

DESCRIPTION

The Single Button module is a compact module that integrates a 12x12mm tactile momentary button, pullup resistor and a LED indicator. It also comes with a breadboard/Arduino friendly pin headers. The Single Button module is part of Layad Circuits’ Kimat series of rapid prototyping products.

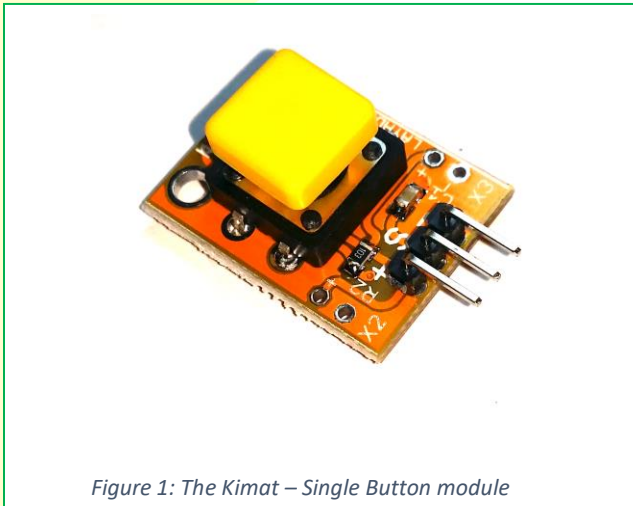


Figure 1: The Kimat – Single Button module

SCHEMATIC

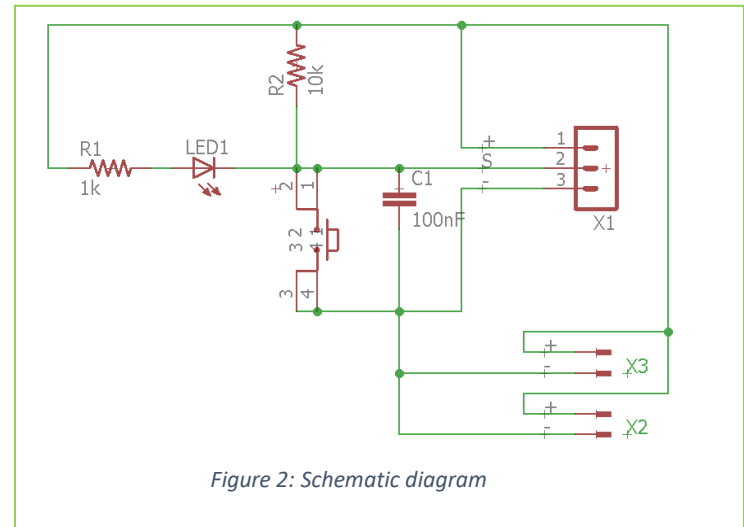


Figure 2: Schematic diagram

When the push button is pressed, current flows through LED1 via R1 and hence, will light up the LED. Depressing the button turns the LED off. The output at the S is normally high when the button is not pressed due to the pull-up resistor R2. C1 and R2 also serves as a low pass filter to help smooth out mechanical bounce.

APPLICATIONS NOTES

Buttons are among the simplest and fastest user input method for microcontroller projects. To prevent the signal from floating, you often need to connect external pull-up or pull-down resistors when working with GPIO’s without internal. You may also want to add an LED to indicate the state of the button. In some instances, this seemingly simple task may turn troublesome especially for multiple buttons. This is why we have this module. It is a ready-made push button for general purpose user input.

FEATURES

- 12x12mm tactile momentary switch
- LED indicator for the switch
- Integrated pull-up resistor
- Compatible with 3.3V or 5V controllers
- Compact form factor, board dimensions: 25x19mm
- Standard 2.54mm pitch headers. Breadboard friendly.

PIN FUNCTIONS

Pin Label	Function/Operation/Remarks
+	Vcc pin. Compatible with 3.3V or 5V
-	Ground pin.
S	Signal pin. Low when button is pressed. High otherwise.

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Wiring and Testing

When used with the Saleng or Arduino Uno, connect the + and – pin to the Arduino’s 5V and GND pins respectively. The S pin may be connected to any input pin.

