

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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1 625 nm InGaAsP MQW-FP LASER DIODE  
COAXIAL MODULE FOR OTDR APPLICATION

## DESCRIPTION

The NX7639BB-AA is a 1 625 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

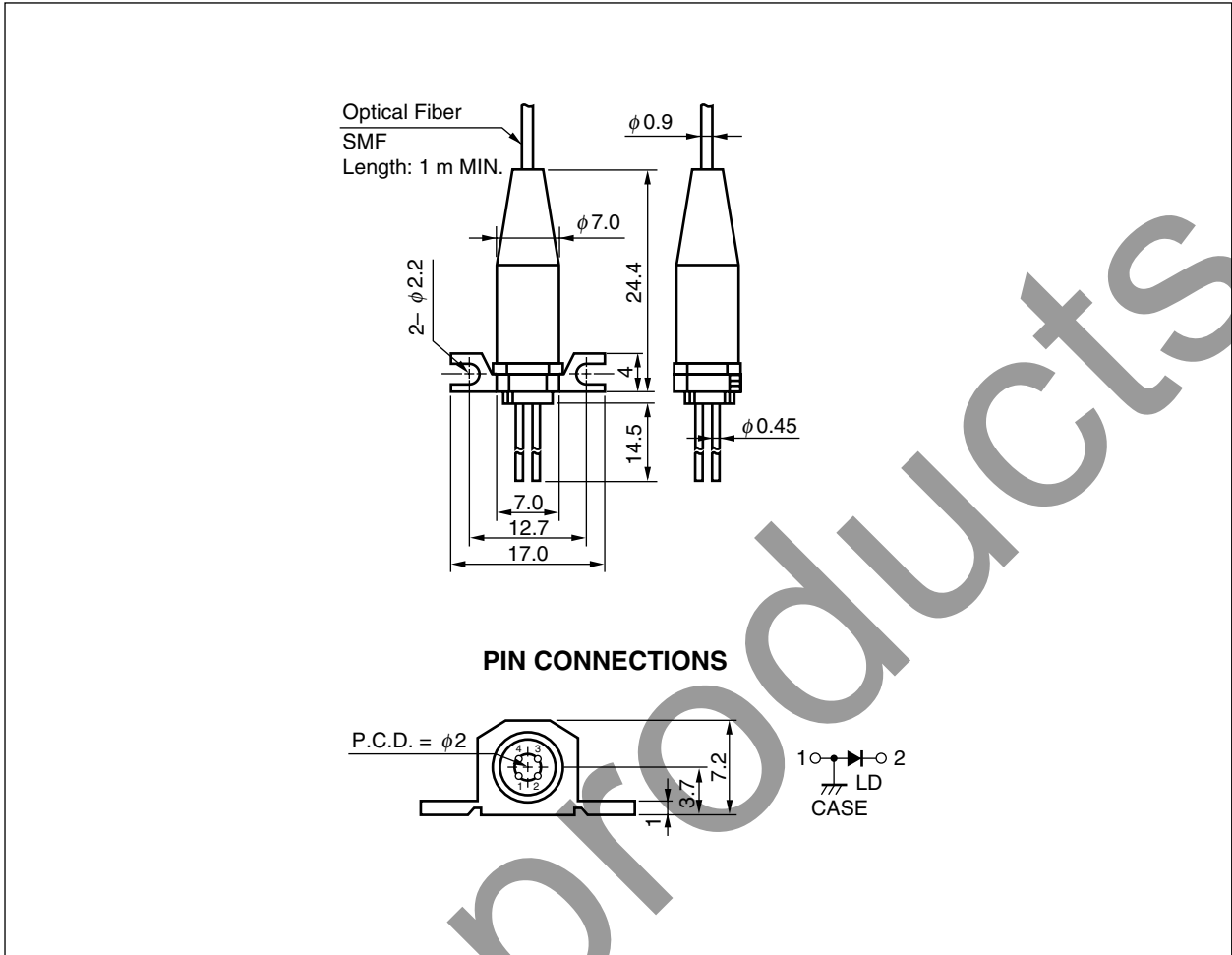
- High output power  $P_f = 70 \text{ mW} @ I_{FP} = 1\,000 \text{ mA}^{*1}$
- Long wavelength  $\lambda_c = 1\,625 \text{ nm}$

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



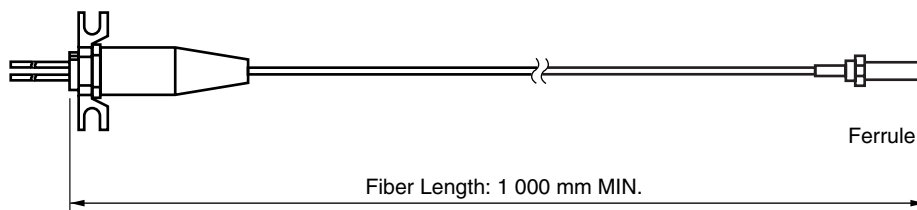
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PACKAGE DIMENSIONS (UNIT: mm)



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
NX7639BB-AA	flat mount flange

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current <sup>*1</sup>	I <sub>FP</sub>	1 200	mA
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%			4.0	V
Threshold Current	I <sub>th</sub>			45	70	mA
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	40	70		mW
		I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%, T <sub>C</sub> = 0 to +60°C	20			
Center Wavelength	λ <sub>C</sub>	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%	1 615		1 635	nm
Spectral Width	σ	RMS (-20 dB), I <sub>FP</sub> = 1 000 mA, PW = 10 μs, Duty = 1%, T <sub>C</sub> = 0 to +60°C			15	nm
Rise Time	t <sub>r</sub>	10-90%			2.0	ns
Fall Time	t <sub>f</sub>	90-10%			2.0	ns

REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E

EOL products

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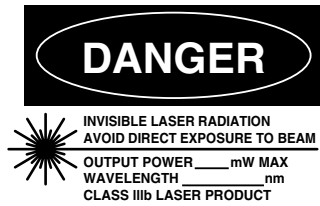
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M8E0904E

SAFETY INFORMATION ON THIS PRODUCT



**DANGER**

INVISIBLE LASER RADIATION  
AVOID DIRECT EXPOSURE TO BEAM

OUTPUT POWER \_\_\_\_\_mW MAX  
WAVELENGTH \_\_\_\_\_nm  
CLASS IIIb LASER 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>

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