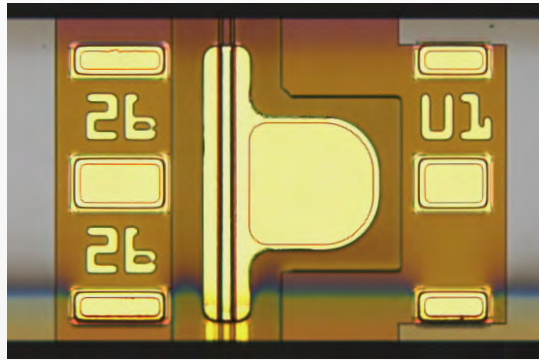


II-VI



IND02Dn00D102
IND02Cn00D102
IND02Ln00D102
IND02Bn00D102

1300nm 28 Gb/s NRZ DFB Laser Diode Chips

Features

- Designed for uncooled 28 Gb/s NRZ
- Operating temperature -20 °C to 95 °C
- Qualified according to GR-468 for use in non-hermetic packages
- Excellent reliability
- Top anode and backside cathode configuration
- RoHS compliant
- Available wavelengths
 - CWDM 1270 nm to 1370 nm
 - LWDM 1269.23 nm to 1318.35 nm

1300nm 28 Gb/s NRZ DFB Laser Diode Chips

Applications

- Fiber optical communication links
- Gigabit Ethernet and storage area networks
- 5G Wireless front-haul datalinks

Shipment packaging options

- Diced wafer on UV tape with grip ring Ø 150mm

Electro-Optical Characteristics

Operating conditions: Top= -20° to 95°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Threshold current	I_{th}	85°C		11	17	mA
		25°C		5		
Slope efficiency	SE	85°C	0.1	0.2		W/A
Slope efficiency ratio	SE_{0C}/SE_{85C}	0°C, 85°C			4	
Saturation current	I_{sat}	85°C	80	100		mA
Operating voltage	V_f	$P_o = 5 \text{ mW}$			1.6	V
Differential resistance	R	$P_o = 5 \text{ mW}, 85^\circ\text{C}$		7	10	Ohm
Capacitance	C			1.2		pF
Front/Back output power ratio	P_f/P_b		7		60	
Side mode suppression ratio	SMSR	$P_o = 5 \text{ mW}$	35			dB
Wavelength	λ	see table below				
Wavelength temperature coefficient	$d\lambda / dt$			0.09		nm/°C
Thermal Impedance	Zth			140		K/W
Beam divergence (Horizontal)	Θ_H	FWHM		30		degree
Beam divergence (Vertical)	Θ_V	FWHM		35		degree
Relative intensity noise	RIN	$P_o = 5 \text{ mW}$			-132	dB/Hz ^{1/2}
Bandwidth	f_{3db}	I = 60 mA, 85°C	18	21		GHz
Relaxation oscillation frequency	f_r	I = 60 mA, 85°C	15.5	17.5		GHz

