SUMMARY

CY8CTST242

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 3.5” diagonal
  - Up to 32 sense pins
  - Fat finger detection and tracking
  - Large object detection
  - Self-calibrating to environmental changes
  - Resistant to LCD noise
  - Robust operation in a noisy RF environment
  - 1.71 V to 5.5 V input supply range
    - Single supply voltage
    - Compatible with 1.8-V I^2C 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
    - 2 finger Pinch/Zoom gestures

      Second finger co-ordinate reported to support operating system gesture decoding
- Sensor and system design
  - Supports chip-on-flex and chip-on-board
  - Supports plastic film and glass touch sensors
  - Supports a variety of touchscreen sensor stackups
- Communication interface
  - I^2C slave up to 400 kHz
  - 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

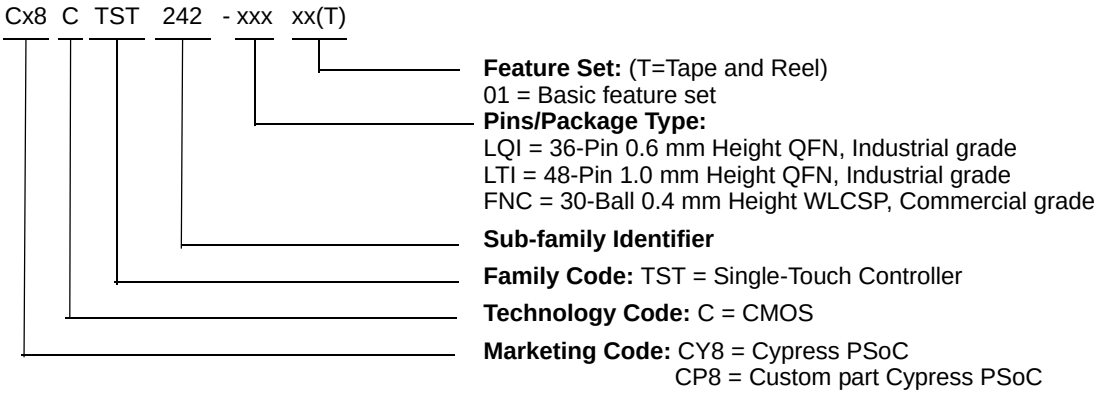
Ordering Information

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	TrueTouch						Sensor		Minimum Interface Voltage	Supply Voltage Operating Range	Bootloader	I^2C	SPI	UART	Package
	Typical Screen Size (in.) (4:3 Aspect Ratio)	Maximum Nodes	Maximum Fingers	On-chip Gesture Decoding	True Single Layer Sensor	Large Object Detection	Glass	Film							
CY8CTST242-LQI-01(T)	3.5[1]	24	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	32-pin QFN
CY8CTST242-LTI-01(T)	3.5[1]	32	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	48-pin QFN
CP8CTST242-FNC-01T	3.5[1]	24	2	✔	✔	✔	✔	✔	1.8	1.71-5.5	✔	✔	✔	✔	30-ball WLCSP

Ordering Code Definitions



Note

1. A screen size of 3.5-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: 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 datasheet.

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