OLED Display

Sabernetics Tech

Description

The OLED Display is a simple cost effective solution for interfacing to a small Organic Light-Emitting Diode (OLED) Display based on the SSD1306 driver. The OLED Display is controlled via I²C Fast-mode, with a bit rate up to 400kbit/s. Only 4 wires are needed – 5V, GND, SDA, SCL.

Features

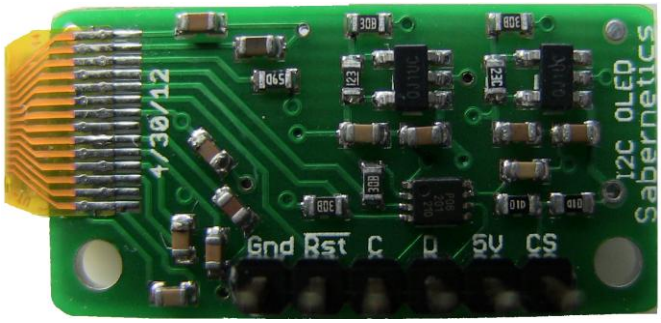
- Monochrome (Light Blue)
- Resolution: 96 x 16
- Overall: 29.65 x 14.88 x 3.86 (mm)
- Panel: 21.1 x 9.2 x 1.6 (mm)
- Visible Area: 21.104 x 3.504 (mm)
- 256 step contrast/brightness control
- Embedded display buffer
- Fast-mode I²C (400Khz)
- Embedded horizontal and vertical scrolling functions
- Low operating current
- Operating temperature: -40°C – 85°C
- CS Pin to communicate with multiple displays on the same I2C line. CS Pin can also be used to determine the I2C voltage level. (Default 5V)

Pin Description

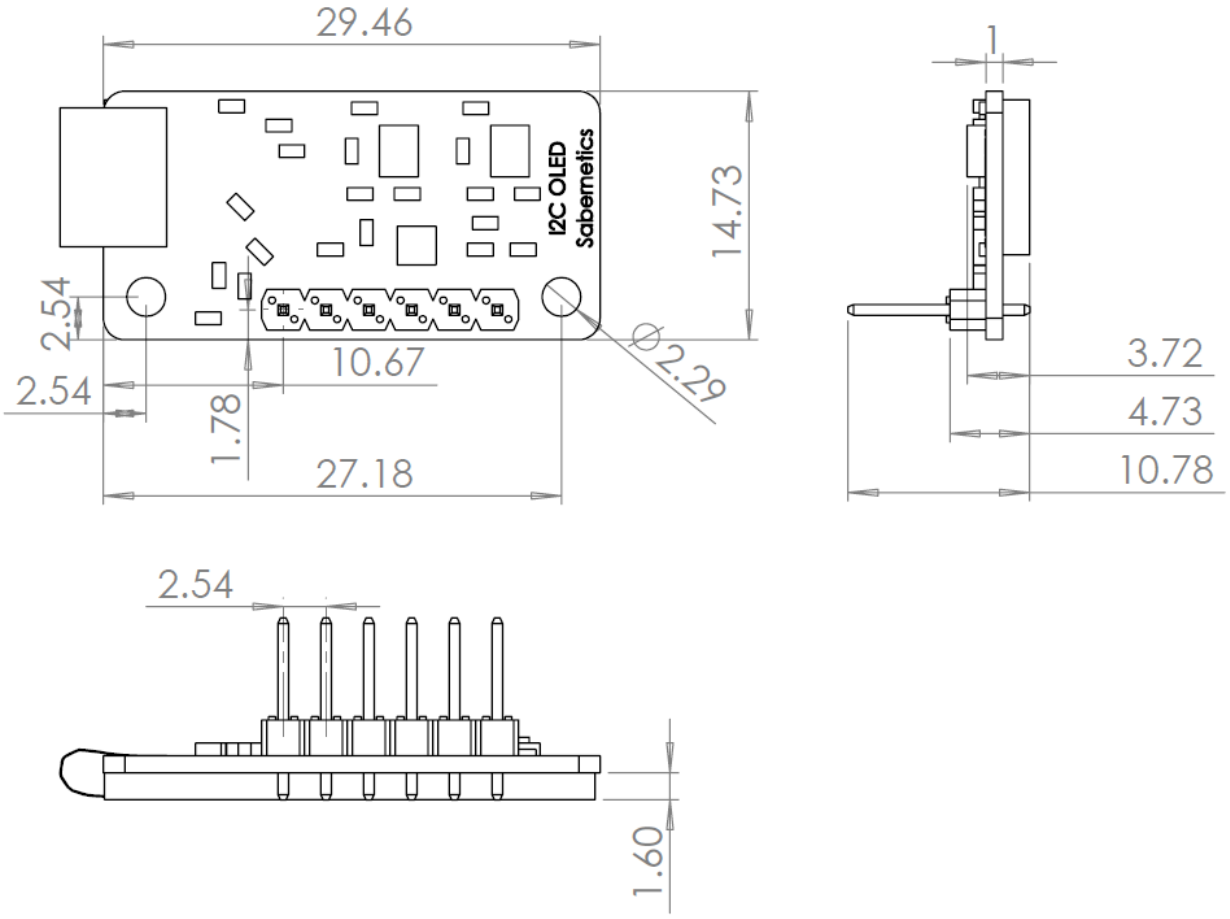
Pin Name	Description	Parameter
Gnd	V_{ss} – Ground Pin	0 V
Rst	Reset	Active Low
C	SCL	(0V – V_{CS})
D	SDA	(0V – V_{CS})
CS	V_{CS} – Chip Select	(0V – 5V)
5V	V_{dd} –Power Supply	5V

