TTP223 Capacitive Touch Sensor Module

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An Overview of TTP223

TTP223 is a Key Touchpad detector IC and is suitable to detect capacitive element variations. The TTP223 is a touchpad detector. This works with a single touch at a time. They develop this touch-detection IC to replace traditional switches. We can also use this module for different DC or AC applications.

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Hardware Overview

A TTP223 capacitive touch sensor module includes the TTP223 touch sensor IC. This capacitive touch switch has a single integrated touch sensing area of 11 x 10.5mm with a sensor range of 5mm. There is an onboard LED that provides the visual

The capacitive screen does not use the pressure of the finger to change the flow of electricity. However, they work with anything that holds an electrical charge, for example, human skin. When a finger touches the screen, it transferred a tiny electrical charge to the finger to complete the circuit, making a voltage drop on that point of the screen. The software deals with the location of this voltage drop and completes the required actions accordingly.

Features and Specifications of TTP223

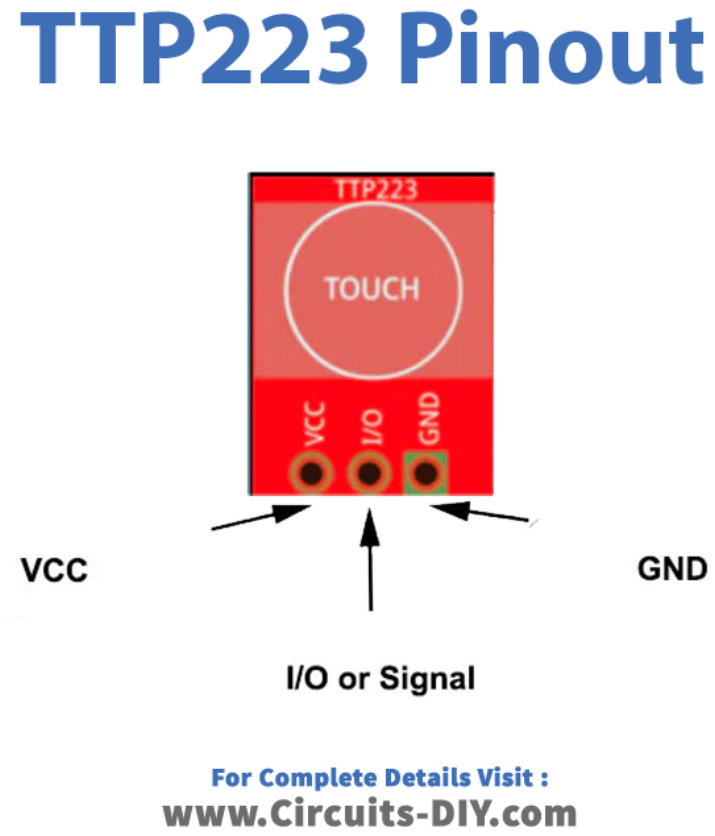
Features

- Modes Toggle or switch.
- Operating current @VDD=3V, no-load, SLRFTB=1.
- The response time max is about 60mS at fast mode, and 220mS at low power mode @VDD=3V.
- Sensitivity can adjust by the capacitance(0~50pF) outside.
- Have two kinds of sampling length by pad option(SLRFTB pin).
- Stable touching detection of the human body for replacing traditional direct switch key.
- Provides Fast mode and Low Power mode selection by pad option(LPMB pin).
- Provides direct mode toggle mode by pad option(TOG pin), the open-drain mode by bonding option, OPDO pin is an open-drain output, Q pin is CMOS output.
- All output modes can be selected as active high or active low by pad option(AHLB pin).
- Have the maximum on-time 100sec by pad option(MOTB pin).
- Have an external power-on reset pin(RST pin).
- After power-on have about 0.5sec stable time, during this time do not touch the keypad, And the function is disabled.
- Auto calibration for life.
- The re-calibration period is about 4.0sec when the key has not been touched.

Specifications

- Operating voltage 2.0V~5.5V
- Operating current @VDD=3V, no load
- At low-power mode typical 1.5uA, maximum 3.0uA
- The response time max 220mS at low-power mode @VDD=3V
- Sensitivity can adjust by the capacitance(0~50pF) outside
- Sensor area: 11 x 10.5mm
- Max sensor range: ~5mm
- Module dimensions: 14.5mm x 11mm

Pinouts of TTP223



Pin Name	Description
Vcc	To power, the sensor typically requires 2.5V to 5.5V
I/O	Sensor out, active high
GND	The ground needs to be connected with the ground of the system

Applications of TTP223

Appliance Control

One can control different appliances using this sensor. And, for this, we don't have to provide force to press a button like the regular switch. This may be the reason that ouch sensing technology is growing day by day.

Consumer products

Because of its great sensing ability, we can utilize the sensor in various consumer products that works on a single human touch.

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