



## D3125R DFB Laser Diode Chip for use in uncooled applications up to 25 Gb/s

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### Description

The D3125R is a directly modulated 25Gbps DFB edge emitting laser diode chip at 1310nm wavelength. The center wavelength tolerance of these diodes is  $\pm 10\text{nm}$  and their operating temperature range is from  $0^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$ . Product is available as tested die. All laser chips come from wafers that have been certified using a representative lot of devices that must achieve an acceptable yield for burn-in.

### Key Features

- Multi Quantum Well Distributed Feedback Laser
- Reliable Ridge Waveguide Design
- 1310nm  $\pm 10\text{nm}$  tolerance
- Direct modulation up to 25Gbps over operating temperature
- Uncooled operation from  $0^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$
- Edge emitting laser (EEL)
- Narrow Farfield
- Designed for Telcordia GR-468

### Applications

- Wireless, Data Center, Telecom

### Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet.

Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

PARAMETER	UNIT	MIN	MAX
Forward Current	mA		150
Front Power	mW		40
Reverse Voltage	V		2
Storage Temperature	C	-40	100

These maximum stresses are to be applied only after the chip is properly bonded to a heat sink at room temperature. Applying current to a bare chip can damage the device.

## Electro-Optical Characteristics

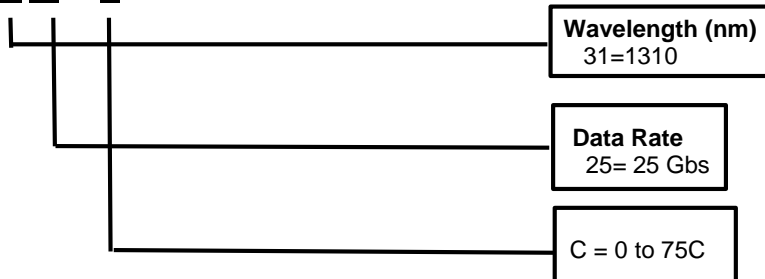
Parameters at 25C unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYPICAL	MAX	UNIT
Operating Temperature	T		0		75	C
Threshold Current	$I_{TH}$	CW		8	11	mA
		T=75C CW		16	23	
Slope Efficiency	$\eta$	$I_{TH}+20mA$		0.32		W/A
		T=75C $I_{TH}+20mA$		0.22		
Optical Output Power	P	$I_F = I_{TH}+20mA$	6	6.4		mW
		T=75C $I_{TH}+20mA$	3.5	4.4		
Forward Voltage	$V_F$	$I_F = I_{TH}+20mA$		1.5	2.0	V
Series Resistance	R	P = 3mW		8	12	Ohm
Reverse Current	$I_R$	$V_F = -2V$		<0.1	1	mA
Wavelength	$\lambda$	P = 5mW	$\lambda_c -10$	$\lambda_c$	$\lambda_c +10$	nm
Wavelength Temperature Coefficient	$d\lambda/dT$	T = 0C~+75C		0.1		nm/C
Side Mode suppression Ratio	SMSR	P = 5mW	30	40		dB
Far field (Vertical)	$\theta_v$	P = 5mW		18	23	degrees
Far field (Horizontal)	$\theta_h$	P = 5mW		20	25	degrees
Small Signal Modulation Bandwidth(3dB)	BW	$I_{TH}+30mA$ , 25C $I_{TH}+30mA$ , 75C		22 19		GHz
Rise Time	$\tau_R$	unfiltered, 20~80% ER=6dB			20	ps
Fall Time	$\tau_F$	unfiltered, 20~80% ER=6dB			20	ps

$I_F$  = forward current       $V_F$  = forward voltage       $\lambda_c$  = center wavelength. See ordering information

## Ordering Information

**D 31 25 R C**



For additional information, contact your Lasercom Account manager

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