MID-IR LED 43-CG

Light emitting diodes LED 43-CG (with glass cover) are designed to emit in the Mid-Infrared spectral range from 4100 to 4300 nm. They are fabricated from narrow band-gap InAsSbP/InAs-based hetero-structures lattice matched to InAs substrate.

Specifications (T = 25°C):

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Conditions</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Emission Wavelength</td>
<td>µm</td>
<td>qCW mode, I = 150mA</td>
<td>4.10</td>
<td>4.30</td>
</tr>
<tr>
<td>Emission Band (FWHM)</td>
<td>nm</td>
<td>qCW mode, I = 150mA</td>
<td>400</td>
<td>1200</td>
</tr>
<tr>
<td>Quasi-CW Optical Power</td>
<td>µW</td>
<td>f = 0.5kHz, pulse duration 1ms, duty cycle 50%, I = 200mA</td>
<td>80 (typ 180)</td>
<td>-</td>
</tr>
<tr>
<td>Pulsed Peak Power</td>
<td>µW</td>
<td>f = 2kHz, pulse duration 20µs, duty cycle 1%, I = 1A</td>
<td>500 (typ 1500)</td>
<td>-</td>
</tr>
<tr>
<td>Quasi-CW Operation Current</td>
<td>mA</td>
<td>qCW mode</td>
<td>-</td>
<td>250</td>
</tr>
<tr>
<td>Pulsed Operation Current</td>
<td>A</td>
<td>pulsed mode</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Voltage</td>
<td>V</td>
<td>qCW mode, I = 200mA qcw</td>
<td>0.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td></td>
<td>0°C to +50°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td></td>
<td>0°C to +40°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soldering Temperature</td>
<td></td>
<td>180°C (&lt;3 seconds, 3mm from case)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Typical Performance:

### Typical spectrum (qCW³)

- **Intensity, a.u.**
  - Original
  - With atmospheric impact

- **Wavelength, nm**
  - 3000, 3500, 4000, 4500, 5000, 5500

### Typical optical power characteristic (qCW³)

- **Power, μW**
  - 0, 20, 40, 60, 80, 100

- **Current, mA**
  - 0, 50, 100, 150, 200, 250

### Typical current-voltage characteristic (qCW³)

- **Current, mA**
  - -800, -600, -400, -200, 0, 200, 400, 600, 800

- **Voltage, mV**
  - -200, 0, 200, 400, 600, 800

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1. Parameter tested for each device.
2. Parameter tested for representative sampling.
3. qCW mode: repetition rate: 0.5 KHz, pulse duration: 1 ms, duty cycle: 50%.
4. Pulse mode: repetition rate: 0.5 KHz, pulse duration: 20 μs, duty cycle: 1%.

### Radiant characteristic (far-field pattern)

TO-18 package with glass cover
To drive the LED we recommend the following basic circuit connection:

We recommend using Quasi Continuous Wave (qCW) mode with a duty cycle 50% or 25% to obtain maximum average optical power and short Pulse modes to obtain maximum peak power. Hard CW (continus wave) mode is NOT recommended.

### Important Caution:

- Please check your connection circuit before turning on the LED;
- Please mind the LED polarity: anode is marked with a RED dot; REVERSE voltage applying is FORBIDDEN;
- Please do not connect the LED to the multimeter;
- Please control the CURRENT applied to the LED in order NOT to EXCEED the maximum allowable values;
- Please do not touch glass covering and do not apply any force to it;
- Please observe the operating and storage temperature, exceeding the allowable range may cause irreparable damage of glass covering.
Package Drawing: