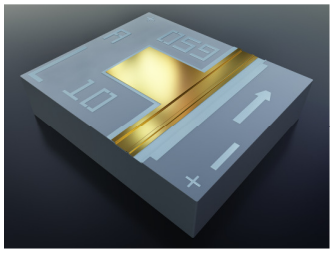
ML1002

1310 nm Fabry-Pérot Laser Diode for 10 Gb/s

Overview

ML1002 is a high-performance ridge waveguide (RWG) Fabry-Pérot laser chip. The laser emits at 1310 nm wavelength and has been designed for optical communications networks operating at up to 10 Gb/s.



Applications

Communications

10 Gigabit Ethernet transceivers
SONET OC-192
Fibre Channel
SDH STM-64

Electro-optical Characteristics

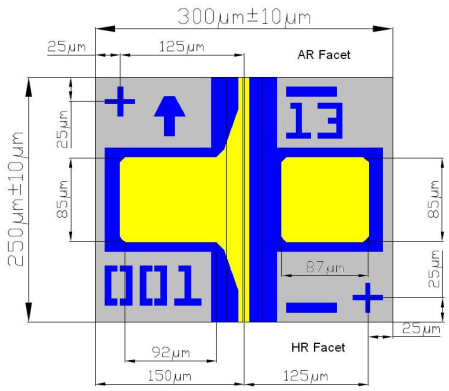
Parameter	Symbol	Min	Typical value	Max	Unit	Test condition*
Optical Output Power**	P_{OPT}	10	-	-	mW	0~85°C
Threshold Current***	I_{TH}	-	10	15	mA	25°C
	I_{TH}	-	22	30	mA	85°C
Operating Current	I_{OP}	-	23	32	mA	25°C, P_{OPT}=5mW
	I_{OP}	-	37	50	mA	85°C, P_{OPT}=5mW
Operating Voltage	V_{OP}	-	1.2	1.4	V	0~85°C, P_{OPT}=5mW
Slope Efficiency	η	0.3	0.37	-	W/A	25°C, P_{OPT}=5mW, 1-7 mW
	η	0.2	0.3	-	W/A	85°C, P_{OPT}=5mW, 1-7 mW
Peak Wavelength	λ	1290	1310	1330	nm	25°C, P_{OPT}=5mW
Wavelength Temperature Coefficient	Δλ/ΔT	-	0.5	-	nm/K	25~85°C, P_{OPT}=5mW
Spectral Width (FWHM)****	Δλ	-	1	2	nm	25°C, P_{OPT}=5mW
Parallel Beam Divergence (FWHM)*****	θ||	-	27	30	°	25°C, P_{OPT}=5mW
Perpendicular Beam Divergence (FWHM)*****	θ⊥	-	41	45	°	25°C, P_{OPT}=5mW
Modulation bandwidth ***	f_{-3dB}	10	11	-	GHz	25°C, $I_{OP}=I_{TH}$+25mA
	f_{-3dB}	8	9	-	GHz	85°C, $I_{OP}=I_{TH}$ +25mA

* All temperatures refer to heatsink temperature
** Kink-free, reliability testing power
*** 1st derivative method
**** RMS, -20 dB
***** Full Width at Half

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Optical Output Power	P_{OPT}	25	mW
LD reverse voltage	V_{RLD}	2	V
LD forward current	I_{FLD}	200	mA
Operating temperature range	T_{OP}	0~85	°C
Storage temperature range	T_S	-40~85	°C

Mechanical Specification



All dimensions in microns
Chip thickness 100 µm
Polarity: p-contact (anode) up

Safety Information

- The laser light emitted from this laser diode is invisible and potentially harmful to the human eye. Avoid eye and skin exposure to the beam, both direct and reflected.
- Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload. Please ensure ESD protection prior to handling the products.
- These Modulight products are not intended for use in systems where product malfunction can reasonably be expected to result in personal injury.

Peak power and wavelength are for safety analysis only, not to present device performance.

Liability note