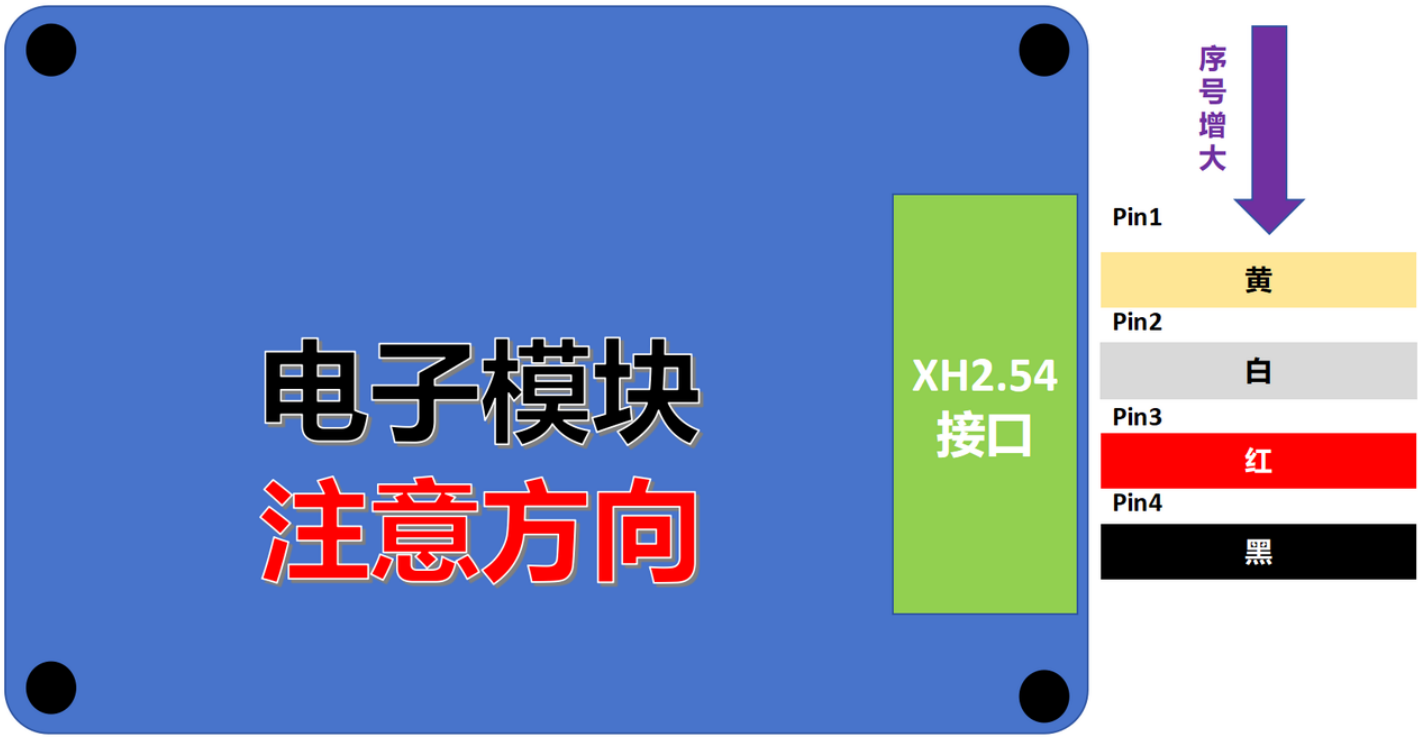
Grove-C传感器规范

1.线序规范



这里，统一规定输入电压为5V，若是需要3V3供电模块，统一在模块内部加一个5V转3V3电压模块即可。

同时，这里虽然标准中对连接线颜色有要求，但我们这里并没有。

电子模块要求，无源元件尽可能用0603封装，芯片用大贴片封装。

从下到上分别是GND-VCC-信号线（接口右侧情况）

！！！默认电路板上ph端子在左侧，所以上图要翻转180度使用！！！

1.1 数字接口标准

Grove Digital

A digital Grove connector consists of the standard four lines coming into the Grove plug. The two signal lines are generically called D0 and D1. Most modules only use D0, but some do (like the LED Bar Grove display) use both. Often base units will have the first connector called D0 and the second called D1 and they will be wired D0/D1 and then D1/D2, etc.

