



## TST242 TrueTouch<sup>®</sup> Single-touch Touchscreen Controller for Wearables

### Features

- TrueTouch<sup>®</sup> 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-in. diagonal
  - 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 a noisy RF environment
  - 1.71 to 5.5V input supply range
    - Single supply voltage
    - Compatible with 1.8V I<sup>2</sup>C signaling
    - Integrated voltage regulators – no need for dedicated voltage regulators
- Performance
  - Noise-free resolution: 0.1mm
  - Accuracy with one finger on the touchscreen: 0.8mm
  - Refresh rate: >110Hz with one finger on the touchscreen
  - Best-in-class active power: 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<sup>2</sup>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

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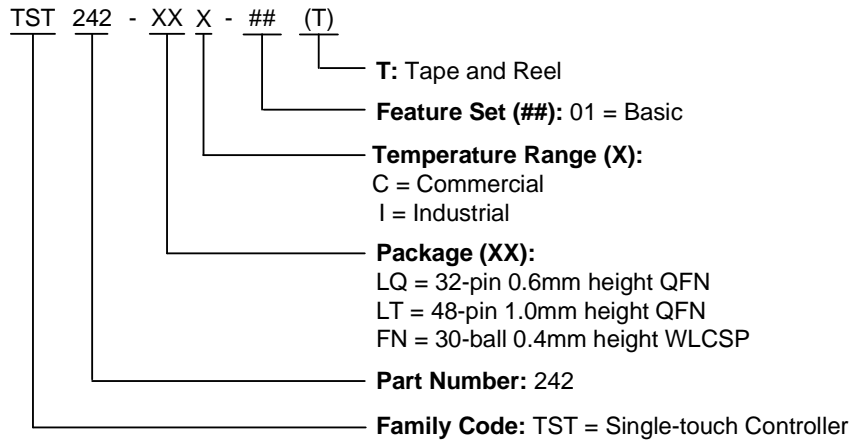
## Ordering Information

The following table lists the TST242 TrueTouch Single-touch touchscreen controller for wearables 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	I <sup>2</sup> C	SPI	UART	Package
	Typical Screen Size (in.) (4:3 Aspect Ratio) <sup>1</sup>	# of Sense I/O	# of Finger Touches Recognized	On-chip Gesture Decoding	True Single-Layer Sensor	Large-Object Detection	Glass	Film							
TST242-LQI-01(T)	3.5	24	1	✓	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	32-pin QFN
TST242-LTI-01(T)	3.5	32	1	✓	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	48-pin QFN
TST242-FNC-01(T)	3.5	24	1	✓	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	30-ball WLCSP

### Ordering Code Definitions



**Note**

1. A screen size of 3.5-in. is met using 6.1mm pitch for 24-node devices and a 4.1mm pitch for 32-node devices.