CEL

NEC's 1550 nm InGaAsP MQW FP PULSED LASER DIODE IN COAXIAL PACKAGE FOR OTDR APPLICATION (60 mW MIN)

NX7528BF-AA

FEATURES

- **HIGH OUTPUT POWER:**
  P_f = 80 mW at I_{FP} = 400 mA
  Pulse Conditions: Pulse width (PW) = 10ms, Duty = 1%
- **LONG WAVELENGTH:**
  λ_C = 1550 nm

DESCRIPTION

NEC's NX7528BF-AA is a 1550 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 is designed for light sources of Optical Time Domain Reflectometer(OTDR).

ELECTRO-OPTICAL CHARACTERISTICS (T_C = 25°C)

PART NUMBER			NX7528BF-AA		
SYMBOLS	**PARAMETERS AND CONDITIONS**	**UNITS**	**MIN**	**TYP**	**MAX**
V_{FP}	Forward Voltage, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%	V		2.5	4.0
I_{TH}	Threshold Current	mA		45	50
P_f	Optical Output Power from Fiber, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%	mW	60	80	
λ_C	Center Wavelength, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%, RMS (-20 dB)	nm	1530	1550	1570
σ	Spectral Width, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%, RMS (-20 dB)	nm		6.0	10.0
t_r	Rise Time, 10-90%	ns			1.0
t_f	Fall Time, 90-10%	ns			1.0

ELECTRO-OPTICAL CHARACTERISTICS (T_C = 0 to +60°C)

PART NUMBER			NX7528BF-AA		
SYMBOLS	**PARAMETERS AND CONDITIONS**	**UNITS**	**MIN**	**TYP**	**MAX**
I_{TH}	Threshold Current	mA			75
P_f	Optical Output Power from Fiber, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%	mW	40		
λ_C	Center Wavelength, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%, RMS (-20 dB)	nm	1520		1585
$\Delta\lambda/\Delta T$	Temperature Dependency of Center Wavelength	nm/°C		0.35	
σ	Spectral Width, I_{FP} = 400 mA, PW = 10 μs, Duty = 1%, RMS (-20 dB)	nm			10.0

ABSOLUTE MAXIMUM RATINGS[1]

(T_C = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
I_{FP}	Pulsed Forward Current[2]	mA	600
V_R	Reverse Voltage	V	2.0
T_C	Operating Case Temperature	°C	-20 to +60
T_{STG}	Storage Temperature	°C	-40 to +85
T_{SLD}	Lead Soldering Temperature (10 sec)	°C	260
RH	Relative Humidity (noncondensing)	%	85

Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
2. Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1%.

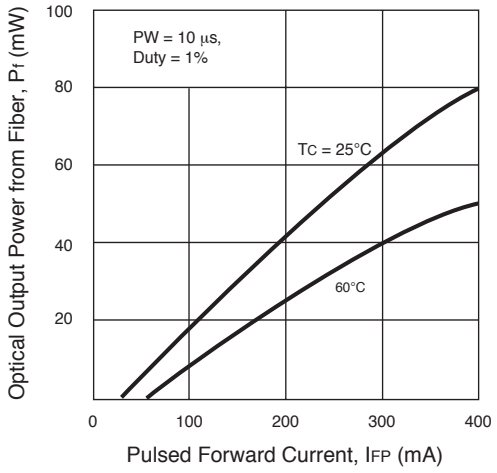
ORDERING INFORMATION

PART NUMBER	FLANGE TYPE
NX7528BF-AA-AZ*	Flat Mount Flange

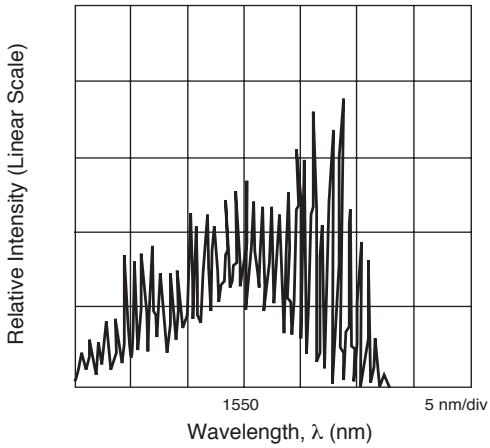
***Note:**
Please refer to the last page of this data sheet. "Compliance with EU Directives" for Pb-Free RoHS Compliance Information.

