

### Introduction

CP100 is a state of the art solid state capacitive sensing switch available in momentary or toggle mode. It could be used anywhere a mechanical switch is required. The switch center LED will turn on indicating a switch has been activated.

CP100 features an excellent noise immunity against radiated and conducted noise, such as audio and radio frequency (RF) noise.

CP100 will function with an off-board sensor connected with a wire length up to 15". The external sensor is available in 0.5" and 1" diameter as an optional item (See P4).

### Max Electrical Ratings

Vin max=23 v.

Max switch load Current=3A @ 25°C

Recommended continuous load current=2.5A

### Maximum Overlay Sensing Distance

Acrylic Overlay = 3.2 mm. ( Using the built-in sensor)

Acrylic Overlay = 10 mm. ( Using 1 inch external sensor)

### Operating Conditions at 25°C

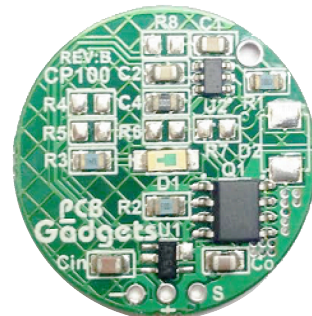
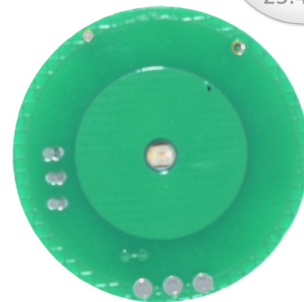
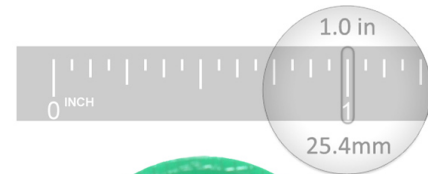
5.5v≤Vin≤23v.

Istandby = 1.95 mA. (with power indication LED turned on)

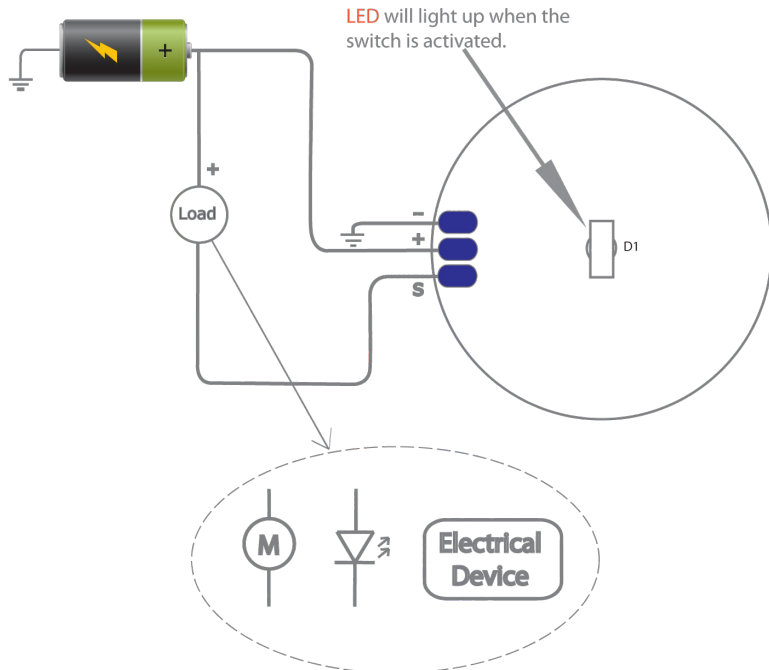
I operating = 18 mA. (with center actuation LED turned on)

### Mechanical Dimensions

Board Diameter=1"



### Typical Switch Wiring Schematic



**Please Note:**

The load could be :

- A motor,
- An LED,
- A Solenoid..etc

Max Battery Voltage=23 v

Max load voltage=23 v

**If using inductive loads:**

Max Load Voltage=15 v

Figure.1: Typical switch connection.

### Sensor Operation. Please Read:

In order for the capsense switch to function properly please follow this simple procedure:

1-Make sure the capsense switch is not powered.

2-Install the capsense switch in the desired location. Depending on your application, you may apply an overlay on top of the sensing pad (not to exceed 3.2mm) or you may connect it to an external sensor (see page 4).