Examples of Grove Digital modules are: **Switch Modules**, the **Fan Module**, and the **LED Module**. In Figure 8, you can see what the Grove connector looks like on the schematic for the LED Grove module. They can range from simple to very complex.

pin	Function	Note
pin1	Dn	Primary Digital Input/Output
pin2	Dn+1	Secondary Digital Input/Output
pin3	VCC	Power for Grove Module, 5V/3.3V
pin4	GND	Ground

1.2 模拟接口标准

Grove Analog #

A Grove Analog connector consists of the standard four lines coming into the Grove plug. The two signal lines are generically called A0 and A1. Most modules only use A0. Often base units will have the first connector called A0 and the second called A1 and they will be wired A0/A1 and then A1/A2, etc.

pin	Function	Note
pin1	An	Primary Analog Input
pin2	An+1	Secondary Analog Input
pin3	VCC	Power for Grove Module, 5V/3.3V
pin4	GND	Ground

1.3 串口接口标准

Grove UART

The Grove UART module is a specialized version of a Grove Digital Module. It uses both Pin 1 and Pin 2 for the serial input and transmit. The Grove UART plug is labeled from the base unit point of view. In other words, Pin 1 is the RX line (which the base unit uses to receive data, so it is an input) where Pin 2 is the TX line (which the base unit uses to transmit data to the Grove module).

pin	Function	Note
pin1	RX	Serial Receive
pin2	TX	Serial Transmit
pin3	VCC	Power for Grove Module, 5V/3.3V
pin4	GND	Ground

1.4 I2C接口标准

Grove I2C

Those long term readers of this blog know that our favourite devices are I2C sensors. There are many types of I2C Grove sensors available. Most are 5V/3.3V devices, but there are a few that are only 3.3V or 5.0V. You need to check the specifications.

The Grove I2C connector has the standard layout. Pin 1 is the SCL signal and Pin 2 is the SDA signal. Power and Ground are the same as the other connectors. This is another special version of the Grove Digital Connector. In fact, often the I2C bus on a controller (like the ESP8266, Raspberry Pi and the Arduino) just uses Digital I/O pins to implement the I2C bus. The pins on the Raspberry Pi and Arduino are special with hardware support for the I2C bus.

pin	Function	Note
pin1	SCL	I2C Clock
pin2	SDA	I2C Data
pin3	VCC	Power for Grove Module, 5V/3.3V
pin4	GND	Ground

