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**4-Wire Touch Screen Controller with Internal Reference**

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**General Description**

The CP2056 is a 4-wire touch screen controller which supports a low-voltage I/O interface from 1.5V to 3.6V. It contains a 12-bit analog-to-digital converter (ADC) with a synchronous serial interface and low on-resistance switches for driving resistive touch screens. The CP2056 has an on-chip 2.5V reference that can be used for the auxiliary input, battery monitor, and temperature measurement modes. The reference can also be powered down when not used to conserve power. The CP2056 can make absolute or ratiometric measurements.

The CP2056 is guaranteed to operate with a single 2.2V to 3.6V supply voltage. The typical power consumption at 125ksps throughput and a 2.7V supply (reference off) is lower than 0.75mW.

Low-power operation makes the CP2056 ideal for battery-operated systems, such as personal digital assistants with resistive touch screens and other portable equipment. The CP2056 is available in QFN16, TSSOP16 packages and is specified over the -40°C to +85°C temperature range.

**Features**

- 4-wire touch screen interface
- 2.2V to 3.6V operation
- 1.5V to 3.6V digital I/O
- On-chip 2.5V reference
- Programmable 8bit or 12bit resolution
- 3-wire serial interface
- Ratiometric conversion
- Touch-pressure measurement
- Direct battery measurement ( 0V to 6V )
- On-chip temperature measurement
- Available in TSSOP16, QFN16 packages, RoHS compatible

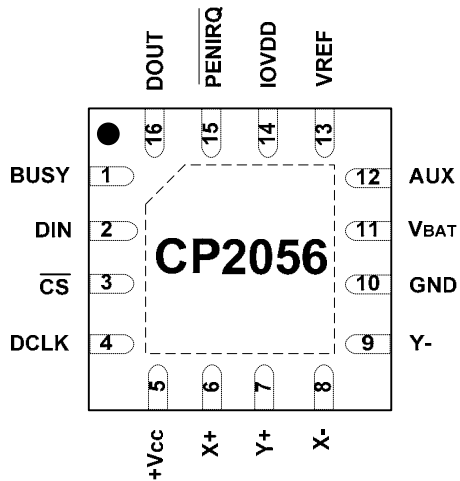
**Applications**

- Cellular phones
- Personal digital assistants
- Point-of-sale terminals
- Touch screen monitors

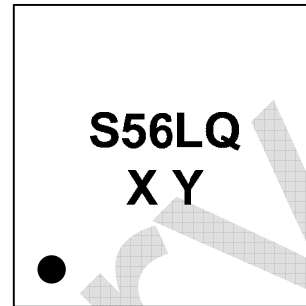
### 4-Wire Touch Screen Controller with Internal Reference

#### Pin Configurations

QFN16 Package  
(Top View)

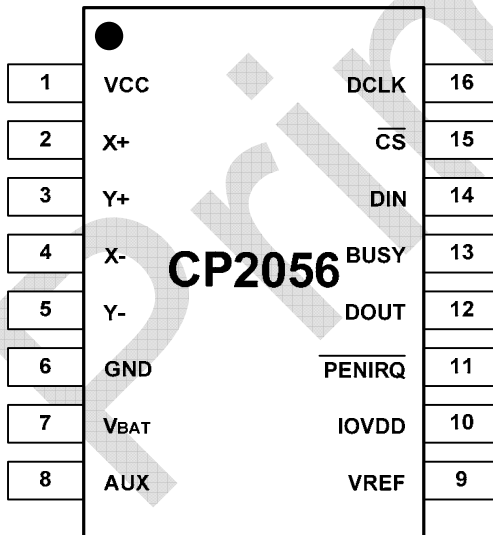


QFN16 Marking

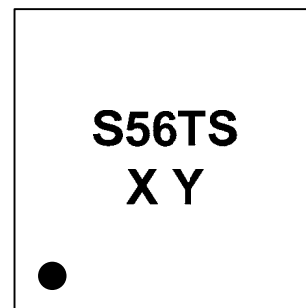


XY -Manufacture Date Code  
S56LQ - CP2056LQ

TSSOP Package  
(Top View)