3- Apply power to the sensor and it will operate and respond to a finger touch. The sensor operation modes can be in either momentary or toggle mode depending on the configuration you have purchased. ( See next page for modes of operations)

**NOTE:**

Any changes to the sensor overlay or to the external sensor setup will require a power reset ( power down then power up) to allow the sensor to re-calibrate to the overlay/external sensor changes.

## Adding External Sensor. [Sold Separately]

If the capsense switch is not sensitive enough for your application, you could add a larger external sensor to boost the sensitivity. The following 2 steps below will show you how.

### Step 1

Lay the circuit board on the back side as shown in figure 2.

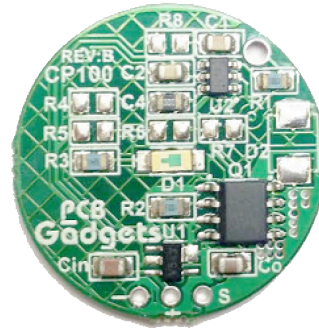


Figure.2:

### Step 2

Solder a thin wire, (28-30 gauge, not to exceed 15" in length) to an external sensor as shown in figure 3.

The external sensor could be any conductive material such as copper, stainless steel, etc.

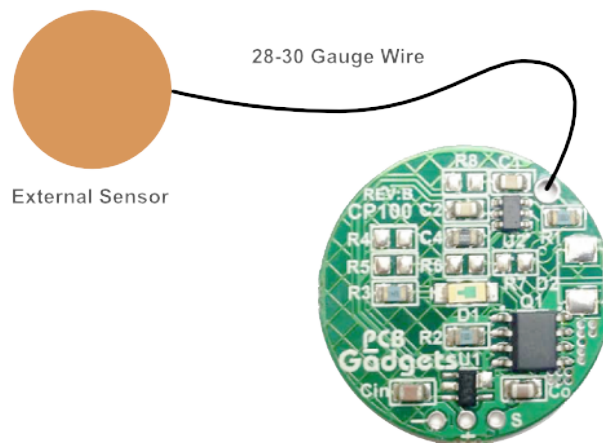


Figure.3:

## External Sensor Implementation

Shown below is an external sensor made out of a 1 inch copper foil .

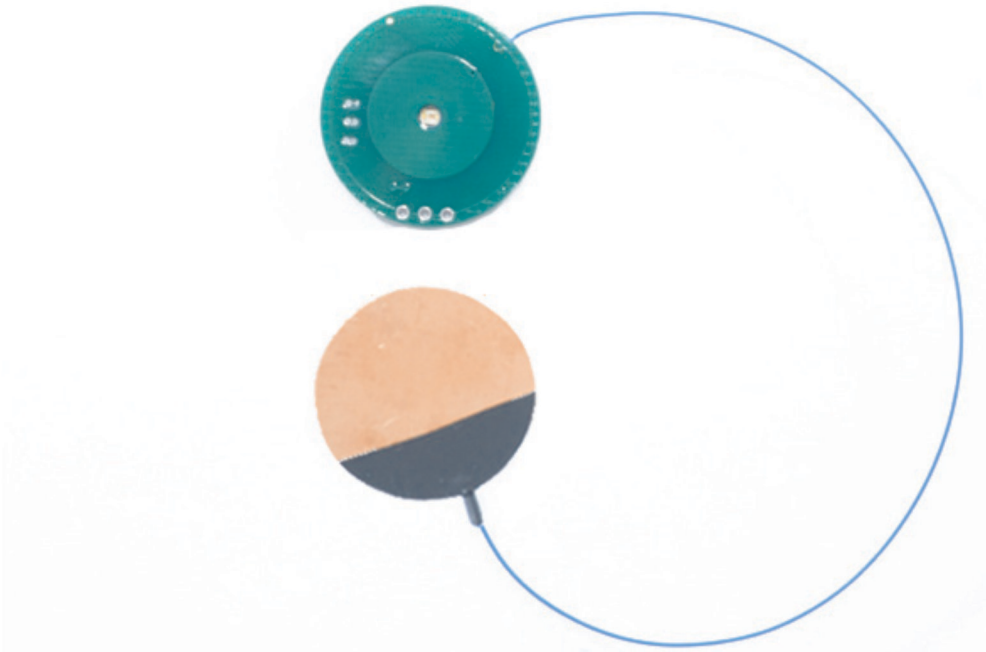


Figure.4: