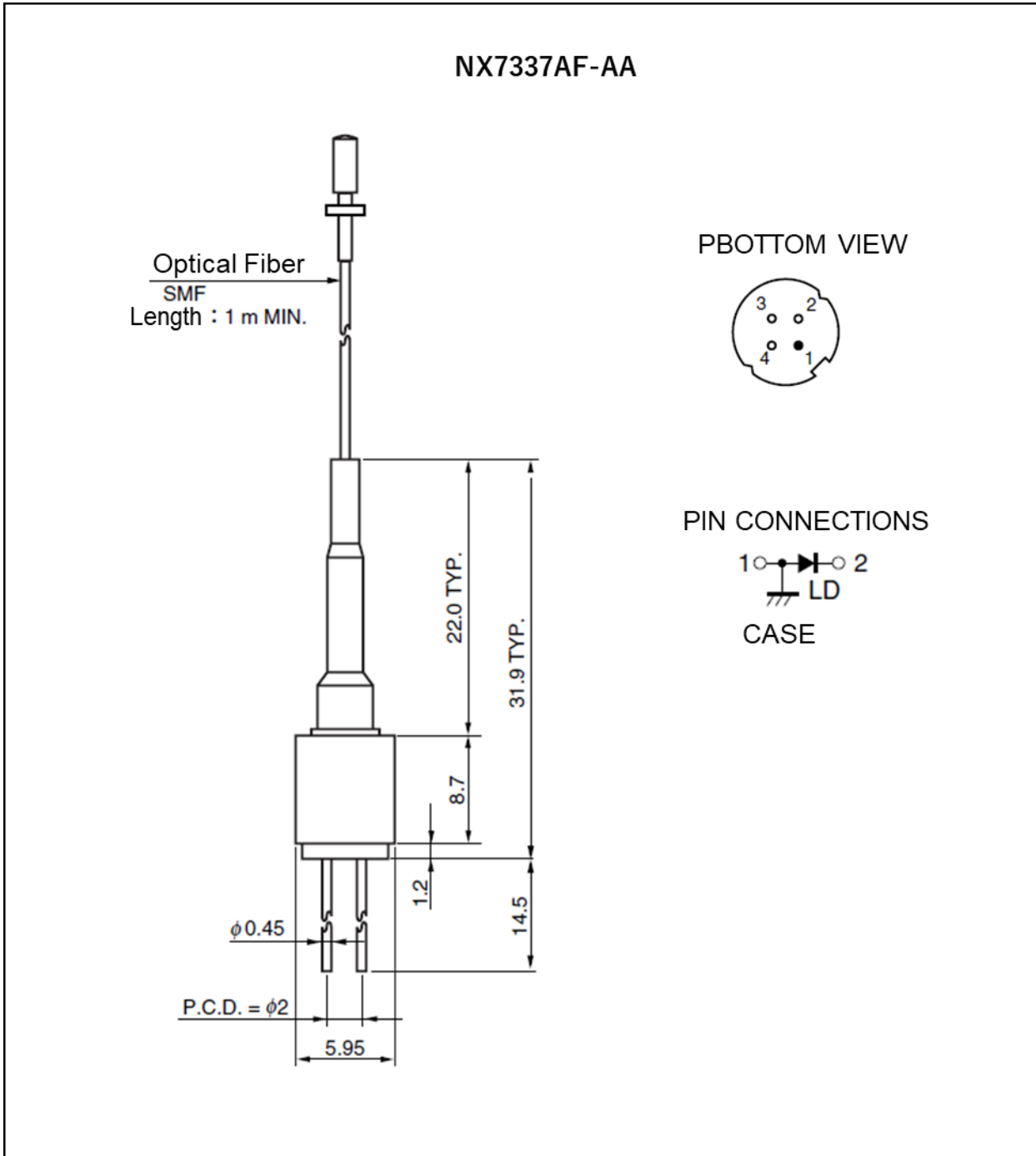
\*1 Pulse Conditions: Pulse width (PW) = 10  $\mu\text{s}$ , Duty = 1%



The mark <R> shows major revised points.

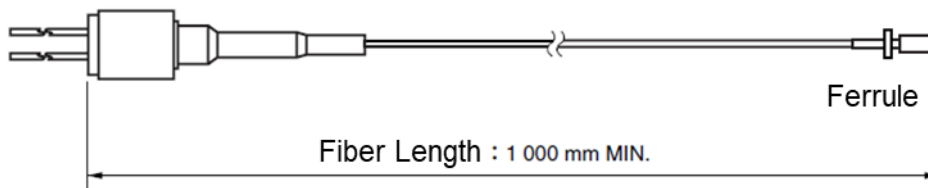
The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

PACKAGE DIMENSIONS (UNIT: mm)



**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
NX7337AF-AA-AZ	unflanged type

**ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25°C, unless otherwise specified)**

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current*1	I <sub>FP</sub>	1.2	A
Reverse Voltage	V <sub>R</sub>	2.0	V
Operating Case Temperature	T <sub>c</sub>	-20 to +60	°C
Storage Temperature	T <sub>stg</sub>	-40 to +85	°C
Lead Soldering Temperature	T <sub>slid</sub>	350 (3 sec.)	°C
Relative Humidity (noncondensing)	RH	85	%

