NEC

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

NX7561JB

FEATURES

- **HIGH OUTPUT POWER:**
  P_f = 135 mW MIN at I_{FP} = 1000 mA,
  Pulse width (PW) = 10ms, Duty = 1%
- **LONG WAVELENGTH:**
  λ_C = 1550 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. $\Delta T = | T_C - T_{LD} |$.

ABSOLUTE MAXIMUM RATINGS[1]

(T_C = 25°C, unless otherwise specified)

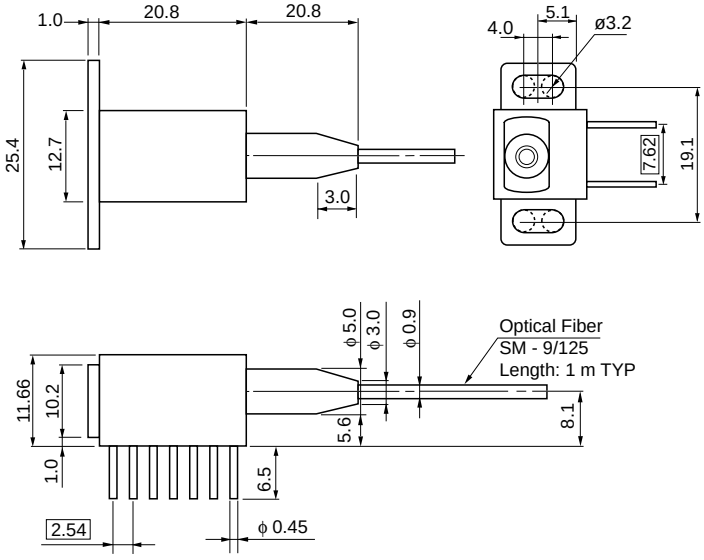
SYMBOLS	PARAMETERS	UNITS	RATINGS
I_{FP}	Pulsed Forward Current[2]	A	1.2
V_R	Reverse Voltage	V	2.0
I_C	Cooler Current	A	1.0
V_C	Cooler Voltage	V	2.0
I_t	Thermistor Current	mA	0.5
V_t	Thermistor Voltage	V	12.0
T_C	Operating Case Temperature	°C	-20 to +65
T_{STG}	Storage Temperature	°C	-40 to +70
T_{SLD}	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 %.

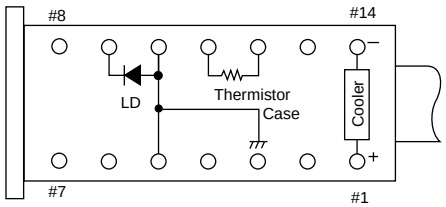
ORDERING INFORMATION

PART NUMBER	DESCRIPTION
NX7561JB	Without Connector
NX7561JB-BA	With FC-PC Connector

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,
4	NC		CASE GROUND
5	LASER ANODE,	11	THERMISTOR
	CASE GROUND	12	THERMISTOR
6	NC	13	NC
7	NC	14	COOLER CATHODE