*SUMMARY*

TrueTouch® Single-Touch Touchscreen Controller

Features

- TrueTouch® capacitive touchscreen controller
  - True single-layer ITO sensor support – no bridges
    - Lowers touchscreen system cost
  - Single finger position reported
    - X, Y positions and Z magnitude reported
  - Screen sizes up to 3.6-inch diagonal
  - Up to 32 sense pins
  - Fat finger detection and tracking
  - Large object detection
  - Self-calibrating to environmental changes
  - Resistant to display noise
  - Robust operation in noisy RF environment
  - 1.71-V to 5.5-V input supply range
    - Single supply voltage
    - Compatible with 1.8-V I^{2}C signaling
    - Integrated voltage regulators – no need for dedicated voltage regulators

- Performance
  - Noise-free resolution: 0.1 mm
  - Accuracy with 1 finger on the touchscreen: 0.8 mm
  - >110-Hz refresh rate with one finger on the touchscreen
  - Best-in-class active power of 3.6 mW
  - Best-in-class Low-Power state current: 0.7 mA
  - Best-in-class Deep-Sleep state current: 100 nA

- Extended feature set
  - Water rejection – no false touches
  - Capacitive buttons supported
  - On-chip gesture detection
    - Single-click, double-click
    - One-finger pan gestures
    - Two-finger pinch/zoom gestures [1]

- Sensor and system design
  - Supports chip-on-flex and chip-on-board
  - Supports plastic film and glass single-layer touch sensors
  - Supports a variety of touchscreen sensor stackups

- Communication interface
  - I^{2}C slave up to 400 kbps
  - SPI slave with 2 Mbps sustained data throughput
  - Field upgrades through integrated bootloader

- Host development kit (HDK)
  - Android driver support
  - Supports custom driver development
  - TrueTouch host emulator – acts as host for early prototyping

- Package options
  - 32-pin 5 × 5 × 0.55-mm QFN
  - 48-pin 7 × 7 × 1.0-mm QFN
  - 30-ball 2.2 × 2.32 × 0.4-mm WLCSP

CY8CTST241/CY8CTST242 Block Diagram
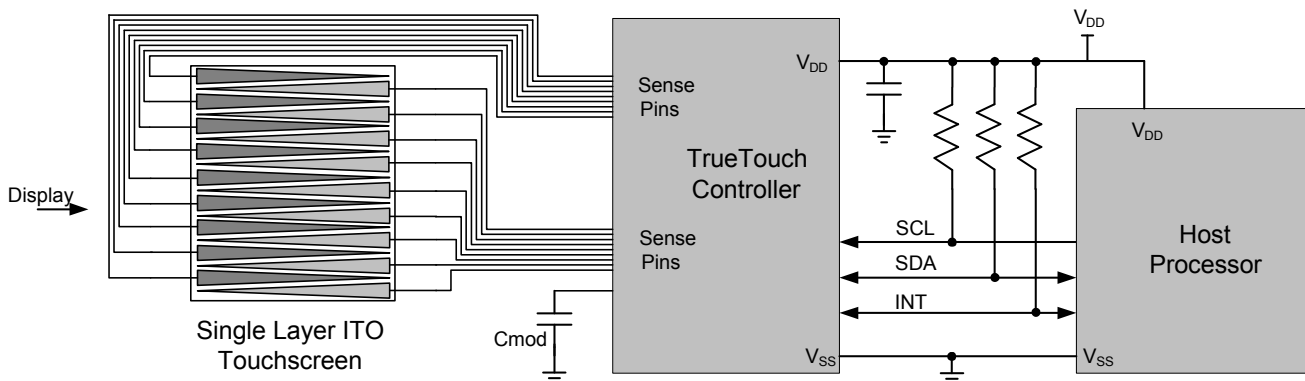
Note
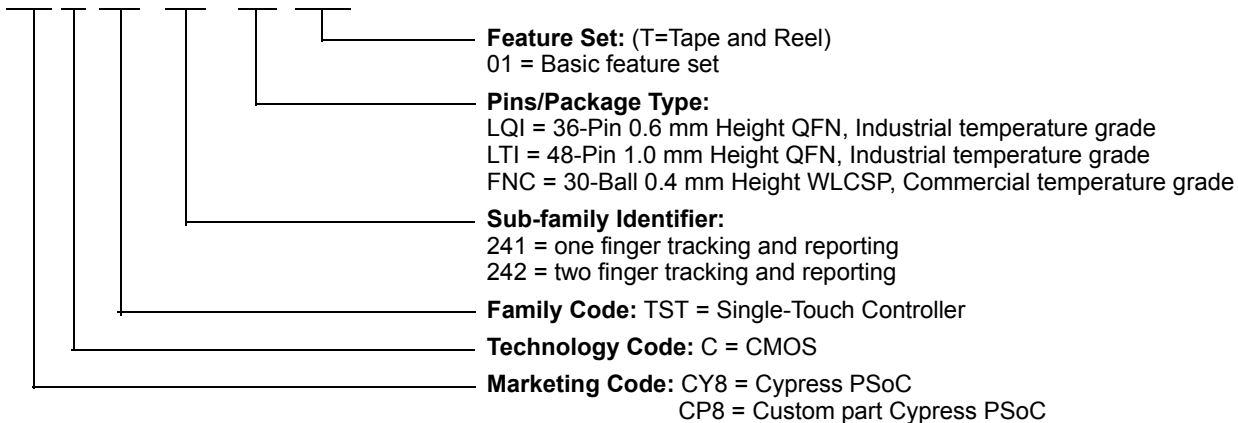1. Pinch/zoom gestures are only supported on CY8CTST242.

