

DFB-2004-3

Description

2.0 μm DFB laser diodes (in the following a 2004nm device is exemplary presented) show unique device performance to meet the requirements of our customers.

Their high side mode suppression ratio (SMSR) and high spectral purity make them perfectly suited for applications like e.g. CO_2 spectroscopy. Mode-hop free DFB emission with a high side mode suppression ratio (SMSR) around 35dB is guaranteed for the device in the entire specified temperature and current range of operation.

Spectrum

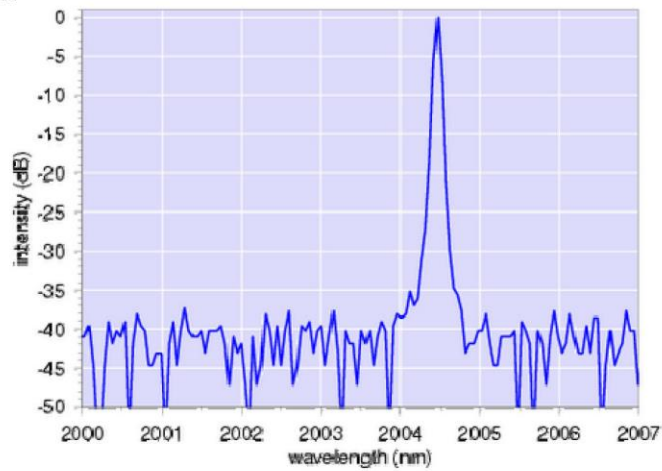


Fig. 1: Spectrum of a 2004nm DFB Laser diode.

Applications

- trace gas sensing of CO_2

Absolute Maximum Ratings

| Parameter | Symbol | Unit | Rating |
|-----------------------|-------------|------|------------|
| LD forward current | I_f | mA | 100 |
| LD reverse voltage | U_r | V | 1.5 |
| Operating temperature | T_{op} | ° C | -20 ... 50 |
| Storage temperature | T_{store} | ° C | -20 ... 85 |

Electrical/Optical Characteristics

| Parameter | Symbol | Unit | min | typical | max |
|-------------------------------|-----------|-------|------|---------|------|
| Wavelength | λ | nm | 2003 | 2004 | 2005 |
| Side mode supression | | dB | 32 | 35 | 40 |
| Optical output power | P_{opt} | mW | | 3 | |
| Forward current | I_f | mA | 40 | 50 | 100 |
| Threshold current | I_{th} | mA | 20 | 25 | 50 |
| Beam divergence parallel | | deg. | 25 | 30 | 35 |
| Beam divergence perpendicular | | deg. | 45 | 50 | 60 |
| Slope efficiency | e | mW/mA | 0.08 | 0.12 | 0.15 |
| Current tuning rate | C_I | nm/mA | 0.01 | 0.02 | 0.03 |
| Temperature tuning rate | C_T | nm/K | 0.18 | 0.2 | 0.22 |

Packages

Different packaging options are available for those LD. Shown here are standard TO headers (e.g. TO5.6, TO9, TO8) with and without Peltier cooler. Mounting on customer specific submounts and bare chips are also available upon request.



plain chip



TO 5.6 mm



TO 9 mm



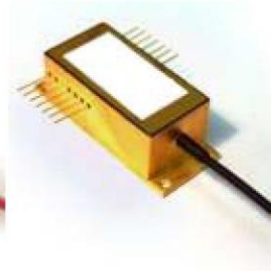
TO 5 with integrated
TEC and thermistor



TO 8 with integrated
TEC and thermistor



fiber coupled



fiber coupled with TEC and
thermistor



C-mount