Power Supply

The OLED requires a 1.65-3.3V supply for its logic circuits (VDD) and a 7-7.5V supply for its display circuitry (VCC). Fortunately, it features a charge-pump boost converter to generate a 7V supply (VCC) from 3.3-4.2V. The charge-pump input voltage is taken from the VBAT line.

SJ3, closed by default, shorts the VDD and VBAT lines. This way the same supply you’re using to power the logic can be boosted for the VCC supply as well. In this case, your VDD supply should be around 3.3V.

VDD current < 300 uA
VCC current (Internally generated) = 5.8-20.9mA
VCC current (Externally supplied) = 1.7-6.9mA

3.3 <= VBAT <= 4.2

Interface selection

The SSD1306 can be controlled via SPI, I2C, or a parallel interface.

Use the BS1 & BS2 jumpers to select the interface. The breakout defaults to SPI (BS1 and BS2 connected to ground/0).

<table>
<thead>
<tr>
<th>Interface</th>
<th>BS1</th>
<th>BS2</th>
<th>VDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPI</td>
<td>0</td>
<td>0</td>
<td>VDD</td>
</tr>
<tr>
<td>I2C</td>
<td>1</td>
<td>0</td>
<td>0x3C</td>
</tr>
<tr>
<td>8-bit (6800)</td>
<td>0</td>
<td>1</td>
<td>0x3D</td>
</tr>
<tr>
<td>8-bit (8080)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

The D/C jumper should be open if SPI or parallel interfaces are used. In those interfaces this pin determines whether incoming signals are data or command.

In I2C mode, D/C sets the lower bit of the 7-bit address. Short it one way or the other.

D/C I2C Address
0x3C
0x3D

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v04