SSD1306 Controller

Please refer to the SSD1306 Datasheet for information on I²C communications and register. Datasheet and sample code and drivers can be found at www.Sabernetics.com



Dimensions


29.46
14.73
I2C OLED
Sabernetics
2.54
2.54
10.67
1.78
27.18
Ø2.29
1
3.72
4.73
10.78
2.54
1.60

Absolute Maximum Ratings

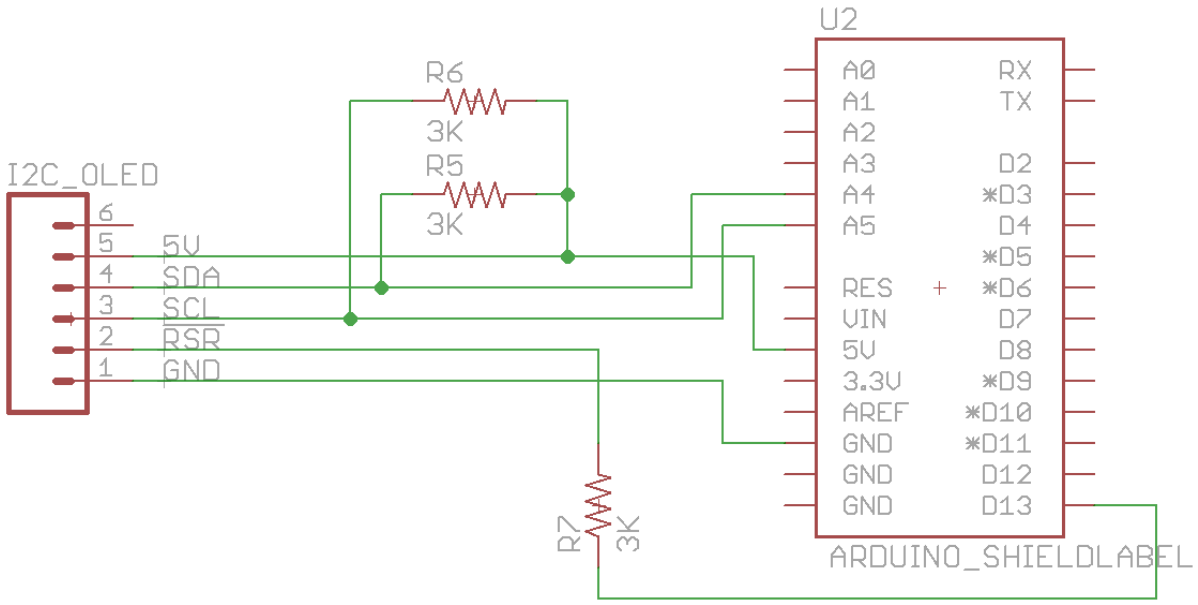
Symbol	Parameter	Ratings	Units
V_{in}	Input Voltage	7	V

