



十速

# TM52/TM57 系列

TKSOC & TKEOC 轮询模式注意事项

*Application Note*

*Rev 1.1*

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## 修改记录

Version	Date	Description
V1.0	Aug, 2015	新颁
V1.1	Sep, 2016	1. 增加 TKSOC 注意事项

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## 适用 IC 型号

TM52/TM57 系列所有带触摸按键功能的型号皆适用。

## TKSOC & TKEOC 轮询模式注意事项

在进行 S/W 手动模式时, 当设置 TKPD=0 和 TKSOC=1 (TM57 部份型号为 TKSTART) 启动触控按键转换后, TKEOC 不会马上变为 0, 需等待约 3us 后, TKEOC 才会变为 0 并开始进行转换。用户若采用 TKEOC 轮询模式来判断触摸按键转换是否结束, 需在设 TKSOC=1 后先延迟 3us, 再轮询 TKEOC 标志, 避免因误判转换完成而得到错误数据。

每一个触摸按键开始转换前, 需等待 CLD 放电完成, 所需等待时间为

1. TKPD=0 至 TKSOC=1 之等待时间至少需 10us (当 CLD 使用 2200pF 时)
2. TKEOC=1 至 TKSOC=1 之等待时间至少需 10us (当 CLD 使用 2200pF 时)
3. 如果 CLD 电容大於 2200pF 时, 等待时间需按比例增加, ex: CLD 使用 4700pF 时需 20us

### TM52 系列使用范例:

```
TKPD=0; //使能触摸按键
Delay_10us(); //等待 CLD 放电
TKSOC=1; //触摸按键开始转换
Delay_3us(); //延迟 3us, 等待 TKEOC=0
while (!TKEOC); //轮询 TKEOC, 等待触摸按键转换结束
Read_TK_Data(); //读取转换数据
Sel_TK_Channel(); //选择下一个触摸按键
Delay_10us(); //等待 CLD 放电
TKSOC=1; //下一个触摸按键开始转换
...
```

### TM57 系列使用范例:

```
BCF TKPD //使能触摸按键
CALL Delay_10us //等待 CLD 放电
BSF TKSOC //触摸按键开始转换
CALL Delay_3us //延迟 3us, 等待 TKEOC=0
WAIT_TK
BTFS TKEOC //轮询 TKEOC, 等待触摸按键转换结束
GOTO WAIT_TK
CALL Read_TK_Data //读取转换数据
CALL Sel_TK_Channel //选择下一个触摸按键
CALL Delay_10us //等待 CLD 放电
BSF TKSOC //下一个触摸按键开始转换
...
```