Data Sheet
Oct 2018

D3102R Edge-Emitting DFB Laser Diode Chip at 1310 nm for use in Uncooled applications up to 2.5Gb/sec

Description

The D3102R is a 1310nm directly modulated 2.5 Gbs single mode edge-emitting laser diode chip for use in uncooled applications. The design is a Ridge Wave Guide structure (RWG) on n-type InP substrate with multi-quantum well (MQW) active layers and built-in distributed-feedback (DFB) grating.
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

- Low Threshold Current
- Direct modulation beyond 2.5Gbps
- Uncooled operation
- High reliability
- Wide temperature range
- Qualified for Telcordia GR-468

Applications

- PON, ACCESS, Optical Ethernet, SDH

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. Applying current to a bare chip can damage the device.

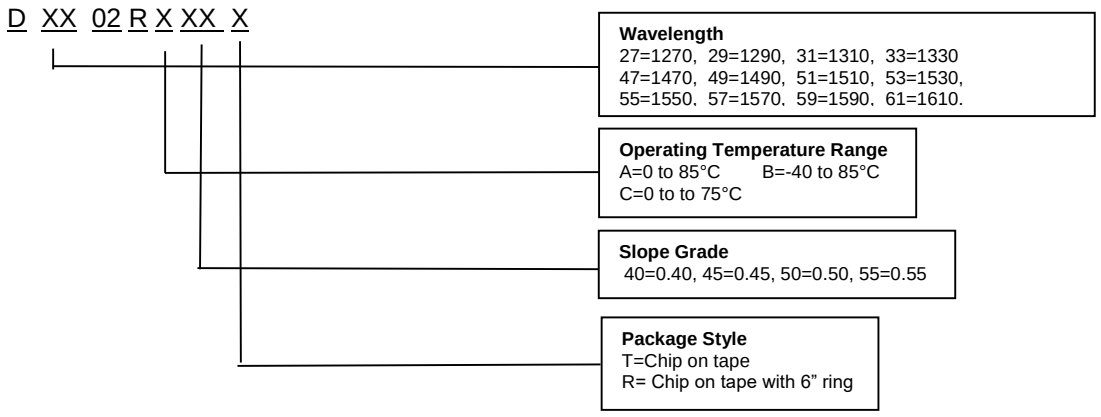
Electro-Optical Characteristics for D3102R

Parameters tested at 25C unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Lasing Threshold Current	Ith	CW		9	12	mA
		T=85C			50	
Slope Efficiency	η	Ith+20mA	0.35	0.45		W/A
		T=85C; Ith+20mA	0.2	0.25		
Optical output Power	Pf	If=Ith+20mA	7	9		mW
		T=85C; If=Ith+20mA	4	5		
Forward Voltage	Vf	If= Ith+20mA		1.12	1.35	V
Series Resistance	Rs	Pf =3mW		8	12	Ohms
Reverse Current	Ir	Vf=-2V		<0.1	1	mA
Kink Deviation [1]	-	Ith to 100mA		-	8	%
Wavelength	λ	Pf =5mW	1300	1310	1320	nm
Wavelength/Temperature Coefficient	dλ/dT			0.1		nm/C
Side Mode suppression Ratio	SMSR	Pf=5mW	35	40		
Farfield (Vertical)	θv	Pf=5mW		24		degrees
Farfield (Horizontal)	θh	Pf=5mW		23		degrees
Bandwidth	BW	Pf=5mW at -3dB	2.5			GHz
Rise Time	τr	unfiltered, 20~80% ER=6dB			<100	Ps
Fall Time	τf	unfiltered, 20~80% ER=6dB			<150	ps

I_F = forward current V_F = forward voltage λ_C = center wavelength. See ordering information

Ordering Information



For additional information, contact your Lasercom Account manager

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