

1310 nm DFB Laser Diode Chip for 1.25 Gb/s & 2.5 Gb/s

ML1001



OVERVIEW

ML1000 is a 1310 nm DFB (Distributed Feedback) laser chip with excellent high temperature performance, designed for intermediate and long reach optical transceivers with up to 2.5 Gb/s data rates. Wavelength selection and stabilisation are done by a built-in optical grating.



APPLICATIONS

Gigabit Ethernet transceivers 1X/2X Fibre Channel
SONET OC-48 SDH STM-I-16.1

ELECTRO-OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Conditions *
Optical Output Power	P_{OPT}	7	-	-	mW	-40~85°C
Threshold Current	I_{TH}	-	12	18	mA	25°C
		-	24	40		85°C
Operating Current	I_{OP}	-	26	40	mA	25°C, $P_{OPT}=5mW$
		-	42	65		85°C, $P_{OPT}=5mW$
Operating Voltage	V_{OP}	-	1.15	1.3	V	25°C, $P_{OPT}=5mW$
Slope Efficiency	η	0.22	0.38	-	W/A	25°C, $P_{OPT}=5mW$
		0.15	0.28	-		85°C, $P_{OPT}=5mW$
Peak Wavelength	λ	1287	1307	1327	nm	25°C, $P_{OPT}=5mW$
		1280	-	1355		0~85°C, $P_{OPT}=5mW$
Wavelength Temperature Coefficient	$\Delta\lambda/\Delta T$	-	0.09	-	nm/K	0~85°C, $P_{OPT}=5mW$
Spectral Width (FWHM)**	$\Delta\lambda$	-	0.07	0.2	nm	25°C, $P_{OPT}=5mW$
Parallel Beam Divergence (FWHM)	$\theta_{ }$	-	27	35	°	25°C, $P_{OPT}=5mW$
Perpendicular Beam Divergence (FWHM)	θ_{\perp}	-	35	45	°	25°C, $P_{OPT}=5mW$
Side Mode Suppression Ratio	SMSR	35	43	-	dB	25°C, $P_{OPT}=5mW$
Modulation bandwidth ***	f_{-3dB}	5	-	-	GHz	25°C, $I_{OP}=I_{TH}+16mA$
		4	-	-		25°C, $I_{OP}=I_{TH}+16mA$

* All temperatures refer to heatsink temperature

** -20 dB noise floor

*** Chip-on carrier, ground-signal-ground microwave probe

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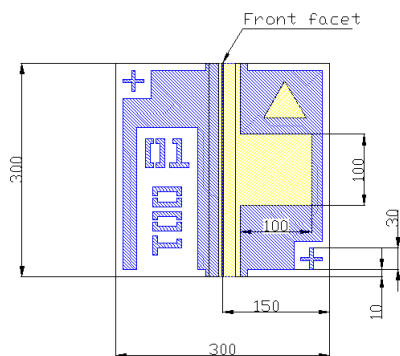
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ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit
Optical Output Power	P_{OPT}	20	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 SPECIFICATIONS



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 but may be harmful to the human eye. Avoid eye 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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