Compact Fiber coupled CW Diode Bars at 9xx nm

QD-Cxyzz- FLΦ & QD-Cxyzz- FHΦ

DESCRIPTION

The new QD-Cxyzz-FLΦ & QD-Cxyzz-FHΦ series are equipped with an ultra compact and leak proof package. Operation wavelength is in the wavelength window 9xx nm. These products integrate highly performing micro optics. Optical power, up to 40W CW, is delivered through a single multimode fiber terminated by a SMA connector. Small fiber diameter and low numerical aperture lead to high brightness and high optical power density. The low profile package QD-Cxyzz-FLΦ (only 38cm³) is proposed with red pilot beam or PIN photodiode as options. The low thermal resistance of the assembly allows efficient heat transfer and thermal regulation. These products are ideal for applications which request high brightness sources for efficient pumping solid-state lasers, medical applications, material processing, micromachining...

MAIN FEATURES

- Up to 40W CW optical output power
- 9xx nm wavelength range
- Optical connectors "SMA 905 (male)
- Standard fiber length : 1.5m, other length on request
- Conductively cooled package
- High compactness and leak proof package
- Improved Thermal Resistance

SPECIFICATIONS

Wavelength range according to the Table:

<table>
<thead>
<tr>
<th>λ (nm)</th>
<th>915</th>
<th>940</th>
<th>980</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>QD-Cx820- F_4</th>
<th>QD-Cx830- F_4</th>
<th>QD-Cx940- F_4</th>
<th>QD-Cx820- F_6</th>
<th>QD-Cx830- F_6</th>
<th>QD-Cx940- F_6</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber core diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>µm</td>
</tr>
<tr>
<td>CW output power</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>W</td>
</tr>
<tr>
<td>Spectral width (FWHM)</td>
<td>3 Typ.</td>
<td>3 Typ.</td>
<td>3 Typ.</td>
<td>3 Typ.</td>
<td>3 Typ.</td>
<td>3 Typ.</td>
<td>nm</td>
</tr>
<tr>
<td></td>
<td>4 Max</td>
<td>4 Max</td>
<td>5 Max</td>
<td>4 Max</td>
<td>4 Max</td>
<td>5 Max</td>
<td>nm</td>
</tr>
<tr>
<td>Threshold current</td>
<td>7</td>
<td>7</td>
<td>11</td>
<td>7</td>
<td>7</td>
<td>11</td>
<td>A</td>
</tr>
<tr>
<td>Operating current</td>
<td>32 Typ.</td>
<td>45 Typ.</td>
<td>57 Typ.</td>
<td>30 Typ.</td>
<td>42 Typ.</td>
<td>55 Typ.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>38 Max</td>
<td>52 Max</td>
<td>65 Max</td>
<td>38 Max</td>
<td>50 Max</td>
<td>62 Max</td>
<td>A</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>&lt; 2</td>
<td>&lt; 2</td>
<td>&lt; 2</td>
<td>&lt; 2</td>
<td>&lt; 2</td>
<td>&lt; 2</td>
<td>V</td>
</tr>
<tr>
<td>Total efficiency</td>
<td>40</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>44</td>
<td>44</td>
<td>%</td>
</tr>
</tbody>
</table>

Fiber Numerical Aperture: 0.22
Temperature: +25°C
(internal CTN: 10kΩ @ 25°C)

Note:
- Wavelength is given by “x” according to the Table.
- Standard tolerance on wavelength is +/- 5 nm.
- Variation of wavelength is approximately 0.3 nm/°C.
- Power monitoring (PIN photodiode) or Pilot laser beam (Red aiming beam = 1mW@635nm) upon request.
- Fiber with NA 0.16 available on request.
- Standard fiber coating: metallic, PVC coating on request.
- Operating at higher power or higher temperature will accelerate component ageing, increase threshold current and decrease slope efficiency.

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### ABSOLUTE MAXIMUM RATINGS

<table>
<thead>
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<th>QD-Cx940- F_6</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Reverse Voltage</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volt</td>
</tr>
<tr>
<td>Case Operating temperature</td>
<td>+5 to +35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 to +65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

### PACKAGE SPECIFICATIONS
- dimensions are in mm
- standard tolerances are ± 0.2 mm

### Possibility of one Option (FL package)

- No Option
  - 1: nc; 0 V PIN anode
  - 2: nc; +5 V PIN cathode
  - 3: CTN (thermistor)
  - 4: CTN (thermistor)

### With both Options: “Pilot Beam” & PIN (FH package)

- J 1
  - 1: Pilot: 0 V
  - 2: Pilot: +5 V

- J 2
  - 1: nc
  - 3: CTN PIN anode
  - 4: CTN