1300nm 28 Gb/s NRZ DFB Laser Diode Chips

Available Wavelengths

PN for NRZ	Channel	Symbol	Conditions	Min	Typ	Max	Unit
IND02D000D102	CWDM-L0	λ	-20 °C to 85 °C	1264.50	1271.00	1277.50	nm
IND02D100D102	CWDM-L1			1284.50	1291.00	1297.50	nm
IND02D200D102	CWDM-L2			1304.50	1311.00	1317.50	nm
IND02D300D102	CWDM-L3			1324.50	1331.00	1337.50	nm
IND02C000D102	CWDM-C0	λ	-20 °C to 95 °C	1264.50	1271.00	1277.50	nm
IND02C100D102	CWDM-C1			1284.50	1291.00	1297.50	nm
IND02C200D102	CWDM-C2			1304.50	1311.00	1317.50	nm
IND02C300D102	CWDM-C3			1324.50	1331.00	1337.50	nm
IND02C400D102	CWDM-C4			1344.50	1351.00	1357.50	nm
IND02C500D102	CWDM-C5			1364.50	1371.00	1377.50	nm
IND02L000D102	LWDM-L0	λ	I=40 mA, 50 °C	1272.49	1273.54	1274.49	nm
IND02L100D102	LWDM-L1			1276.84	1277.89	1278.84	nm
IND02L200D102	LWDM-L2			1281.21	1282.26	1283.21	nm
IND02L300D102	LWDM-L3			1285.61	1286.66	1287.61	nm
IND02L400D102	LWDM-L4			1294.51	1295.56	1296.51	nm
IND02L500D102	LWDM-L5			1299.00	1300.05	1301.00	nm
IND02L600D102	LWDM-L6			1303.53	1304.58	1305.53	nm
IND02L700D102	LWDM-L7			1308.09	1309.14	1310.09	nm
IND02L800D102	LWDM-L8			1290.05	1291.10	1292.05	nm
IND02L900D102	LWDM-L9			1312.68	1313.73	1314.68	nm
IND02LA00D102	LWDM-L10			1268.18	1269.23	1270.18	nm
IND02LB00D102	LWDM-L11			1317.30	1318.35	1319.30	nm
IND02B000D102	Grey 1270	λ	-40 °C ~ +95 °C	1260	1270	1280	nm
IND02B100D102	Grey 1310			1300	1310	1320	nm
IND02B200D102	Grey 1330			1320	1330	1340	nm

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Max Rating	Unit
Operating current	I _{op}	T < 55 °C	60	mA
		T = 55-85 °C	80	mA
Modulation swing			30	mA
Reverse voltage	VR		2	V

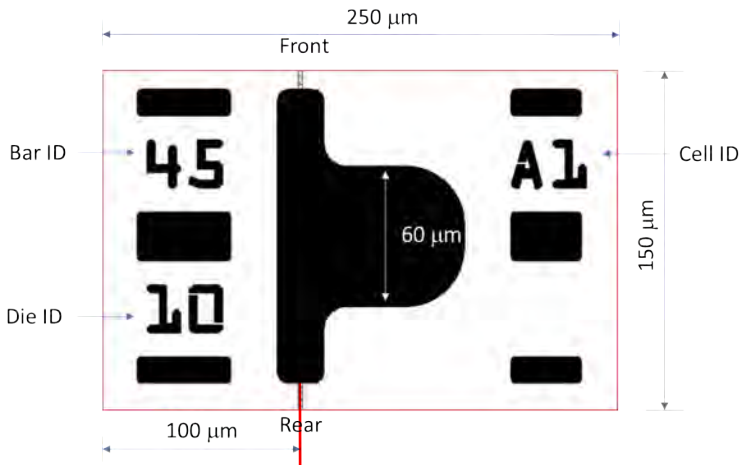
1300nm 28 Gb/s NRZ DFB Laser Diode Chips

Environmental Exposure Ratings

Parameter	Symbol	Conditions	Max Rating	Unit
Operating Temperature	Top		-20 to +95	°C
Storage Temperature	Tstg		-40 to +100	°C
Die Attach Temperature		Max 10 sec.	320	°C
ESD (HBM)			375	V

Chip Dimensions

Parameter	Min	Typical	Max	Unit
Chip width	230	250	270	µm
Chip length	130	150	170	µm
Chip thickness	80	85	90	µm
Bond pad width		65		µm
Bond pad length		60		µm



RoHS Compliance

II-VI is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information

Product Code	Wavelength	Description	Shipment Packaging
IND02C000D102	1271.50 nm	28 Gb/s NRZ Die	Diced wafer on Grip ring ⁽¹⁾

⁽¹⁾ Full diced 3" wafer on UV tape on grip ring Ø 150mm (standard high volume)

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by II-VI before they become applicable to any particular order or contract. In accordance with the II-VI policy of continuous improvement specifications may change without notice. Further details are available from any II-VI sales representative.