

## NLK5C5EBKA

High speed 1550 nm DFB laser diode in K-connector package with 50Ω matching resistor, choke coil, 30 dB isolator and thermo-electric cooler. Pigtail fiber is connectorized with FC/PC connector.

### FEATURES

* Wavelength Range	1550 nm
* Fiber Output Power	3mW
* Modulation	10 Gb/s
* RF Connector	K-connector

### ABSOLUTE MAXIMUM RATINGS (T<sub>sub</sub>=25deg. C)

Parameter	Symbol	Ratings	Units
Laser diode reverse voltage	V <sub>R</sub>	2.0	V
Fiber output power	φ <sub>e</sub>	15	mW
Laser diode forward current	I <sub>F</sub>	150	mA
Operating case temperature	T <sub>case</sub>	-5 to 70	deg. C
Storage temperature	T <sub>stg</sub>	-40 to 85	deg. C
Photodiode reverse voltage	V <sub>DR</sub>	10	V
Photodiode forward current	I <sub>DF</sub>	10	mA
Peltier current	I <sub>P</sub>	1.4	A

### ELECTRICAL/OPTICAL CHARACTERISTICS (T<sub>sub</sub>=25deg. C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units	Data
Forward voltage*	V <sub>F</sub>	I <sub>F</sub> =30mA		1.2	1.6	V	Deliver
Threshold current	I <sub>(TH)</sub>	CW		15	30	mA	Deliver
Operating current above threshold	ΔI <sub>F</sub>	CW, φ <sub>e</sub> =3mW			40	mA	Deliver
Fiber output power	φ <sub>e</sub>	CW, ΔI <sub>F</sub> =40mA	3	4		mW	Deliver
Peak wavelength	λ <sub>p</sub>	CW, φ <sub>e</sub> =3mW	1530	1550	1565	nm	Deliver
Side mode suppression ratio	SMS	CW, φ <sub>e</sub> =3mW	30			dB	Deliver
Monitoring current(PD)	I <sub>R(E)</sub>	CW, V <sub>DR</sub> =5V, φ <sub>e</sub> =3mW	0.1			mA	Deliver
Dark current(PD)	I <sub>r(0)</sub>	CW, V <sub>DR</sub> =5V			100	nA	Deliver
Tracking error	E <sub>R</sub>	Note(1), I <sub>R(E)</sub> =constant	-0.5		+0.5	dB	Deliver
Spectral width	Δλ	Note(2), -20dB		0.4	0.5	nm	Option
Rise time	t <sub>r</sub>	Note(2), 10%-90%		25	35	ps	Option
Fall time	t <sub>f</sub>	Note(2), 10%-90%		35	45	ps	Option
Cut-off frequency	f <sub>c</sub>	ΔI <sub>F</sub> =40mA	15	18		GHz	Option
Resonance frequency	f <sub>r</sub>	ΔI <sub>F</sub> =40mA		15		GHz	
Extinction ratio	ER	Note(2)	8.2			dB	Option
Electrical return loss	S <sub>11</sub>	ΔI <sub>F</sub> =40mA, @ </=8GHz	10			dB	Option
Cooling Capacity	ΔT <sub>PE</sub>	φ <sub>e</sub> =3mW, T <sub>case</sub> =70deg. C	50	55		deg. C	Option
Peltier Current	I <sub>PE</sub>	T <sub>case</sub> =-5 to 70deg. C			1.2	A	Option
Peltier Voltage	V <sub>PE</sub>	T <sub>case</sub> =-5 to 70deg. C			2	V	Option
Thermister Resistance	R	T <sub>sub</sub> =25deg. C		10		kΩ	
Isolation	I <sub>s</sub>	T <sub>sub</sub> =25deg. C		30		dB	

$$\Delta I_F = I_F - I_{(TH)}, \Delta T = |T_{case} - T_{sub}|$$

Put DC into the Choke coil only

Note(1) :  $E_R = 10 \log((\Phi_{e70deg.C} / \Phi_{e25deg.C}) / \Phi_{e25deg.C})$  Note(2) : 9.95328Gb/s, 2<sup>23</sup>-1PRBS, I<sub>p-p</sub>=40mA



### WARNING

If you plan to use these products in equipment which could endanger lives in the event of a product failure, please consult an NEL engineer before usage. Improper application of these products may endanger life. To avoid possible injury, make certain these products are used in a redundant configuration.

1 These products are subject to export regulations and restrictions set force by the Japanese Government.

2 NTT Electronics Corporation reserves the right to make changes in design, specification or related information at any time without prior notice.