SCL和SDA务必加入上拉电阻，这里，统一规定输入电压为5V，若是需要3V3供电模块，统一加一个5V转3V3电压模块即可。

1.5 SPI接口标准

若是SPI标准，由于SPI通信无统一协议则直接参考网上电子模块的接口即可。

只需要遵守倒数第二和倒数第一引脚为VCC和GND即可，对其他引脚并不做特别要求。

1.6 单总线通信标准

若是单总线通信协议，则Pin1为DATA数据线，Pin2为NC，Pin3为VCC，Pin4为GND。

2.PCB规范

2.1 电路板尺寸

1X1	1X2	1X3	2X2	2X3
20x20mm	20x40mm	20x60mm	40x40mm	40x60mm
				

2.2 接口相关规范

PH2.0端子位于PCB板左边缘，需与PCB板左边缘上下居中对齐，端子左边缘距板左边缘50mil，卡扣方向朝向PCB板中心。

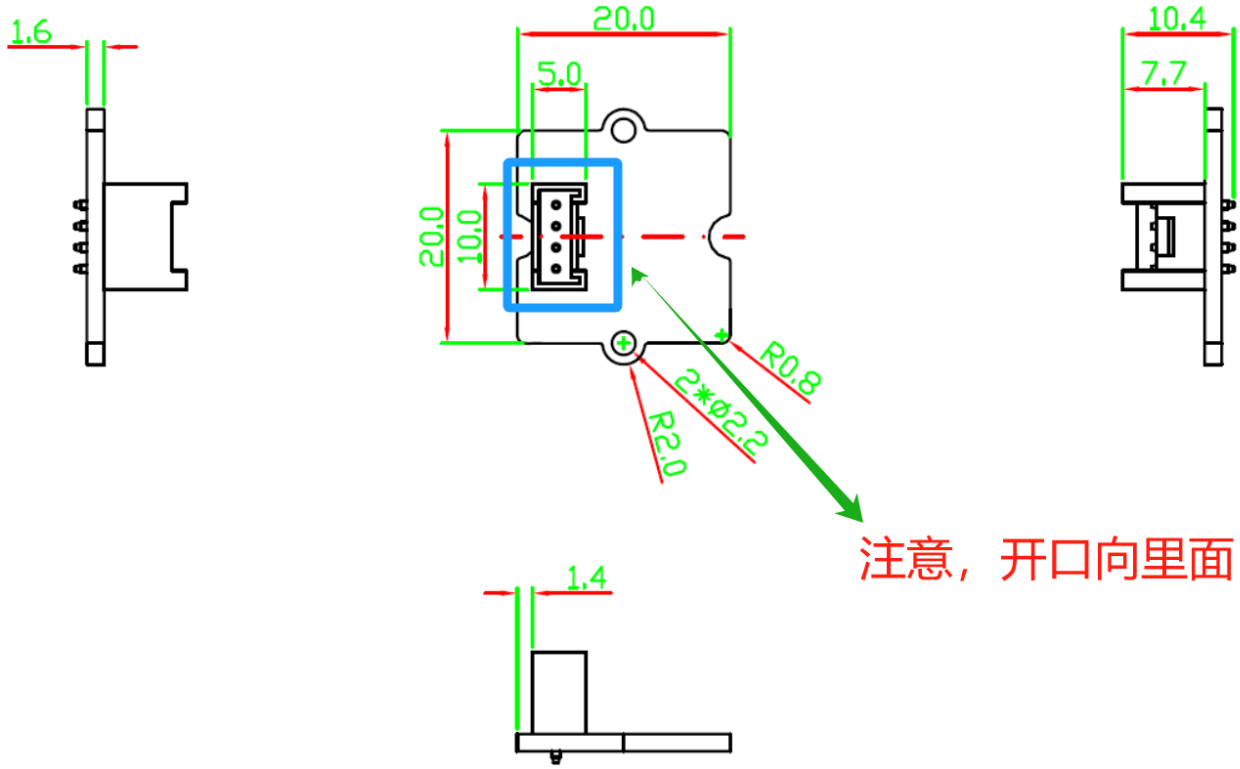
4P端子供应商编号为C5359601，其他pin数端子使用与该端子同样厂家出品的！！！