Ordering Information

The following table lists the TrueTouch Standard Product Single Touch Touchscreen Controllers. For information on other TrueTouch families, visit http://www.cypress.com/truetouch.

Table 1. Device Ordering Information

| Part Number | Typical Screen Size (in.) (4:3 Aspect Ratio) | TrueTouch | | | | | | Sensor | | Minimum Interface Voltage | Supply Voltage Operating Range | Bootloader | I²C | SPI | UART | Package |
		Maximum Nodes	Maximum Fingers	On-chip Gesture Decoding	True Single Layer Sensor	Large Object Detection	Glass	Film							
CY8CTST241-LQI-01(T)	3.3[2]	24	1	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	32-pin QFN
CY8CTST241-LTI-01(T)	3.6[2]	32	1	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	48-pin QFN
CP8CTST241-FNC-01(T)	3.6[2]	24	1	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	30-ball WLCSP
CY8CTST242-LQI-01(T)	3.6[2]	24	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	32-pin QFN
CY8CTST242-LTI-01(T)	3.6[2]	32	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	48-pin QFN
CP8CTST242-FNC-01T	3.6[2]	24	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	30-ball WLCSP

Ordering Code Definitions

Cx8 C TST 24x - xxx xx(T)

Feature Set: (T=Tape and Reel)
01 = Basic feature set

Pins/Package Type:
LQI = 36-Pin 0.6 mm Height QFN, Industrial temperature grade
LTI = 48-Pin 1.0 mm Height QFN, Industrial temperature grade
FNC = 30-Ball 0.4 mm Height WLCSP, Commercial temperature grade

Sub-family Identifier:
241 = one finger tracking and reporting
242 = two finger tracking and reporting

Family Code: TST = Single-Touch Controller

Technology Code: C = CMOS

Marketing Code: CY8 = Cypress PSoC
CP8 = Custom part Cypress PSoC

Note
2. A screen size of 3.6-inches is met using 6.1-mm pitch for 24-nodes devices and a 4.1-mm pitch for 32-node devices.

Document History Page

	Document Title: CY8CTST241/CY8CTST242, TrueTouch® Single-Touch Touchscreen Controller Document Number: 001-91041			
Rev.	**ECN No.**	**Orig. of Change**	**Submission Date**	**Description of Change**
**	4278978	SWU	02/12/2014	New summary data sheet.
*A	5378716	ELG	08/06/2016	Added CY8CTST241 part related information in all instances across the document. Added CY8CTST241/CY8CTST242 Block Diagram. Updated Ordering Information: Updated part numbers. Updated Ordering Code Definitions. Updated to new template.

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