

## C-15xx-DFB2.5-E-XD-NT



### Features

- Uncooled laser diode with MQW structure
- 5 mW CW operation at 0 to +70°C
- High temperature operation without active cooling
- Hermetically sealed active component
- Built-in InGaAs monitor photodiode
- Complies with Bellcore TA-NWT-000983
- Designed for 2.5 Gbps high speed optical networks
- Single frequency operation with high SMSR

### Packaging

- TO-18 with a flat window cap or a ball lens cap

### Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Optical Output Power	$P_o$	6 (CW)	mW
LD Reverse Voltage	$V_{rld}$	2	V
PD Reverse Voltage	$V_{rpd}$	10	V
PD Forward Current	$I_{fpd}$	2	mA
Operating Temperature	$T_{opr}$	0 to +70	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +100	$^\circ\text{C}$

### Optical and Electrical Characteristics ( $T_c = 25^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Slope Efficiency	SE	0.15	0.25	-	mW/ mA	CW, $P_o=5\text{mW}$
Flat window cap						
Ball lens cap		0.12	0.18	-		
Threshold Current	$I_{th}$	-	10	15	mA	CW
Optical Output Power	$P_o$	3	4	-	mW	CW, $I=I_{th}+20\text{mA}$
Peak Wavelength*	$\lambda$	n-2	n	n+2	nm	See note below
Side mode Suppression	$S_r$	30	35	-	dB	CW, $P_o=5\text{mW}$ (0 to +70 $^\circ\text{C}$ )
Forward Voltage	$V_f$	-	1.2	1.5	V	CW, $P_o=5\text{mW}$
Temperature dependence of peak wavelength	$\Delta\lambda_p/\Delta T$	0.08	0.1	0.12	nm/ $^\circ\text{C}$	CW, $P_o=5\text{mW}$ (0 to +70 $^\circ\text{C}$ )
Beam Divergence	$\theta_{//}$	-	25	-	deg.	CW, $P_o=5\text{mW}$ ,FWHM
	$\theta_{\perp}$	-	35	-		
Rise Time, Fall Time	$t_r, t_f$	-	-	150	ps	$I_{bias}=I_{th}, 10-90\%$
PD Monitor Current	$I_m$	100	200	800	$\mu\text{A}$	CW, $P_o=5\text{mW}$ , $V_{rpd}=2\text{V}$
PD Dark Current	$I_{DARK}$	-	-	0.1	$\mu\text{A}$	$V_{rpd}=5\text{V}$
PD Capacitance	$C_t$	-	6	15	pF	$V_{rpd}=5\text{V}$ , $f=1\text{MHz}$

### Optical and Electrical Characteristics ( $T_c = 70^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Threshold Current	$I_{th}$	-	-	50	mA	CW
Optical Output Power	$P_o$	6	-	-	mW	CW, $I=I_{th}+60\text{mA}$ , flat window cap

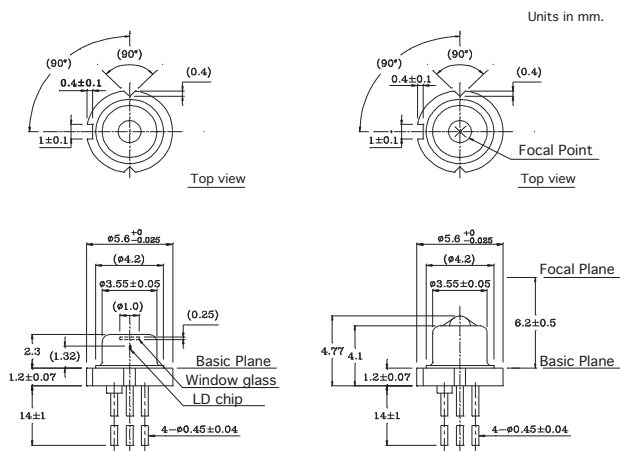
Note: Selected wavelength is available for WDM application.

\*Peak wavelength n=1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm, 1610nm

## C-15xx-DFB2.5-E-XD-NT

### Outline Drawing & LD Pin Assignment

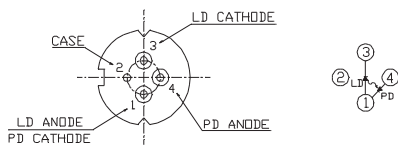
#### Outline Drawing



#### Model

D-type

#### PIN Assignment (Bottom View)



### Ordering Information

## C-15xx-DFB2.5-E-xD-NT

1470 1550  
1490 1570  
1510 1590  
1530 1610

DFB Laser

2.5 Gbps

A=flat window cap

B=ball lens cap

### Warnings

**Handling Precautions:** This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

**Laser Safety:** Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

### Legal Notice

#### IMPORTANT NOTICE!

All information contained in this document is subject to change without notice, at Luminent's sole and absolute discretion. Luminent warrants performance of its products to current specifications only in accordance with the company's standard one-year warranty; however, specifications designated as "preliminary" are given to describe components only, and Luminent expressly disclaims any and all warranties for said products, including express, implied, and statutory warranties, warranties of merchantability, fitness for a particular purpose, and non-infringement of proprietary rights. Please refer to the company's Terms and Conditions of Sale for further warranty information.

Luminent assumes no liability for applications assistance, customer product design, software performance, or infringement of patents, services, or intellectual property described herein. No license, either express or implied, is granted under any patent right, copyright, or intellectual property right, and Luminent makes no representations or warranties that the product(s) described herein are free from patent, copyright, or intellectual property rights. Products described in this document are NOT intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. Luminent customers using or selling products for use in such applications do so at their own risk and agree to fully defend and indemnify Luminent for any damages resulting from such use or sale.

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED ON AN "AS IS" BASIS. Customer agrees that Luminent is not liable for any actual, consequential, exemplary, or other damages arising directly or indirectly from any use of the information contained in this document. Customer must contact Luminent to obtain the latest version of this publication to verify, before placing any order, that the information contained herein is current.

© Luminent, Inc. 2002  
All rights reserved