\*1 Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1%

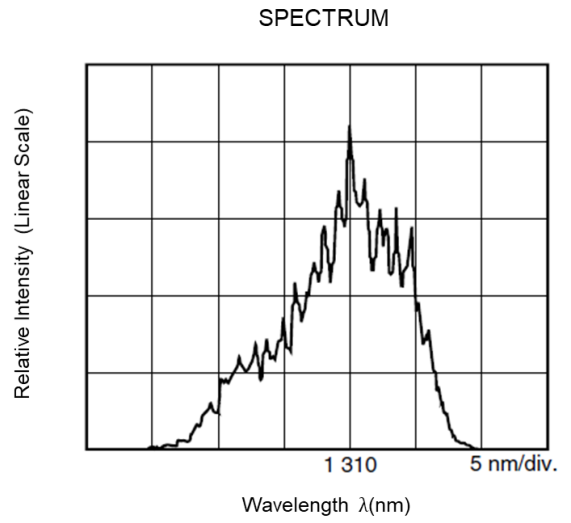
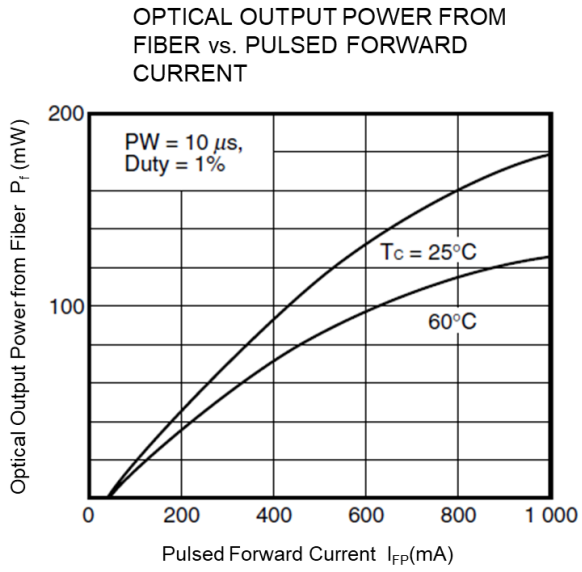
**ELECTRO-OPTICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V <sub>FP</sub>	I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%		2.5	4.0	V
Threshold Current	I <sub>th</sub>			35	65	mA
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	130	180		mW
Center Wavelength	λ <sub>c</sub>	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	1 290	1 310	1 330	nm
Spectral Width	σ	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%		4.5	10.0	nm
Rise Time	t <sub>r</sub>	10-90%			2.0	ns
Fall Time	t <sub>f</sub>	90-10%			2.0	ns

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I <sub>th</sub>				80	mA
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	75			mW
Center Wavelength	λ <sub>c</sub>	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	1 280		1 342.5	nm
Temperature Dependency of Center Wavelength	Δλ/ΔT			0.35		nm/°C
Spectral Width	σ	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%			10	nm

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



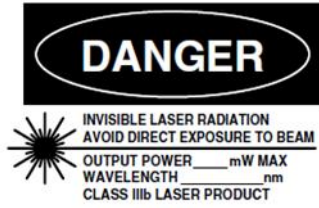
**Remark** The graphs indicate nominal characteristics.

**REFERENCE**

Document Name	Document No.
Opto-Electronics Devices Pamphlet* <sup>1</sup>	PX10160E

\*1 Published by the former NEC Electronics Corporation.

**SAFETY INFORMATION ON THIS PRODUCT**



**SEMICONDUCTOR LASER**



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

<p><b>Warning</b> Laser Beam</p>	<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>
<p><b>Caution</b> GaAs Products</p>	<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>
<p><b>Caution</b> Optical Fiber</p>	<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>

<b>Revision History</b>	<b>NX7337AF-AA Data Sheet</b>
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<b>Rev.</b>	<b>Date</b>	<b>Description</b>	
		<b>Page</b>	<b>Summary</b>
1.00	Mar 15, 2019	-	New document

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**Renesas Electronics America Inc.**  
1001 Murphy Ranch Road, Milpitas, CA 95035, U.S.A.  
Tel: +1-408-432-8888, Fax: +1-408-434-5351

**Renesas Electronics Canada Limited**  
9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3  
Tel: +1-905-237-2004

**Renesas Electronics Europe Limited**  
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K  
Tel: +44-1628-651-700

**Renesas Electronics Europe GmbH**  
Arcadiastrasse 10, 40472 Düsseldorf, Germany  
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

**Renesas Electronics (China) Co., Ltd.**  
Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China  
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

**Renesas Electronics (Shanghai) Co., Ltd.**  
Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, 200333 P. R. China  
Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

**Renesas Electronics Hong Kong Limited**  
Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
Tel: +852-2265-6688, Fax: +852 2886-9022

**Renesas Electronics Taiwan Co., Ltd.**  
13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan  
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

**Renesas Electronics Singapore Pte. Ltd.**  
80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949  
Tel: +65-6213-0200, Fax: +65-6213-0300

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Unit 1207, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia  
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

**Renesas Electronics India Pvt. Ltd.**  
No.777C, 100 Feet Road, HAL 2nd Stage, Indiranagar, Bangalore 560 038, India  
Tel: +91-80-67208700, Fax: +91-80-67208777

**Renesas Electronics Korea Co., Ltd.**  
17F, KAMCO Yangjae Tower, 262, Gangnam-daero, Gangnam-gu, Seoul, 06265 Korea  
Tel: +82-2-558-3737, Fax: +82-2-558-5338