



SUMMARY

CYTMA525 Datasheet

TrueTouch[®] Multi-Touch All-Points Touchscreen Controller

Features

- Multi-touch capacitive touchscreen controller
 - 32-bit ARM Cortex™ CPU
 - Register configurable
 - Noise suppression technologies for battery charger and display
 - Effective 28-V drive for higher signal-to-noise ratio (SNR)
 - ChargerArmor™ for charger noise immunity
 - External display synchronization
 - Water rejection and wet-finger tracking using DualSense™
 - Multi-touch glove with automatic mode switching
 - Passive stylus
 - Fingernail tracking
 - Hover finger tracking
 - Large object rejection
 - Automatic baseline tracking to environmental changes
 - Low-power look-for-touch mode
 - Field upgrades via bootloader
 - Android™ driver support
 - Cypress Manufacturing Test Kit (MTK)
 - Touchscreen sensor self-test and Panel ID reporting
- System performance (configuration dependent)
 - Screen sizes up to 3.0-inch diagonal
 - 4.3-mm electrode pitch, 4:3 aspect ratio
 - Up to 25 sense pins
 - 154 intersection (14 × 11)
 - Reports up to 4 fingers
 - Small finger support down to 4 mm
 - Large finger support up to 30 mm
 - Refresh rate up to 300 Hz; other rates configurable
 - TX frequency up to 500 kHz
 - Fast first-touch response (≤13 ms)
 - Best-in-class charger noise immunity
 - Immunity up to 60-V peak-to-peak (V_{PP})
 - Immunity to AT&T Zero and Duracell charger noise
- Power (configuration dependent)
 - 1.71- to 5.5-V digital and I/O supply
 - 2.65- to 5.5-V analog supply
 - 5.6-mW average power
 - 4.5-μW typical deep-sleep power
- Sensor and system design (configuration dependent)
 - Supports a variety of touchscreen sensors and stackups
 - Manhattan, diamond, and Single Layer Independent Multi-touch (SLIM[®]) patterns
 - Sensor-on-lens (SOL)
 - On-cell touch integrated display modules
 - Plastic (PET) and glass sensor substrates
 - LCD and AMOLED displays
- Communication interface
 - I²C slave at all standard bit rates
 - 100 kbps, 400 kbps, 1 Mbps, and 3.4 Mbps
 - SPI slave bit rates up to 10 Mbps
- Package options
 - 49-ball 3.085 × 3.25 × 0.55-mm WLCSP (0.4-mm ball pitch)
 - 48-ball 4.3 × 4.3 × 0.6-mm UFBGA (0.5-mm ball pitch)

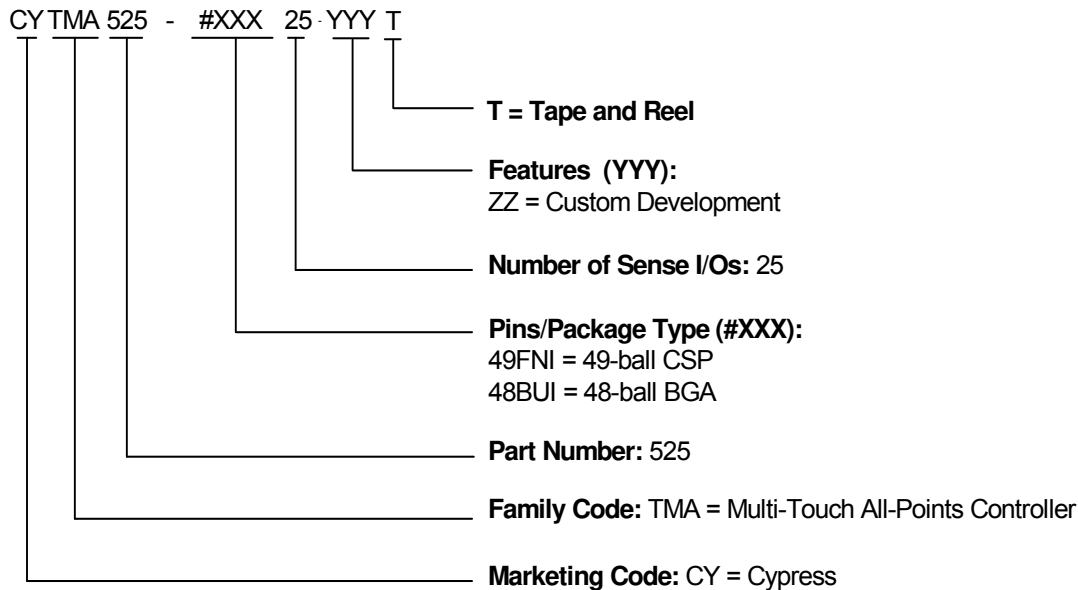
Ordering Information

Table 1 lists the CYTMA525 Datasheet TrueTouch touchscreen controllers. For information on other TrueTouch families, visit <http://www.cypress.com/truetouch>.

Table 1. Device Ordering Information^[1]

| Device Family and Part Number | | TrueTouch | | | | Advanced Features | | Package |
|-------------------------------|-----------------------|------------|---|-------------|----------------------|-------------------|-------|---------------|
| Family | Part Number | Sense Pins | Typ Screen Size (inches) ^[2] | Max Fingers | TX Slew Rate Control | Glove | Hover | |
| Custom Reserved for Kits | CYTMA525-49FNI25ZZT | 25 | 3.0 | ✓ | ✓ | ✓ | ✓ | 49-ball CSP |
| | CYTMA525-48BUI25ZZ(T) | 25 | 3.0 | ✓ | ✓ | ✓ | ✓ | 48-ball UFBGA |

Ordering Code Definitions



Notes

- All devices have the following base features: 10-V TX, ChargerArmor, CapSense Buttons, Large Object Detection and Rejection, Grip Suppression, Water Rejection, Self-capacitance, and High Noise Immunity.
- 4.3-mm electrode pitch for screen sizes up to 3.0-inch diagonal 4:3 aspect ratio. Larger screen sizes can be supported with a larger pitch.

Document History Page

| Document Title: CYTMA525 Datasheet TrueTouch® Multi-Touch All-Points Touchscreen Controller | | | | |
|--|---------|-----------------|-----------------|--|
| Document Number: 001-90979 | | | | |
| Revision | ECN | Orig. of Change | Submission Date | Description of Change |
| ** | 4521985 | SWU | 10/01/2014 | Initial release |
| *A | 5449494 | ELG | 09/29/2016 | Added passive stylus and removed Windows Phone 8 driver support. Removed CYTMA525-49FNI25ABT part. Updated the template. |

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