EN: This Datasheet is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

1 KEY TOUCH PAD DETECTOR IC

GENERAL DESCRIPTION

The TTP223-BA6/TTP223N-BA6 TonTouch™ is a touch pad detector IC which offers 1 touch key. The touching detection IC is designed for replacing traditional direct button key with diverse pad size. Low power consumption and wide operating voltage are the contact key features for DC or AC application.

FEATURES

- 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
- Stable touching detection of human body for replacing traditional direct switch key
- Provides Low Power mode
- Provides direct mode、toggle mode by pad option(TOG pin)
  Q pin is CMOS output
- All output modes can be selected active high or active low by pad option(AHLB pin)
- After power-on have about 0.5sec stable-time, during the time do not touch the key pad, And the function is disabled
- Auto calibration for life
  At low power mode the re-calibration period is about 4.0sec normally,
  When key detected touch and released touch, the auto re-calibration will be redoing after about 16sec from releasing key
- The sensitivity of TTP223N-BA6 is better than TTP223-BA6's.
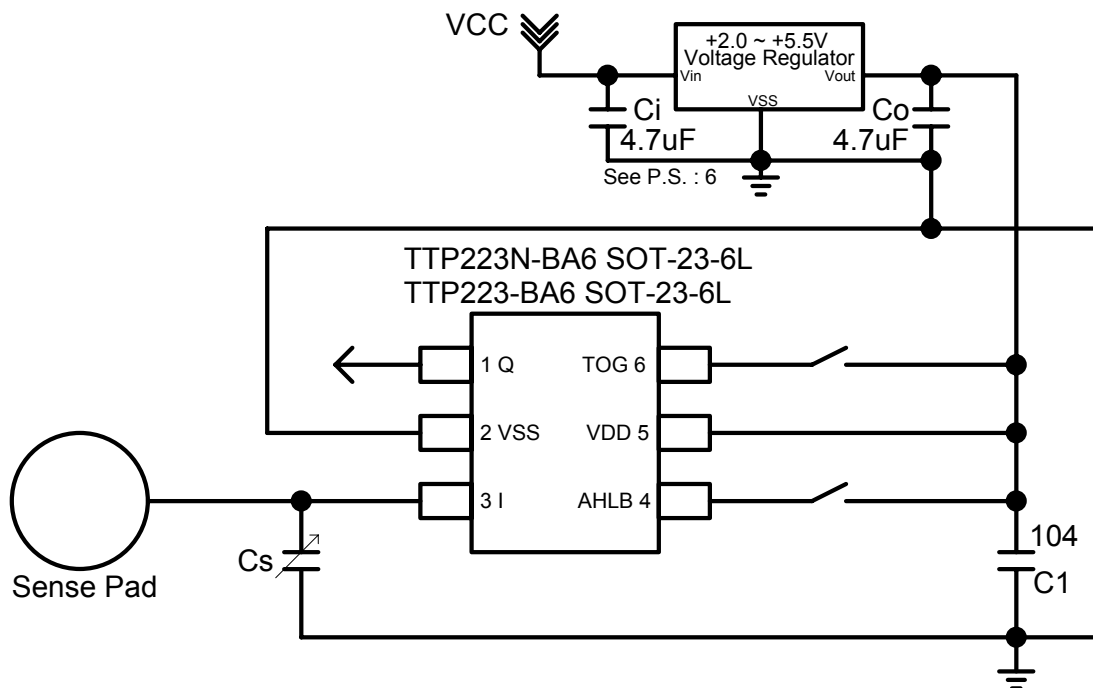 But the stability of TTP223N-BA6 is worse than TTP223-BA6's.

APPLICATION

- Wide consumer products
- Button key replacement

BLOCK DIAGRAM
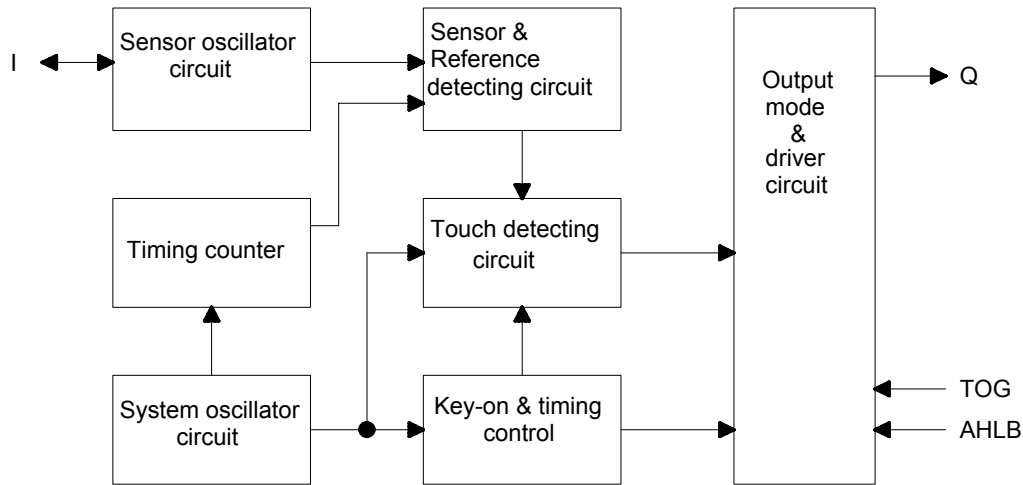
APPLICATION CIRCUIT

PS：1. On PCB, the length of lines from touch pad to IC pin shorter is better. And the lines do not parallel and cross with other lines.

2. The power supply must be stable. If the supply voltage drift or shift quickly, maybe causing sensitivity anomalies or false detections.

3. The material of panel covering on the PCB can not include the metal or the electric element. The paints on the surfaces are the same.

4. The capacitance Cs can be used to adjust the sensitivity. The value of Cs use smaller, then the sensitivity will be better. The sensitivity adjustment must according to the practical application on PCB. The range of Cs value is 0~50pF.

5. The C1 capacitor must be used between VDD and VSS; and should be routed with very short tracks to the device's VDD and VSS pins (TTP223-BA6/TTP223N-BA6).

6. The value of capacitors can be used by the real application for Ci and Co capacitors.

7. The sensitivity adjustment capacitors (Cs) must use smaller temperature coefficient and more stable capacitors. Such are X7R, NPO for example. So for touch application, recommend to use NPO capacitor, for reducing that the temperature varies to affect sensitivity.

ORDER INFORMATION

a. Package form: TTP223-BA6、TTP223N-BA6

REVISE HISTORY

1. 2008/08/15
  -Original version：V1.0
2. 2009/08/31 => V_2.0
  -Add the TTP223N-BA6.
  -Add the trademark 〝TonTouch[TM]〞 to every page.
3. 2009/11/30 => V_2.1
  - On the page-3 change the Operating Temperature => -40 ~ +85℃.