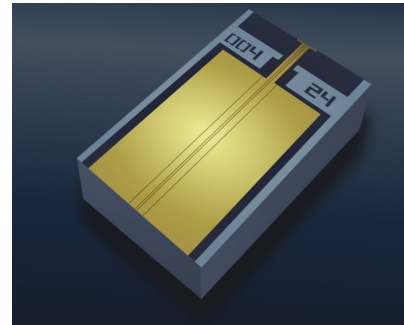


# ML1003

1310 nm high-performance FP chip for pulsed applications

## Overview

Modulight's ML1003 is a high-performance single transverse mode Fabry-Perot laser chip product. The laser emits 300 mW pulsed peak power (10  $\mu$ s PW, 1% DC) at 1310nm wavelength. This bare die laser chip is designed to be used as light source in fiber optic test and measurement equipment.



## Applications

| Defense            | Industrial         | Communications     |
|--------------------|--------------------|--------------------|
| Test & Measurement | Test & Measurement | Test & Measurement |

## Electro-optical Characteristics

| Parameter                                  | Symbol          | Min. | Typical | Max. | Unit |
|--|-----------------|------|---------|------|------|
| Central Wavelength ( $I_{OP} = 750$ mA)    | $\lambda$       | 1290 | 1310    | 1330 | nm   |
| Optical Output Power (Peak Power)          | $P_{OPT}$       | 300  | -       | -    | mW   |
| Operating Current ( $P_{OPT} = 300$ mW)    | $I_{OP}$        | -    | 700     | 750  | mA   |
| Operating Voltage ( $P_{OPT} = 50$ mW, CW) | $V_{OP}$        | -    | 1.3     | 2.0  | V    |
| Slope Efficiency                           | $\eta$          | -    | 0.45    | -    | W/A  |
| Threshold Current                          | $I_{TH}$        | -    | 40      | 60   | mA   |
| Spectral Width                             | $\Delta\lambda$ | -    | 4       | 7    | nm   |

All above values are for operation @ 25°C. If not otherwise stated, the characteristics are for operation under pulse current (pulse width = 10  $\mu$ s and duty cycle 1 %).

## Absolute Maximum Ratings

| Parameter                   | Symbol    | Rating              | Unit |
|-----------------------------|-----------|---------------------|------|
| LD Forward Current          | $I_{FLD}$ | 1000                | mA   |
| Operating Temperature Range | $T_{OP}$  | 0...70 <sup>1</sup> | °C   |
| Operating Temperature Range | $T_{ST}$  | -40...85            | °C   |

<sup>1</sup> A non-condensing environment should be ensured over the useful temperature range.

### Mechanical Specifications

| Parameter      | Symbol | Value | Unit |
|----------------|--------|-------|------|
| Cavity Length  | L      | 700   | μm   |
| Chip Width     | W      | 300   | μm   |
| Chip Thickness | H      | 100   | μm   |

### 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

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