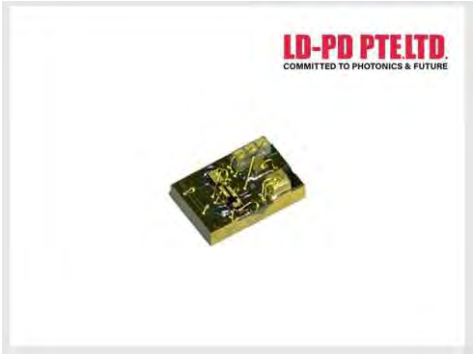
High Speed EML 100 Gb/s per lane Semi-tunable EML COS



Description

LP-ECWDM-100-C-CN-CC is a Distribute Feedback (DFB) edge-emitting laser diode chip on carrier integrated with Electro-absorption Modulator (EAM) which provide a single longitudinal mode at CWDM wavelength and use in cooled applications up to 100 Gb/s. The chip structure is waveguide stripe, including multiple quantum wells (MQWs) active layers and distributed-feedback grating layer for high output power and high extinction ratio design. All chips come from wafers that have been certified using a representative lot of devices that must achieve an acceptable yield for CW, dynamic and ESD tests. LP-E1xxx-100-C-CN-CC, 1xxx=1270, 1290, 1310, 1330

Features

- High output Power
- CWDM EML for 50G Baud PAM4
- High reliability laser and EA modulator

Characteristics

Characteristics for LP-E1xxx-100-C-CN-CC

Chip on carrier operating temperature (Top) is 55°C, except where noted. All parameters are beginning of life (BOL) unless stated otherwise

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Chip Operating Temperature	Top	—		55		℃
Threshold Current (EML)	Ith	CW	—	—	25	mA
Operation Current (LD)	Ild	CW	—	80	120	mA
EAM Offset Voltage	Vea	—	-1.5	—	0	V
EAM P-P Modulation Voltage	Vpp	—	—	1.2	—	V

Optical Output Power	Pop	CW, Ild =80mA, Vea =0V		10	—	mW
Extinction Ratio	Er	CW, Ild =80mA, Vpp =1.2V	4.5	—	—	dB
Peak Wavelength	λ1	CW, Ild =80mA, Vea =0V	1264.5	—	1277.5	nm
	λ2		1284.5	—	1297.5	nm
	λ3		1304.5	—	1317.5	nm
	λ4		1324.5	—	1337.5	nm
Side Mode Suppression Ratio	SMSR	CW, Ild =80mA, Vea =0V	35	—	—	dB
Spectral Width	△λ	CW, -20dB, Ild =80mA, Vea =0V	—	0.2	0.4	nm
Wavelength Temp. Coefficient	△λ/△T	CW	—	0.09	—	nm/℃
Band Width	BW	-3dB	35	—	—	GHz

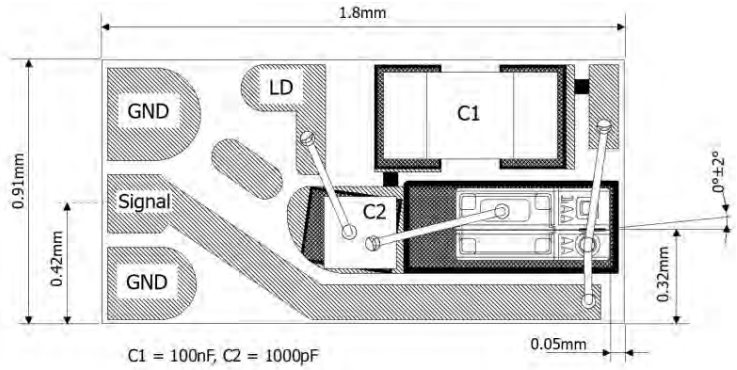
Maximum Power Rating

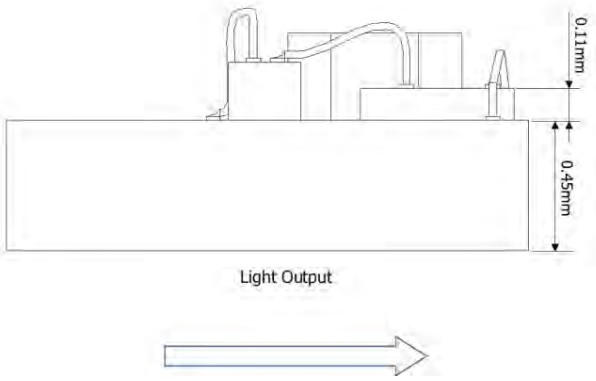
Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet. Exposure to absolute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

No	Parameter	Symbol	Condition	Min	Max	Unit
1	Operating Temperature	Top	-	-5	75	℃
2	Storage Temperature	Tst	-	-40	95	℃
3	Optical Output Power	Po	-	-	20	mW
4	Laser Reverse Voltage	Vr	-	-	-2	V
5	Laser Forward Current	Iop	-	-	150	mA
6	Modulator Reverse Voltage	Vmr	-	-	-3	V
7	Modulator Forward Voltage	Vmf	-	-	1	V

* 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.

Dimensions and Layout





Qualification Information

● Qualification ongoing per Telcordia GR-468.
● Although all chips shipped come from wafers certified to meet stringent burn-in requirements, individual chips should be burned-in to filter out a small percentage of infant failures.

Laser Safety

WARNING: Integration of this laser die into a higher-level assembly or sub-assembly can result in a product that has radiation levels up to Class IIIb per CDRH, 21 CFR 1040. This die-level component has not been registered with the FDA/ CDRH since it is a sub-assembly level component only and requires further integration by the user in order to be biased to produce laser light. The actual light output and safety rating in operation will be a function of the installation and conditions under which it is used, including, but not limited to, the bonding method, heat sinking, thermal environment, and optical coupling design.

Application

● 100G DR1/LR1
● 400G DR4
● 400G FR4
● 400G LR4

Ordering Info

Performance of the laser will depend on a number of factors, including the customer's RF and thermal design, fiber length, wavelength, bit rate and temperature range.

Part Number	Description	Wavelength Specification/Temperature
LP-E1270-100-C-CN-CC	100-Gb/s CWDM EML CoC, 1270 nm	1264.5 nm to 1277.5 nm/ 55°C
LP-E1290-100-C-CN-CC	100-Gb/s CWDM EML CoC, 1290 nm	1284.5 nm to 1297.5 nm/ 55°C
LP-E1310-100-C-CN-CC	100-Gb/s CWDM EML CoC, 1310 nm	1304.5 nm to 1317.5 nm/ 55°C
LP-E1330-100-C-CN-CC	100-Gb/s CWDM EML CoC, 1330 nm	1324.5 nm to 1337.5 nm/ 55°C