

Specification Proposal for NX8560LJ-BC/CC189

Customer: PHOTONICSystems

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TITLE : 10Gb/s EA /DFB

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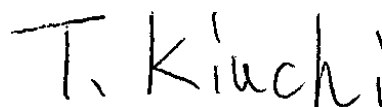
CUSTOMER'S RECEIPT

TITLE:

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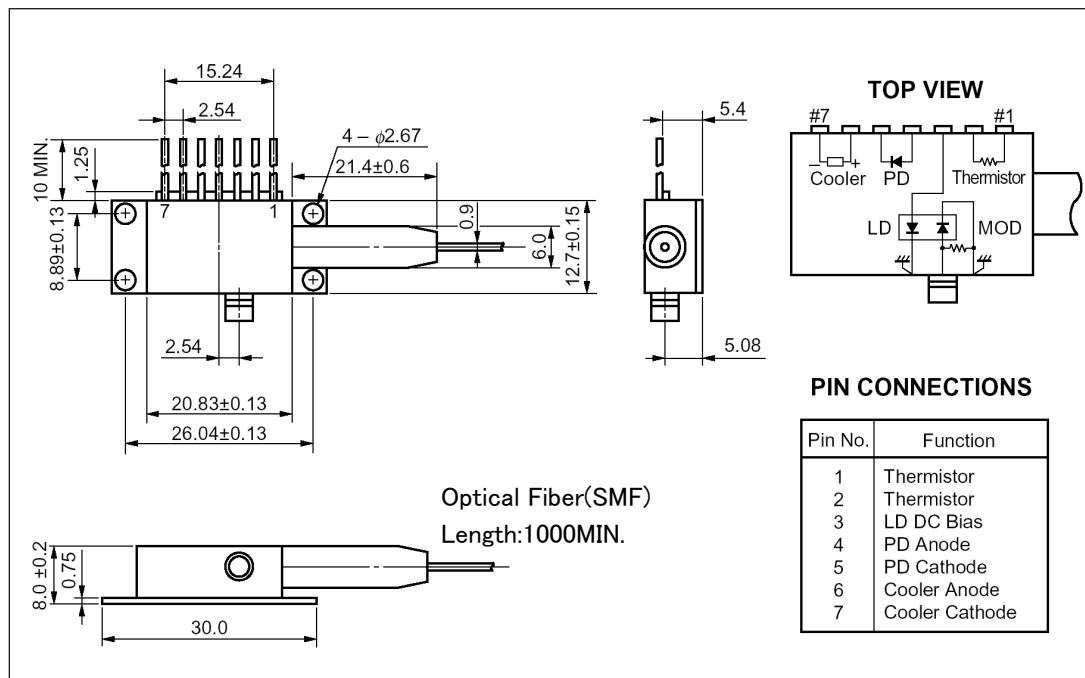
NOTE:

Please contact with responsible supplier person.
If you require any modifications of this specification.

SALES ENGINEERING Gr.
SALES DIVISION
NEC COMPOUND SEMICONDUCTOR DEVICES, LTD.

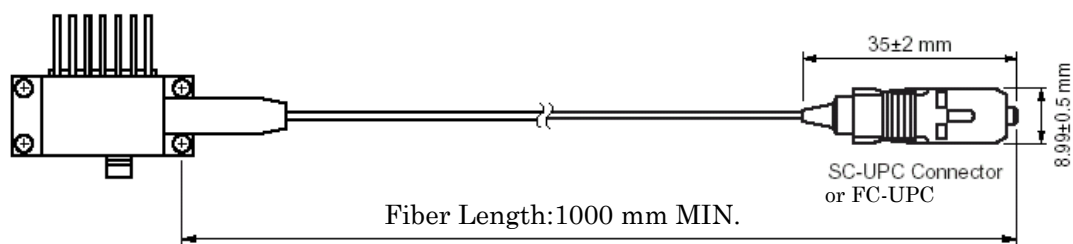
NX8560LJ-BC/CC189 for PHOTONICS Systems

PACKAGE DIMENSIONS(UNIT:mm, unless otherwise specified +/-0.2mm)



OPTICAL FIBER CHARACTERISTICS

Parameter	Specification	Unit
Mode Field Diameter	9.3±0.5	μm
Cladding Diameter	125±1	μm
Tight Buffer Diameter	900±100	μm
Cut-off Wavelength	< 1 270	nm
Attenuation 1 525 to 1 575 nm	< 0.3	dB/km
Minimum Fiber Bending Radius	30	mm
Fiber Length	1 000 MIN.	mm
Flammability	UL1581 VW-1	



NX8560LJ-BC/CC189 for PHOTONICS

Ordering information:

- NX8560LJ-BC189 : with FC Connector
- NX8560LJ-CC189 : with SC Connector

ABSOLUTE MAXIMUM RATINGS:

Parameter	Symbol	Ratings	Unit
Optical Output Power from Fiber	P_f	10	mW
Forward Current of LD	I_{FLD}	150	mA
Reverse Voltage of LD	V_{RLD}	2.0	V
Forward Voltage of Modulator	V_{FEA}	1	V
Reverse Voltage of Modulator	V_{REA}	4	V
Forward Current of PD	I_{FPD}	1	mA
Reverse Voltage of PD	V_{RPD}	10	V
Cooler Current	I_C	1.5	A
Cooler Voltage	V_C	2.5	V
Operating Case Temperature	T_C	-20 to +70	°C
Storage Temperature	T_{stg}	-40 to +85	°C
Lead Soldering Temperature (10 sec.)	T_{slid}	260	°C

NX8560LJ-BC/CC189 for PHOTONICS Systems

ELECTRO-OPTICAL CHARACTERISTICS

($T_{LD} = 25^{\circ}\text{C}$, $T_c = 25^{\circ}\text{C}$, BOL, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Laser Set Temperature	T_{set}	*1	20		35	$^{\circ}\text{C}$
Operating Current	I_{op}	$T_{LD} = T_{set}$	50	60	80	mA
Modulation Center Voltage	V_{center}		-2.0		-0.5	V
Modulation Voltage	V_{mod}			2	2.7	V
Forward Voltage of LD	V_{FLD}	$I_{FLD} = I_{op}$			2.0	V
Threshold Current	I_{th}	$T_{LD} = T_{set}$		6	20	mA
Optical Output Power from Fiber	P_f	Under modulation *2	-3			dBm
Peak Emission Wavelength	λ_p	$I_{FLD} = I_{op}$, $V_{EA} = 0\text{ V}$, $T_{LD} = T_{set}$	1530		1563	nm
Side Mode Suppression Ratio	SMSR	$I_{FLD} = I_{op}$, $V_{EA} = 0\text{ V}$	30			dB
Extinction Ratio	ER	Under modulation *2	8.2	10		dB
Rise Time	t_r	20-80%, Under modulation *2			40	ps
Fall Time	t_f	80-20%, Under modulation *2			40	ps
Optical Isolation	I_s		23			dB
RF Return Loss	S_{11}	$I_{FLD} = I_{op}$, $V_{EA} = -1\text{ V}$ 130 MHz to 5 GHz		-10	-8	dB
		$I_{FLD} = I_{op}$, $V_{EA} = -1\text{ V}$ 5 to 10 GHz		-8	-5	

*1 NX8560LJ-CC: T_{set} is a certain point between 20°C and 35°C

*2 9.95328 Gb/s, PRBS 2^{23-1} , $V_{EA} = V_{center} \pm 1/2 V_{mod}$, $I_{FLD} = I_{op}$, $T_{LD} = T_{SET}$, NEC Test System

V_{center} : a certain point between -0.5 V and -2.0 V

V_{mod} : a certain point below 2.7 V

I_{op} : a certain point between 50 mA and 80 mA

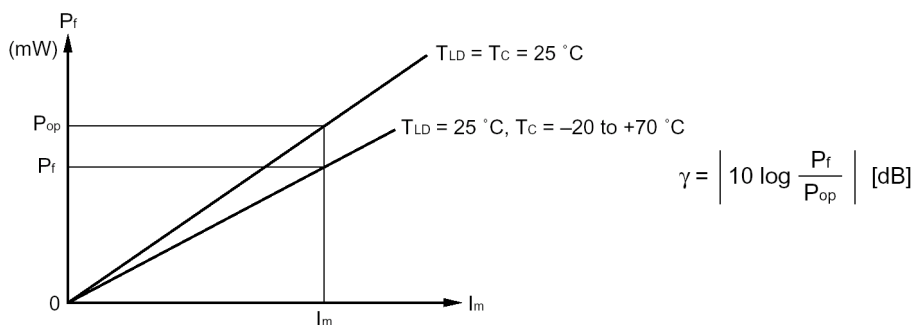
NX8560LJ-BC/CC189 for PHOTONICS Systems

ELECTRO-OPTICAL CHARACTERISTICS

(Applicable to Monitor PD: $T_{LD} = 25\text{ }^{\circ}\text{C}$, $T_C = -20\text{ to }+70\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Monitor Current	I_m	$V_{RPD} = 5\text{ V}$, $I_{FLD} = I_{op}$, $V_{EA} = 0\text{ V}$	30		1 100	μA
Dark Current	I_D	$V_{RPD} = 5\text{ V}$, $V_{EA} = 0\text{ V}$			10	nA
Terminal Capacitance	C_t	$V_{RPD} = 5\text{ V}$, $f = 1\text{ MHz}$			15	pF
Tracking Error	γ *1	$I_m = \text{const.}$			0.5	dB

$$*1 \gamma = \left| 10 \log \frac{P_f}{P_{op}} \right|$$



ELECTRO-OPTICAL CHARACTERISTICS

(Applicable to Thermistor and TEC: $T_{LD} = 25\text{ }^{\circ}\text{C}$, $T_C = -20\text{ to }+70\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Thermistor Resistance	R	$T_{LD} = 25\text{ }^{\circ}\text{C}$	9.5	10.0	10.5	$\text{k}\Omega$
B Constant	B		3 350	3 450	3 550	K
Cooler Current	I_c	$\Delta T = 50\text{ }^{\circ}\text{C}$			1.2	A
Cooler Voltage	V_c	$\Delta T = 50\text{ }^{\circ}\text{C}$			2.4	V