TYPICAL PERFORMANCE CURVES (T_C = 25°C, unless otherwise specified)

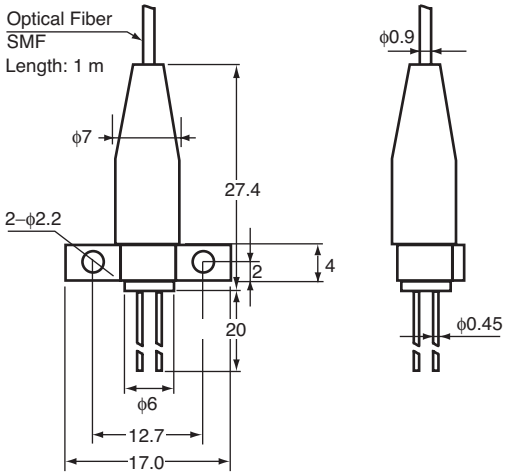
OPTICAL OUTPUT POWER FROM FIBER vs. PULSED FORWARD CURRENT



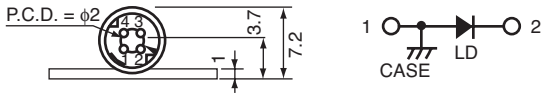
SPECTRUM



OUTLINE DIMENSIONS (Units in mm)

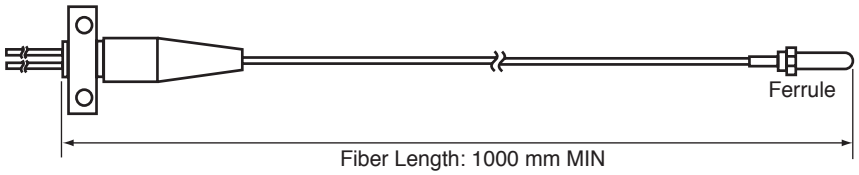


PIN CONNECTIONS



OPTICAL FIBER CHARACTERISTICS

PARAMETER	UNIT	SPECIFICATION
Mode Field Diameter	μm	9.3±0.5
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	1140 to 1280
Minimum Fiber Bending Radius	mm	30
Fiber Length	mm	1000 MIN



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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Subject: Compliance with EU Directives

CEL certifies, to its knowledge, that semiconductor and laser products detailed below are compliant with the requirements of European Union (EU) Directive 2002/95/EC Restriction on Use of Hazardous Substances in electrical and electronic equipment (RoHS) and the requirements of EU Directive 2003/11/EC Restriction on Penta and Octa BDE.

CEL Pb-free products have the same base part number with a suffix added. The suffix –A indicates that the device is Pb-free. The –AZ suffix is used to designate devices containing Pb which are exempted from the requirement of RoHS directive (*). In all cases the devices have Pb-free terminals. All devices with these suffixes meet the requirements of the RoHS directive.

This status is based on CEL's understanding of the EU Directives and knowledge of the materials that go into its products as of the date of disclosure of this information.

Restricted Substance per RoHS	Concentration Limit per RoHS (values are not yet fixed)	Concentration contained in CEL devices	
Lead (Pb)	< 1000 PPM	-A	-AZ
		Not Detected	(*)
Mercury	< 1000 PPM	Not Detected	
Cadmium	< 100 PPM	Not Detected	
Hexavalent Chromium	< 1000 PPM	Not Detected	
PBB	< 1000 PPM	Not Detected	
PBDE	< 1000 PPM	Not Detected	

If you should have any additional questions regarding our devices and compliance to environmental standards, please do not hesitate to contact your local representative.

Important Information and Disclaimer: Information provided by CEL on its website or in other communications concerting the substance content of its products represents knowledge and belief as of the date that it is provided. CEL bases its knowledge and belief on information provided by third parties and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. CEL has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. CEL and CEL suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.
In no event shall CEL's liability arising out of such information exceed the total purchase price of the CEL part(s) at issue sold by CEL to customer on an annual basis.
See CEL Terms and Conditions for additional clarification of warranties and liability.