Product Brief

TMA525 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 28V TX 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
  - 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™ and Windows® 8 driver support
  - Parade Technologies™ TrueTouch® Manufacturing Test Kit (MTK)
  - Touchscreen sensor self-test and Panel ID reporting
- System performance (configuration dependent)
  - Screen sizes up to 3.0-in. diagonal
    - 4.3mm sensor pitch, 4:3 aspect ratio
  - Up to 25 sense I/O
    - 154 intersections (14 × 11)
  - Reports up to four fingers
  - Small finger support down to 4mm
  - Large finger support up to 30mm
  - Refresh rate up to 300Hz; other rates configurable
  - TX frequency up to 500kHz
  - Fast first-touch response (≤13ms)
  - Best-in-class charger noise immunity
    - Immunity up to 60V peak-to-peak (V_{PP})
    - Immunity to AT&T® Zero and Duracell® chargers
- Power (configuration dependent)
  - 1.71 to 5.5V digital and I/O supply
  - 2.65 to 5.5V analog supply
  - 5.6mW average power
  - 4.5µW typical deep-sleep power
- Sensor and system design (configuration dependent)
  - Supports a variety of touchscreen sensors and stackups
    - Manhattan, Diamond, Single-Layer Independent Multi-touch (SLIM®), and Totem-pole patterns
    - Sensor-on-Lens (SOL)
    - On-cell touch-integrated display modules
    - Plastic (PET) and glass-sensor substrates
    - LCD and AMOLED displays
- Communication interface
  - I^2C slave at all standard bit rates
    - 100kbps, 400kbps, 1Mbps, and 3.4Mbps
  - SPI slave bit rates up to 10Mbps
- Package options
  - 49-ball 3.085 × 3.25 × 0.55mm WLCSP (0.4mm ball pitch)
  - 48-ball 4.3 × 4.3 × 0.6mm UFBGA (0.5mm lead pitch)

Information furnished by Parade Technologies is believed to be accurate and reliable. However, no responsibility is assumed by Parade Technologies for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specification is subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Parade Technologies. Trademarks and registered trademarks are the property of their respective owners.

Parade Technologies, Inc.
http://www.paradetech.com

Document Number: 001-90979 Rev. 0
Revised 20150730

© Parade Technologies, Inc., 2015. All rights reserved.

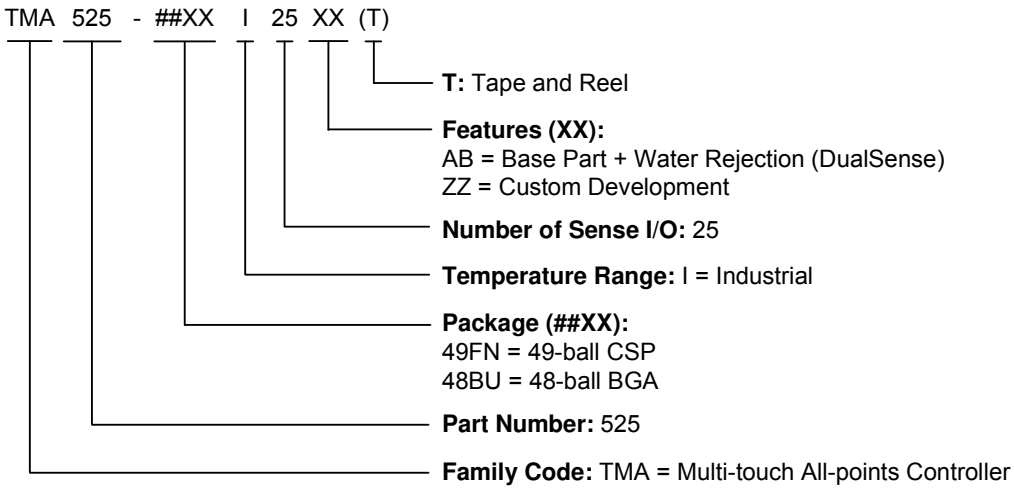
Ordering Information

The following table lists the TMA525 TrueTouch Multi-touch all-points touchscreen controller ordering information. For information on other TrueTouch families, visit http://www.paradetech.com/products/products-overview/.

Device Ordering Information[1]

Device Family and Part Number		Features						Package
Family	Part Number	# of Sense I/O	Typ Screen Size (in.)[2]	# of Finger Touches Recognized	TX Slew Rate Control	Glove	Hover	
Water Rejection (DualSense)	TMA525-49FNI25AB(T)	25	3.0	✔				49-Ball CSP
Custom Reserved for Kits	TMA525-49FNI25ZZ(T)	25	3.0	✔	✔	✔	✔	49-Ball CSP
	TMA525-48BUI25ZZ(T)	25	3.0	✔	✔	✔	✔	48-Ball UFBGA

Ordering Code Definitions



Notes

1. All devices have the following base features: 10V TX, ChargerArmor, CapSense Buttons, Large-Object Detection and Rejection, Grip Suppression, Water Rejection, Self-capacitance, and High-Noise Immunity.
2. 4.3mm pitch for screen sizes up to 3.0-in. diagonal 4:3 aspect ratio. Larger screen sizes can be supported with a larger pitch.