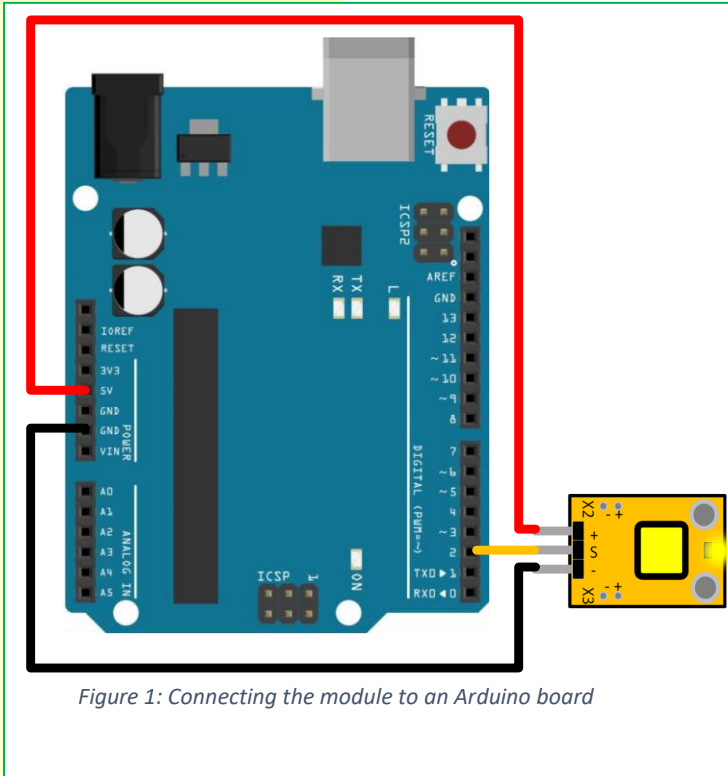


Figure 1: Connecting the module to an Arduino board

The Arduino sketch that follows is a basic test code you may use for this module.

```
const byte BUTTON = 2;
void setup() {
  pinMode(BUTTON, INPUT); // no need to enable pullup
  Serial.begin(9600);
}
void loop() {
  if(digitalRead(BUTTON) == LOW)
    Serial.println("PRESSED");
  else Serial.println("NOT PRESSED");
}
```

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The output viewed from the Serial Monitor with a 9600 baud rate.

The Single Button module has 2 extra headers labeled X2 and X3. These are connected to the + and – pins on the main header and will be useful when using more than one button and using them side by side. Figure 4 illustrates this.

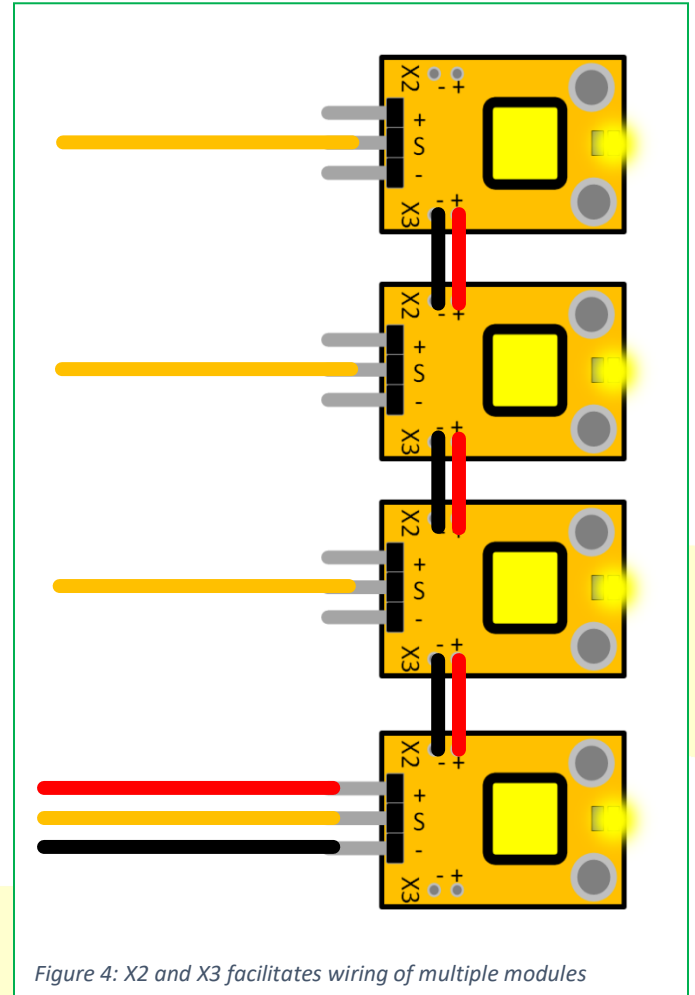


Figure 4: X2 and X3 facilitates wiring of multiple modules

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