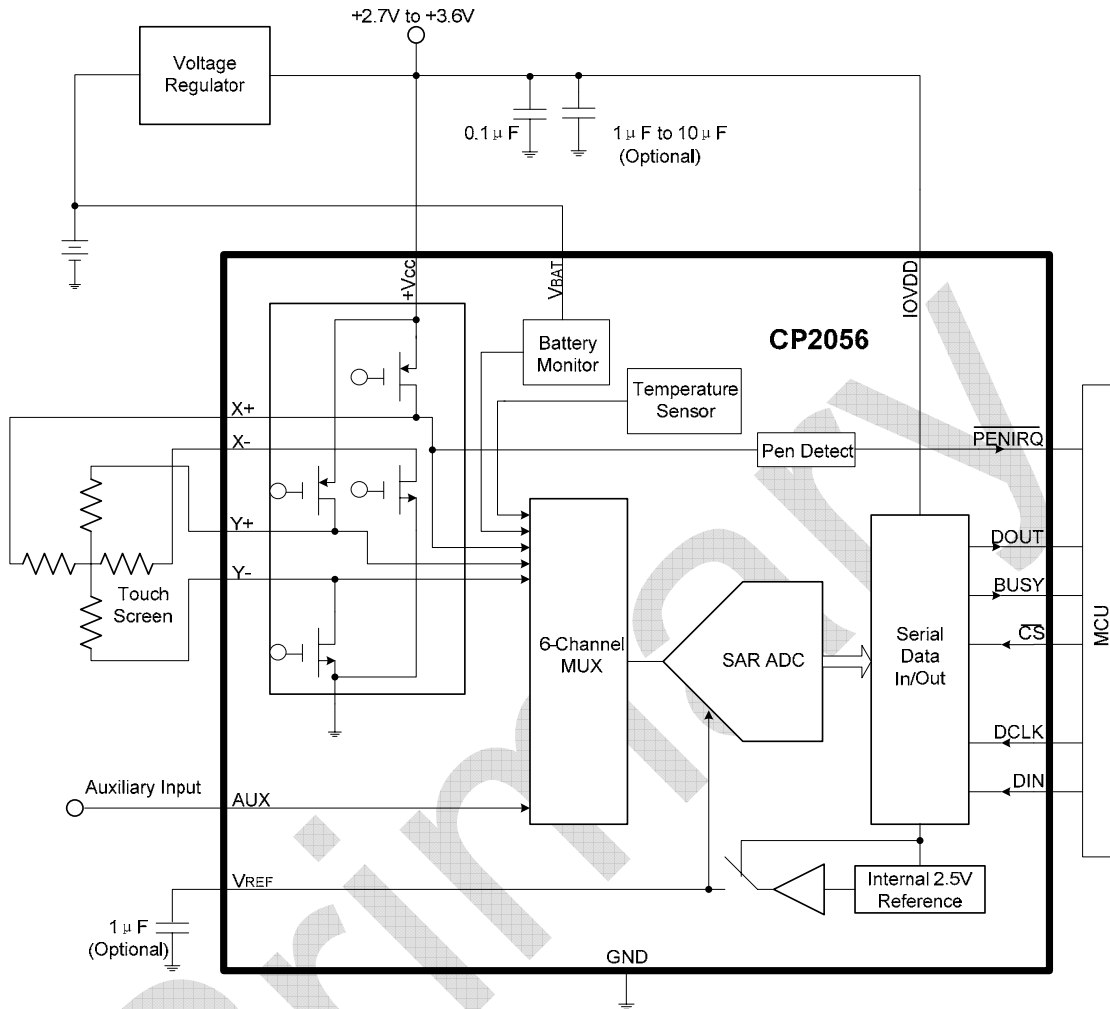
TSSOP Marking



XY -Manufacture Date Code  
S56TS - CP2056TS

## 4-Wire Touch Screen Controller with Internal Reference

### Typical Application Circuit



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