Overview

The FLEX Front Light Panel optical film is designed to laminate to the front surface of JDI reflective display (LPM013M126A) to provide high quality on-demand display lighting. This thin plastic panel incorporates only a single LED which enables product designers to develop ultra-thin devices and minimize battery use.

- One low-power LED (included in Front Light)
- Over 80x less power compared to traditional backlighting
- 0.06 mm thick FLEX film is over 5x thinner than alternative lightguides

Mechanical

Flexible film allows for different placement options for the light source (examples below)

All dimensions in mm

12378-03
UNDER DISPLAY

1.00 PITCH

NEGATIVE CONTACT (-)

POSITIVE CONTACT (+)

DETAIL A (TYP)

DETAIL A
1.28” (Color) Front Light Panel
12378-xx | Product Data Sheet | 2018

**Electrical**

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Typical</th>
<th>Absolute Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Current</td>
<td>$I_F$</td>
<td>5</td>
<td>25</td>
<td>mA</td>
</tr>
<tr>
<td>Pulse Forward Current</td>
<td>$I_{FP}$</td>
<td>--</td>
<td>80</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>$V_R$</td>
<td>--</td>
<td>5</td>
<td>V</td>
</tr>
</tbody>
</table>

**Optical**

1.28” JDI + Front Light (12378-01)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>TYP.</th>
<th>Unit</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewing Angle OR &gt;2</td>
<td>$V$</td>
<td>11</td>
<td>60</td>
<td>$^\circ$ (Degree)</td>
</tr>
<tr>
<td></td>
<td>$\Theta$</td>
<td>12</td>
<td>30</td>
<td>[Remark 1]</td>
</tr>
<tr>
<td></td>
<td>$H$</td>
<td>21</td>
<td>65</td>
<td>$^\circ$ (Degree)</td>
</tr>
<tr>
<td></td>
<td>$\Theta$</td>
<td>22</td>
<td>65</td>
<td>[Remark 2]</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>$CR$</td>
<td>14</td>
<td>--</td>
<td>[Remark 2]</td>
</tr>
<tr>
<td>Front light ON</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Remark 1: Viewing Angle

Remark 2: Definition of Contrast Ratio

Contrast Ratio (OR) = Reflection intensity in white display / Reflection intensity in black display

Measurements taken with a Minolta Chroma Meter CS-100 at a 17” view distance

Example ZIF Connectors:
- Molex 503480-0400
- Molex 52745-0497
- Molex 54560-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492

For more information:
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