TST241 TrueTouch® Single-touch Touchscreen Controller

Features

- ■ TrueTouch® capacitive touchscreen controller
  - ❐ Single finger position reported
    - • X, Y positions and Z magnitude reported
  - ❐ Screen sizes up to 3.6-in. diagonal
  - ❐ True single-layer sensors with no bridges
  - ❐ Up to 32 sense I/O
  - ❐ Large-finger detection and tracking
  - ❐ Large-object detection
  - ❐ Self-calibrating to environmental changes
  - ❐ Resistant to LCD noise
  - ❐ Robust operation in noisy RF environments
  - ❐ 1.71 to 5.5V input supply range
    - • Single supply voltage
    - • Compatible with 1.8V I^{2}C signaling
    - • Integrated voltage regulators – no need for dedicated voltage regulators

- ■ Performance
  - ❐ Noise-free resolution: 0.1 mm
  - ❐ Accuracy with one finger on the touchscreen: 0.8mm
  - ❐ Refresh rate: >110Hz with one finger on the touchscreen
  - ❐ Best-in-class active power of 3.6mW
  - ❐ Best-in-class low-power state current: 0.7mA
  - ❐ Best-in-class deep-sleep state current: 100nA

- ■ Extended feature set
  - ❐ Water rejection – no false touches
  - ❐ Capacitive buttons supported
  - ❐ On-chip gesture detection
    - • Single-click and double-click
    - • One-finger pan gestures

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

- ■ Communication interface
  - ❐ I^{2}C slave at 100 and 400kbps
  - ❐ SPI slave with 2Mbps 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 × 0.55mm QFN
  - ❐ 48-pin 7 × 7 × 1.0mm QFN
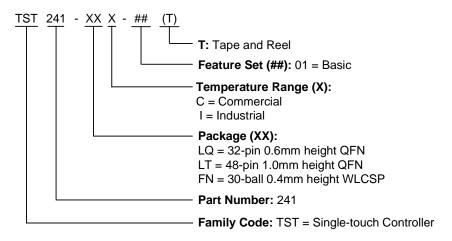 - ❐ 30-ball 2.2 × 2.32 × 0.4mm WLCSP

Ordering Information

The following table lists the TST241 TrueTouch Single-touch touchscreen controller ordering information. For information on other TrueTouch families, visit http://www.paradetech.com/products/products-overview/.

Device Ordering Information

| Part Number | TrueTouch Features | | | | | | Sensors | | Minimum Interface Voltage | Supply Voltage Operating Range | Bootloader | I²C | SPI | UART | Package |
	Typical Screen Size (in.) (4:3 Aspect Ratio)	# of Sense I/O	# of Finger Touches Recognized	On-chip Gesture Decoding	True Single-Layer Sensor	Large-Object Detection	Glass	Film							
TST241-LQI-01(T)	3.3	24	1	✔	✔	✔	✔	✔	1.8	1.71 – 5.5	✔	✔	✔	✔	32-pin QFN
TST241-LTI-01(T)	3.6	32	1	✔	✔	✔	✔	✔	1.8	1.71 – 5.5	✔	✔	✔	✔	48-pin QFN
TST241-FNC-01(T)	3.6	24	1	✔	✔	✔	✔	✔	1.8	1.71 – 5.5	✔	✔	✔	✔	30-ball WLCSP

Ordering Code Definitions

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TST  241  -  XX X - ##  (T)
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T: Tape and Reel

Feature Set (##): 01 = Basic

Temperature Range (X):
C = Commercial
I = Industrial

Package (XX):
LQ = 32-pin 0.6mm height QFN
LT = 48-pin 1.0mm height QFN
FN = 30-ball 0.4mm height WLCSP

Part Number: 241

Family Code: TST = Single-touch Controller