LD65F6S-A/B/C
InGaAlP Laser Diode
Quantum Semiconductor International Co., Ltd.

OVERVIEW

LD65F6S-A/B/C is a MOCVD grown 650nm band InGaAlP laser diode with quantum well structure. It's an attractive light source, with a typical light output power of 10mW and low operating current for optoelectronic devices such as Optical Pick-up & Bar Code Reader.

APPLICATION
- Optical Pick-up
- Laser Module
- Bar Code Reader

FEATURES
- Visible Light Output : $\lambda_p = 650$ nm
- Optical Power Output : 10mW CW
- Package Type : TO-18 (5.6mm$\phi$)
- Built-in Photo Diode for Monitoring Laser Diode

ELECTRICAL CONNECTION

Bottom View

<table>
<thead>
<tr>
<th>Pin Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

Fig. 1
LD65F6SA

Fig. 2
LD65F6SB

Fig. 3
LD65F6SC
### ABSOLUTE MAXIMUM RATING at Tc=25°C

<table>
<thead>
<tr>
<th>Items</th>
<th>Symbols</th>
<th>Values</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>Optical Output Power</td>
<td>P</td>
<td>12</td>
<td>mW</td>
</tr>
<tr>
<td>Laser Diode Reverse Voltage</td>
<td>V</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>Photo Diode Reverse Voltage</td>
<td>V</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Topr</td>
<td>-10 ~ +60</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td>-40 ~ +85</td>
<td>°C</td>
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### ELECTRICAL and OPTICAL CHARACTERISTICS at Tc=25°C

<table>
<thead>
<tr>
<th>Items</th>
<th>Symbols</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Condition</th>
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<tbody>
<tr>
<td>Optical Output Power</td>
<td>Po</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>mW</td>
<td>-</td>
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<tr>
<td>Threshold Current</td>
<td>Ith</td>
<td>-</td>
<td>40</td>
<td>50</td>
<td>mA</td>
<td>-</td>
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<tr>
<td>Operating Current</td>
<td>Iop</td>
<td>-</td>
<td>60</td>
<td>80</td>
<td>mA</td>
<td>Po=10mW</td>
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<tr>
<td>Operating Voltage</td>
<td>Vop</td>
<td>-</td>
<td>2.3</td>
<td>2.6</td>
<td>V</td>
<td>Po=10mW</td>
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<tr>
<td>Lasing Wavelength</td>
<td>λp</td>
<td>645</td>
<td>655</td>
<td>660</td>
<td>nm</td>
<td>Po=10mW</td>
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<tr>
<td>Beam Divergence</td>
<td>θ</td>
<td></td>
<td></td>
<td>6</td>
<td>9</td>
<td>12</td>
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<tr>
<td></td>
<td>θ ⊥</td>
<td>24</td>
<td>28</td>
<td>35</td>
<td>deg</td>
<td>Po=10mW</td>
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<tr>
<td>Beam Angle</td>
<td>Δθ</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>±1.5</td>
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<tr>
<td></td>
<td>Δθ ⊥</td>
<td>-</td>
<td>-</td>
<td>±2.5</td>
<td>deg</td>
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<tr>
<td>Monitor Current</td>
<td>Im</td>
<td>0.1</td>
<td>0.2</td>
<td>0.5</td>
<td>mA</td>
<td>Po=10mW</td>
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<tr>
<td>Optical Distance</td>
<td>ΔX, ΔY, ΔZ</td>
<td>-</td>
<td>-</td>
<td>±60</td>
<td>μm</td>
<td>-</td>
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</tbody>
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NOTICE : LD65F6S-A/B/C to be operated on APC

The above product specifications are subject to change without notice.
EXAMPLE of REPRESENTATIVE CHARACTERISTICS

Optical Power vs. Forward Current

![Optical Power vs. Forward Current Graph]

Wavelength vs. Temperature

![Wavelength vs. Temperature Graph]

Far Field Pattern

![Far Field Pattern Graph]
PACKAGE DIMENSION
PACKING

Dimensions:
- Length: 129.20 ± 0.20
- Width: 124.50 ± 0.10
- Height: 123.50 ± 0.10
- Depth: 117.50 ± 0.10
- Inner dimensions:
  - Side 1: 6.50 ± 0.10 x 23.00 ± 0.10
  - Side 2: -11.00 ± 0.10 x 10.00 ± 0.10
- Outer dimensions:
  - Side 1: 34.00 ± 0.10 x 15.00 ± 0.10
  - Side 2: 2.00 ± 0.10 x 3.00 ± 0.10
  - Side 3: 15.50 ± 0.10

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