OEL-CC-53G-C310

53Gbd EML Chip on Carrier

OEL-CC-53G-C310 is a lumped electro-absorption modulator laser (EML) diode on carrier. It is designed for high-speed digital operation at a controlled temperature range.

KEY FEATURES

- Reliable InGaAsP DFB laser diode butt-joint coupled with electro-absorption (EA) modulator
- Optimized EA structure for high extinction ratio (ER) operation
- Superb chip bandwidth > 40GHz enabled by modulator passivation layer design
- Suitable for 25G/50G NRZ and 53Gbd PAM4 modulation
- In compliance with GR-468-CORE Damp Heat requirements

APPLICATION

- 100G LR1
- 100G DR4
- 400G DR4
- 800G DR8

RECOMMENDED OPERATION TEMPERATURE RANGE

Symbol	Parameter	Min.	Max.	Unit
Tc	Test Temperature	43	53	°C

ELECTRICAL AND OPTICAL CHARACTERISTICS

Expected performance after mounted, not guaranteed. Assembly process may impact the parameter values.

ELECTRICAL AND OPTICAL CHARACTERISTICS (Test temperature=53°C, unless otherwise specified)						
Symbol	**Parameter**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
I_{th}	Threshold Current			15	25	mA
V_{OP}	Operating Voltage	Vea=0V		1.3	1.8	V
Po	Optical Output Power, Broad Area PD	Iop=70mA,Vea=0V	6			mW
DC ER	DC Extinction Ratio, Broad Area PD	Iop=70mA,Vea=-2.5V	7			dB
λc	Center Wavelength	Iop=70mA	1304.5	1311	1317.5	nm
SMSR	Side Mode Suppression Ratio	Iop=70mA	35			dB
Fv	Far-field Angle, Vertical			38		deg
Fh	Far-field Angle, Horizontal			33		deg
f3dB	Small Signal Modulation Bandwidth	Iop=70mA,Vea at operation point		40		GHz

ABSOLUTE MAXIMUM RATINGS

Values should not be exceeded in any conditions to avoid permanent device damage.

ABSOLUTE MAXIMUM RATINGS				
Symbol	**Parameter**	**Min**	**Max**	**Unit**
V_{RL}	LD Reverse Voltage		2	V
If	LD Forward Current		120	mA
Po	Optical Output Power		40	mW
V_{RM}	EA Modulator Reverse Bias	-4	0.5	V
T_{stg}	Storage Temperature	-40	85	℃

RECOMMENDED BONDING CONDITIONS

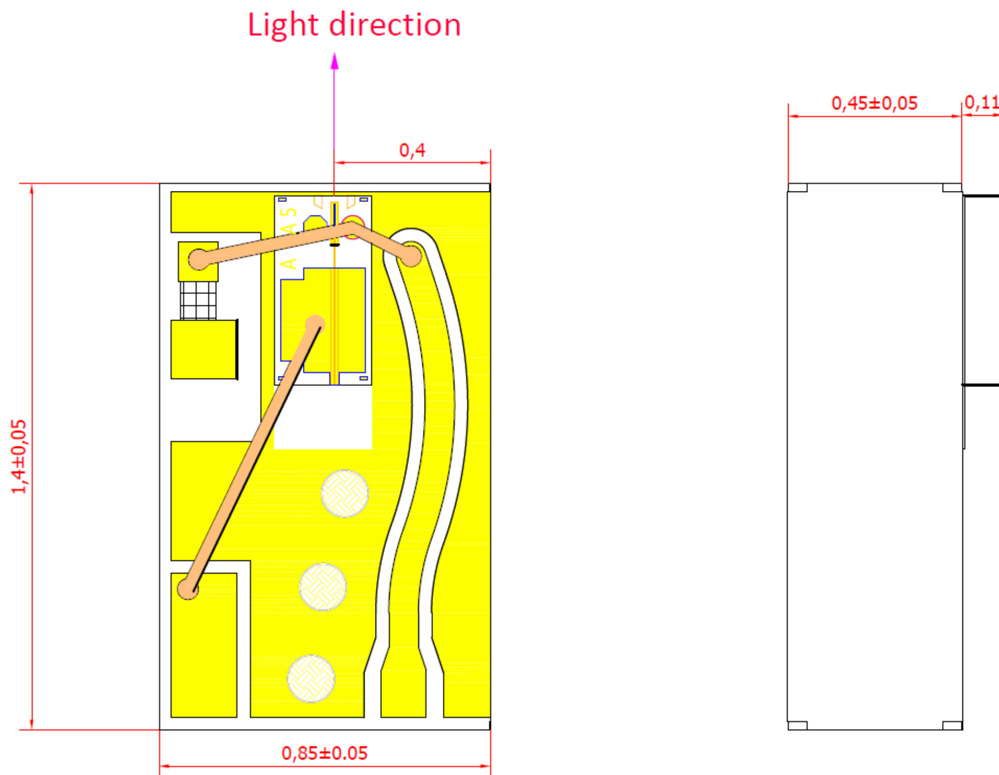
Process	Recommended Condition	
Wire Bonding*	Wire	Au 25um Wire
	Bond type	Ball bond
	Weight	20-25g

*The conditions might be adjusted depending on the bonding equipment.

RELIABILITY

The chip on carrier is subject to burn-in test before shipping. Reliability performance is in compliance with Telcordia GR-468-CORE, Issue 2 (September 2004), "Generic Reliability Assurance Requirements for Optoelectronic Devices Used in Telecommunications Equipment".

MECHANICAL DIMENSIONS (mm)



PACKAGE INFORMATION

✧ Chip on carrier will be delivered on the Gel-pack

DEVICE HANDLING

✧ The chip on carrier is sensitive to electrostatic discharge, which can cause direct or latent damage to laser diodes. Therefore during assembly, precautions for handling electrostatically sensitive devices must be observed. Both waveguide section and cavity facets should not be touched to avoid any damage.

LASER SAFETY

✧ The laser light emitted from the facet of chip is invisible and will be hazardous to the human eye. Avoid looking directly into the facet of chip when the device is in operation.

REVISION HISTORY

Version	Subject	Release Date
1.0	Initial release	2024/5/28

OPTOWAY TECHNOLOGY INC. No.38, Kuang Fu S. Road, Hu Kou, Hsin Chu Industrial Park, Hsin Chu, Taiwan 303
Tel: 886-3-5979798 Fax:886-3-5979737
e-mail: sales@optoway.com http: // www.optoway.com 5/28/2024 V1