Recommended Operating Conditions

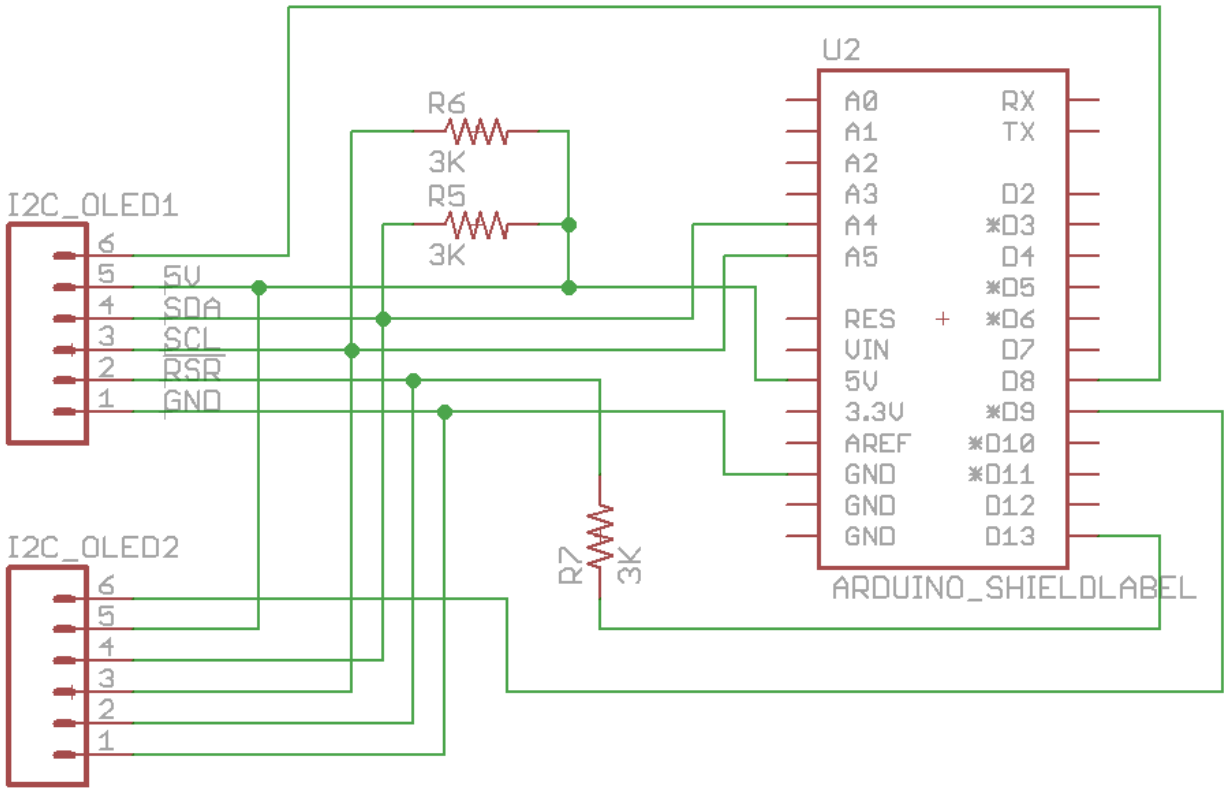
Symbol	Parameter	Min	Typ.	Max	Unit
V_{in}	Input Voltage	4.1		6	V
I_{max}	50% Active pixels, Contrast 0x40		15		mA
	100% Active pixels, Contrast 0x40		23		
	50% Active pixels, Contrast 0x81		17.5		
	100% Active pixels, Contrast 0x81		27.5		

Typical Application

When connecting to an Arduino UNO the following application circuit can be used to run the example code “MiniOLED”.



When connecting multiple Mini OLED Displays to an Arduino UNO the following application circuit can be used to run the example code “MiniOLED_Multi”.



1) When an OEL display module is operated for a long of time with fixed pattern may remain as an after image or slight contrast deviation may occur. Nonetheless, if the operation is interrupted and left unused for a while, normal state can be restored. Also, there will be no problem in the reliability of the module.
2) To protect OEL display modules from performance drops by static electricity rapture, etc., do not touch the following sections whenever possible while handling the OEL display modules.
* Pins and electrodes
* Pattern layouts such as the FPC
3) With this OEL display module, the OEL driver is being exposed. Generally speaking, semiconductor elements change their characteristics when light is radiated according to the principle of the solar battery. Consequently, if this OEL driver is exposed to light, malfunctioning may occur.
* Design the product and installation method so that the OEL driver may be shielded from light in actual usage.
* Design the product and installation method so that the OEL driver may be shielded from light during the inspection processes.
4) Although this OEL display module stores the operation state data by the commands and the indication data, when excessive external noise, etc. enters into the module, the internal status may be changed. It therefore is necessary to take appropriate measures to suppress noise generation or to protect from influences of noise on the system design.
5) We recommend you to construct its software to make periodical refreshment of the operation statuses (re-setting of the commands and re-transference of the display data) to cope with catastrophic noise.