Overview

The FLEX Front Light Panel optical film is designed to laminate to the front surface of Sharp reflective display (LS027B7DH01) 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)

11103-01
11103-03
11103-06 PRELIMINARY
## 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>10</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>

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

## Optical

### 2.7” Sharp + Front Light (11103-03)

<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</td>
<td>V</td>
<td>$\Theta_{11}$</td>
<td>65</td>
<td>$\Theta_{12}$</td>
</tr>
<tr>
<td>OR &gt; 2</td>
<td>H</td>
<td>$\Theta_{21}$</td>
<td>30</td>
<td>$\Theta_{22}$</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>Front light ON</td>
<td>CR</td>
<td>10</td>
<td>--</td>
</tr>
</tbody>
</table>

Remark 1: Viewing Angle

Remark 2: Definition of Contrast Ratio

$$\text{Contrast Ratio (OR)} = \frac{\text{Reflection intensity in white display}}{\text{Reflection intensity in black display}}$$

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

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