导入模板时，参考点选择图形中心，线宽0.254mm，导入层选择板框层，选择所有直径3mm孔改为挖槽区域，删除掉不需要的模板

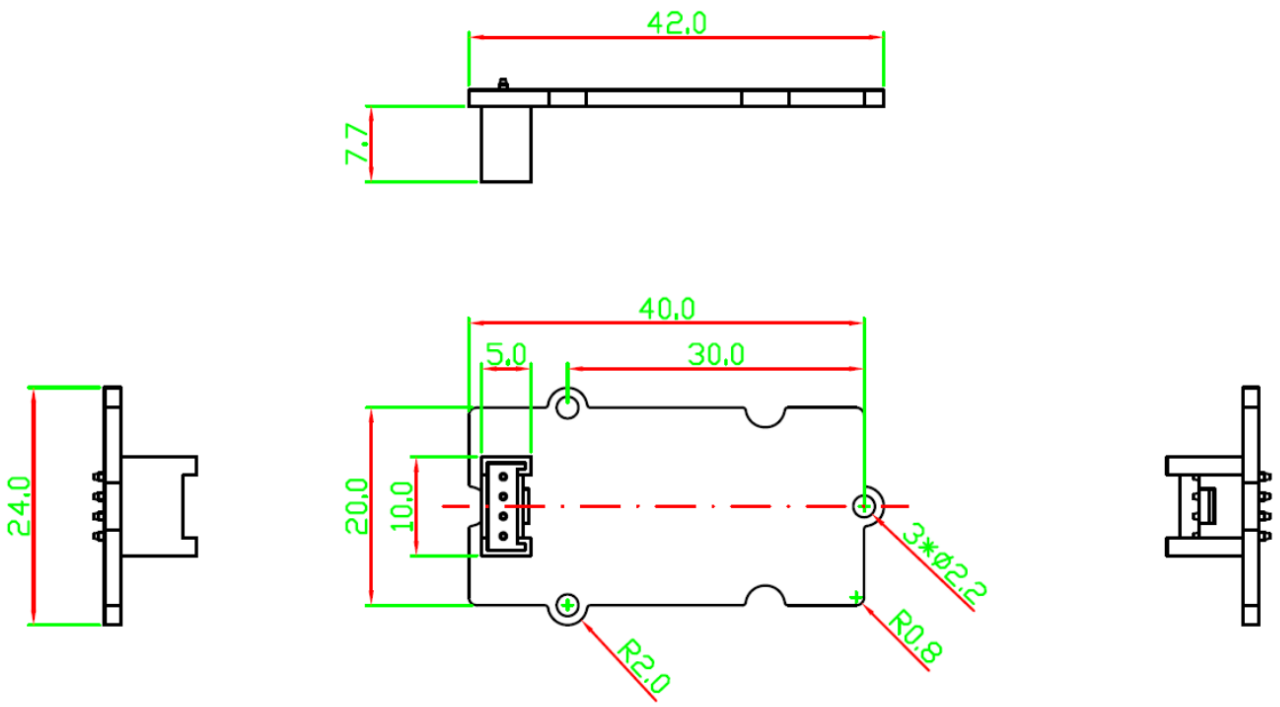
注意，这里咱们所有PH2.0座均选用4P直插DIP型，不选择贴片型。

具体PH2.0-4P座选用弯插还是直插看情况定。

- Grove 20X20 DIP:



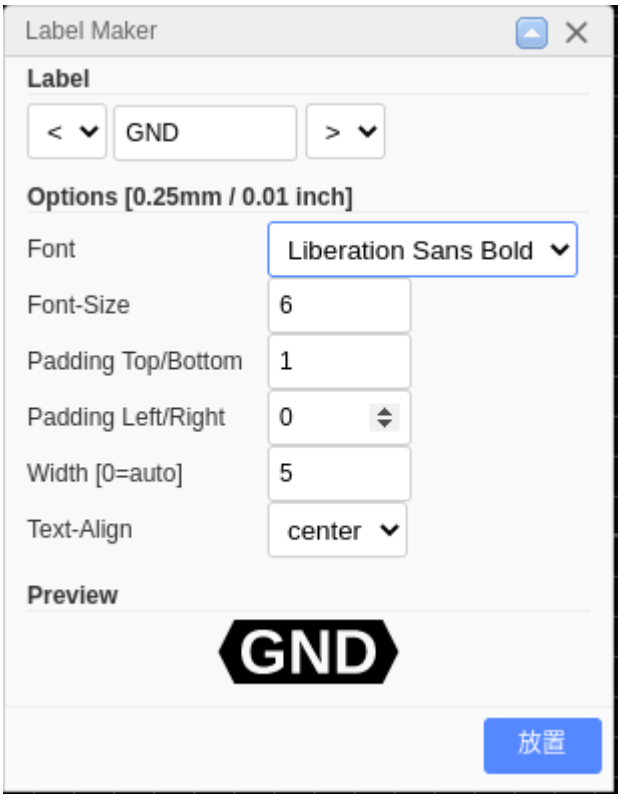
- Grove 20X40 DIP:



3.丝印规范

这里，PH2.0连接座对应丝印名称同线序规范类似：

丝印位置参照上图，丝印与端子左右居中对齐，丝印与临近丝印两中心间上下距离为65mil，邻近端子的丝印的中心与最近的焊盘中心上下距离为120mil；使用反向丝印，丝印使用嘉立创EDA标准版label插件编辑，相关参数如下



GND引脚丝印书写为GND

VCC引脚丝印书写为+5V

数字输入输出引脚丝印书写为DIN或DOUT

模拟输入输出引脚丝印书写为AIN或AOUT

未使用引脚丝印书写为NC

需要编号的 例如两个数字输入 就是DIN0和DIN1

需要注意的是，务必保留元器件丝印，避免不知道如何焊接。

参考文件

Grove Ecosystem Introduction

一种规范的嵌入式开发套件连接接口定义-Grove系统

模块外形模板(1).dxf
299.82KB

【插件】嘉立创EDA标准版插件汇总(EasyEDA Std Extensions Summary)

嘉立创EDA专业版插件汇总