DenseLight SEMICONDUCTORS

# Product Family Brief

# O-Band High Power DFB Laser Source

## (100mW CW CWDM4 DFB Chips)

The DS-DFx0701D-1xx0-TM, O-Band High Power DFB Series is an InGaAsP-based and uncooled distributed feedback laser optimized for data comm application. Denselight's advanced technology enables mode-hop-free tunability, high power, excellent SMSR, and high accuracy of lasing wavelength.

## FEATURES

- Uncooled operation from -5 to 70°C
- Min output power of 100mW at 70°C, 270mA
- Lasing wavelength of 1271 / 1291 / 1311 / 1331 nm
- Typical SMSR ≥ 40dB
- Designed for CW transmission

## APPLICATIONS

* CW laser
* Ethernet/Datacenter Interconnect
* Si Ph 400G/800G optical module
* Si Ph based light engine
* CPO Application

## ELECTRICAL AND OPTICAL CHARACTERISTICS

| Parameter | Symbol | Conditions | Min | Typical | Max | Unit |
|---|---|---|---|---|---|---|
| Optical Output Power | $P_o$ | CW, If=300mA, Tc=70degC | 100 | 120 | - | mW |
| Center wavelength | $\lambda_c$ | CW, If=300mA, Tc=25~70degC | 1264.5 | 1271 | 1277.5 | nm |
| | | | 1284.5 | 1291 | 1297.5 | nm |
| | | | 1304.5 | 1311 | 1317.5 | nm |
| | | | 1324.5 | 1331 | 1337.5 | nm |
| Operating current | $I_{op}$ | CW, Po=100mW, Tc=70degC | - | 270 | 350 | mA |
| Forward voltage | $V_f$ | CW, Po=100mW, Tc=70degC | - | 1.45 | 1.6 | V |
| Side Mode Suppression Ratio | SMSR | CW, Po=100mW | 35 | 45 | - | dB |
| Wavelength change with temperature | $\Delta\lambda/\Delta T$ | CW, Po=100mW | 0.08 | 0.1 | 0.12 | nm/°C |
| Far Field Divergence Angle Horizontal | $\theta_H$ | CW, Po=100mW | - | 20 | - | degree |
| Far Field Divergence Angle Vertical | $\theta_V$ | CW, Po=100mW | - | 28 | - | degree |

## DIE DIMENSION

| Die dimension | Typical |
|---|---|
| Length | 850±20 um |
| Width | 250±20 um |
| Thickness | 100±10 um |