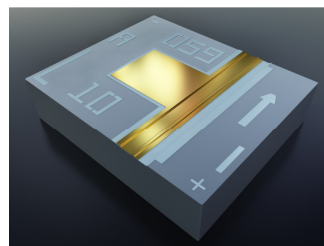


## ML1002

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

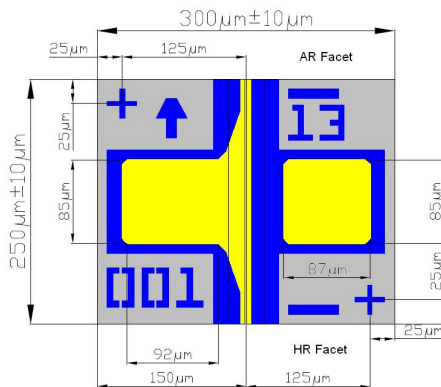
Parameter	Symbol	Min	Typical value	Max	Unit	Test condition*
Optical Output Power**	$P_{OPT}$	10	-	-	mW	0~85°C
Threshold Current***	$I_{TH}$	-	10	15	mA	25°C
		-	22	30	mA	85°C
Operating Current	$I_{OP}$	-	23	32	mA	25°C, $P_{OPT}=5mW$
		-	37	50	mA	85°C, $P_{OPT}=5mW$
Operating Voltage	$V_{OP}$	-	1.2	1.4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

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

### Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Optical Output Power	P <sub>OPT</sub>	25	mW
LD reverse voltage	V <sub>RLD</sub>	2	V
LD forward current	I <sub>FLD</sub>	200	mA
Operating temperature range	T <sub>OP</sub>	0~85	°C
Storage temperature range	T <sub>S</sub>	-40~85	°C

### Mechanical Specification



All dimensions in microns  
 Chip thickness  $100\mu\text{m}$   
 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.

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