

PRELIMINARY DATA SHEET

NEC

InGaAsP STRAINED MQW-DC-PBH PULSED LASER DIODE MODULE FOR 1550 nm OTDR APPLICATION

NX7561JB

FEATURES

- **HIGH OUTPUT POWER:**
 $P_f = 135 \text{ mW}$ MIN at $I_{FP} = 1000 \text{ mA}$,
Pulse width (PW) = 10ms, Duty = 1%
- **LONG WAVELENGTH:**
 $\lambda_c = 1550 \text{ nm}$
- **INTERNAL THERMOELECTRIC COOLER**
- **HERMETICALLY SEALED 14 PIN DUAL-IN-LINE PACKAGE**
- **SINGLE MODE FIBER PIGTAIL**

DESCRIPTION

The NX7561JB is a 1550 nm developed strained Multiple Quantum Well (st-MQW) structure pulsed laser diode DIP module with single mode fiber and internal thermoelectric cooler. It is designed for light sources of optical measurement equipment (OTDR).

ELECTRO-OPTICAL CHARACTERISTICS (T_{LD} = 25°C, T_C = -20 to +65°C, unless otherwise specified)

PART NUMBER			NX7561JB		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
V _{FP}	Forward Voltage, CW, I _F = 30 mA	V		2.5	4.0
I _{TH}	Threshold Current, CW	mA		40	70
P _f	Optical Output Power from Fiber	I _{FP} = 1000 mA ¹	mW	135	
		I _{FP} = 600 mA ¹	mW	70	
		I _{FP} = 400 mA ¹	mW	20	
λ _c	Center Wavelength, RMS, I _{FP} = 400, 600, 1000 mA ¹	nm	1530	1550	1570
σ	Spectral Width, RMS, I _{FP} = 400, 600, 1000 mA ¹	nm		4.0	8.0
t _r	Rise Time, 10-90%	ns		1.0	2.0
t _f	Fall Time, 90-10%	ns		1.4	2.0

Note:

1. PW = 10 μs, Duty = 1%

ELECTRO-OPTICAL CHARACTERISTICS APPLICABLE TO THERMISTOR AND TEC: (T_{LD} = 25°C, T_C = -20 to +65°C, unless otherwise specified)

PART NUMBER			NX7561JB		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
R ¹	Thermistor Resistance, T _{LD} = 25°C	kΩ	9.5	10.0	10.5
B	B Constant	K	3300	3400	3500
I _c	Cooler Current, ΔT = 40 K	A		0.6	0.8
V _c	Cooler Voltage, ΔT = 40 K	V		1.1	1.5
ΔT ¹	Cooling Capacity, I _c = 0.8 A	K	40		

Note:

1. ΔT = |T_C - T_{LD}|.

ABSOLUTE MAXIMUM RATINGS¹

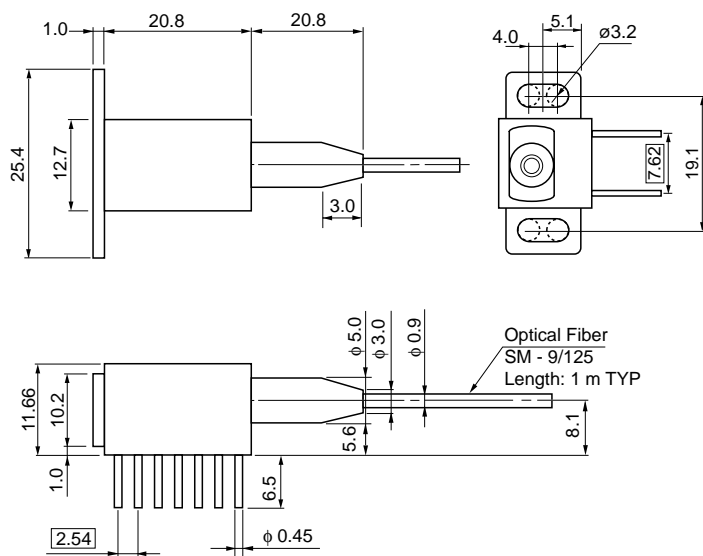
(T_c = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
IFP	Pulsed Forward Current ²	A	1.2
V _R	Reverse Voltage	V	2.0
I _c	Cooler Current	A	1.0
V _c	Cooler Voltage	V	2.0
I _t	Thermistor Current	mA	0.5
V _t	Thermistor Voltage	V	12.0
T _c	Operating Case Temperature	°C	-20 to +65
T _{STG}	Storage Temperature	°C	-40 to +70
T _{SLD}	Lead Soldering Temperature (10 sec)	°C	260

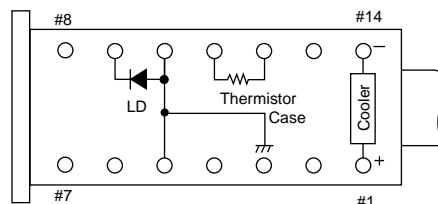
Notes:

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 %.

OUTLINE DIMENSIONS (Units in mm)



BOTTOM VIEW



PIN CONNECTIONS

PIN No.	FUNCTION	PIN No.	FUNCTION
1	COOLER ANODE	8	NC
2	NC	9	LASER CATHODE
3	NC	10	LASER ANODE, CASE GROUND
4	NC	11	THERMISTOR
5	LASER ANODE, CASE GROUND	12	THERMISTOR
6	NC	13	NC
7	NC	14	COOLER CATHODE

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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