**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.

$$1.65 \leq VDD \leq 3.3$$

$$3.3 \leq VBAT \leq 4.2$$

VCC (7.0-7.5V) will be generated by on-board DC-DC converter, as long as C3 and C2 are present. It's boosted up from VBAT.

VDD current < 300 μA

VCC current (Internally generated) = 5.8-20.9mA

VCC current (Externally supplied) = 1.7-6.9mA

**Interface selection**

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

<table>
<thead>
<tr>
<th>Interface</th>
<th>BS1</th>
<th>BS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPI</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I2C</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8-bit (8000)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8-bit (8080)</td>
<td>1</td>
<td>1</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.

**Design by:** Joel Bartlett

**Revision By:** Andy England

**Date:** 12/4/2017 1:49 PM

**Sheet:** 1/1

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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.

**D/C jumper**

Connects SDA and SCL to 4.7k pull-up resistors.

**VDD**

VDD (7.0-7.5V) will be generated by on-board DC-DC converter, as long as C3 and C2 are present. It's boosted up from VBAT.

- C1P and C1N are shorted for permanent I2C mode.
- BS1 is pulled HIGH and BS2 is Pulled LOW for permanent I2C mode.
- D1 (SDAin) and D2 (SDAout) are shorted for permanent I2C mode.
- BS1 is pulled HIGH and BS2 is Pulled LOW for permanent I2C mode.
- D1/MOSI is Pulled LOW for permanent I2C mode.

**VCC (3.3V-5.0V)**

VCC current (Internally generated) = 5.8-20.9mA

VCC current (Externally supplied) = 1.7-6.9mA

**OLED**

- VDD (3.3V-5.0V)
- GND
- VCOMH
- VSS
- VCC
- IREF
- VLSS
- VBAT
- CS
- RESET
- D/C
- E/RD
- R/W
- D0/SCK
- D1/MOSI
- D2
- D3
- D4
- D5
- D6
- D7

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