SUMMARY

CY8CTMA1036/768/460

Automotive TrueTouch® Multi-Touch All-Points Touchscreen Controller

Features

- **Automotive Electronics Council (AEC) Q100 qualified**
- **Multi-touch capacitive touchscreen and touchpad controller**
  - 32-bit ARM Cortex CPU
  - Register configurable
  - Noise suppression technologies for display and EMI
    - On-chip 10-V TX supply for higher signal-to-noise ratio (SNR)
    - External display synchronization
  - Water rejection and wet 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 ID reporting
- **System performance**
  - Screen sizes up to 10.1-inch diagonal
    - 5.5-mm sensor pitch, 4:3 aspect ratio
  - Up to 65 sense pins
    - 1036 intersections, 4:3 aspect ratio (37 × 28)
  - Reports up to 10 fingers
  - Small finger support down to 5 mm
  - Large finger support up to 22 mm
  - Refresh rate up to 80 Hz; other rates configurable
  - Fast first-touch response (≤ 37.5 ms for a 10.1-inch panel)
- **Power (configuration dependent)**
  - 1.71-V to 5.5-V digital and I/O supply
  - 2.60-V to 5.5-V analog supply
  - 71-mW average power while sensing
  - 45-µW typical deep-sleep power
- **Sensor and system design (configuration dependent)**
  - Supports a variety of touchscreen sensors and stackups
    - Manhattan and diamond patterns
    - Sensor-on-lens (SOL)
    - Plastic (PET) and glass sensor substrates
    - LCD and AMOLED displays
  - Single on cell flexible printed circuit (FPC) routing enabled by flexible TX/RX configurations
- **I^2C and SPI interface options**
  - I^2C slave at all standard bit rates
    - 100 kbps, 400 kbps, 1 Mbps, and 3.4 Mbps
  - SPI slave bit rates up to 8 Mbps
- **Package options**
  - 100-pin TQFP, 14 × 14 × 1.4 mm, 0.5-mm pin-pitch
- Temperature ranges
  - Automotive-A: –40 °C to 85 °C
  - Automotive-S: –40 °C to 105 °C

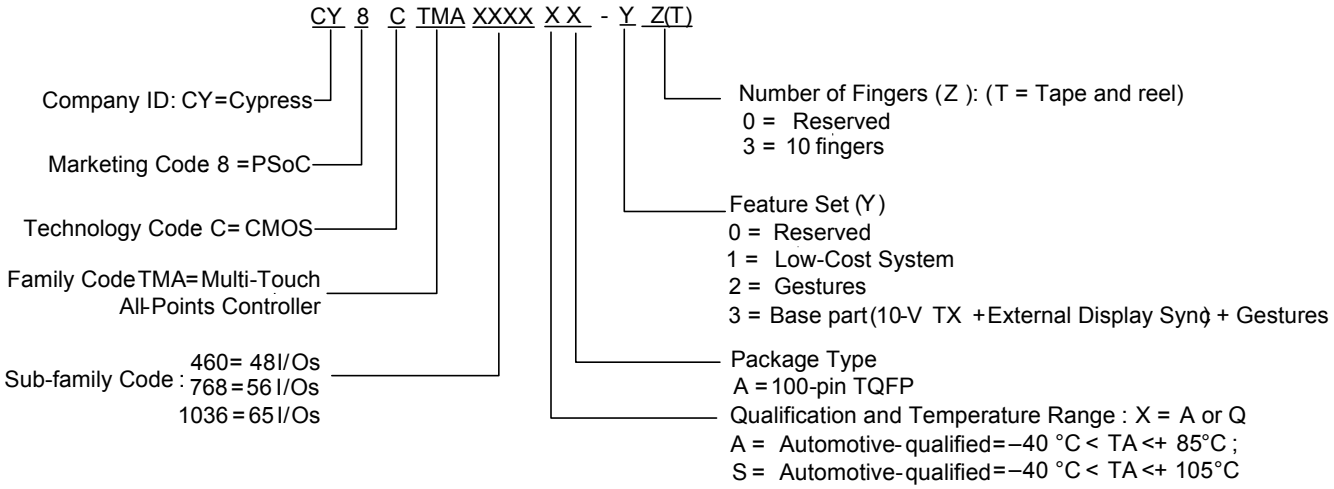
Ordering Information

Table 1 lists the CY8CTMA1036/768/460 TrueTouch touchscreen controllers. For information on other TrueTouch families, visit http://www.cypress.com/truetouch.

Table 1. Device Ordering Information

Family	Marketing Part Number	Number of Sense Pins	Number of fingers	Capsense Buttons	Water Rejection	Object Detect and Reject	Glove Support	Gestures	10-V TX	External Display Sync	Package	Package Size	Silicon ID
Low cost	CY8CTMA460AA-13	48	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01832390
	CY8CTMA460AS-13	48	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01842390
	CY8CTMA768AA-13	56	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01752390
	CY8CTMA768AS-13	56	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01762390
	CY8CTMA1036AA-13	65	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01772390
	CY8CTMA1036AS-13	65	10	✔	✔	✔	✔	–	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01782390
Gestures	CY8CTMA460AA-23	48	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01852390
	CY8CTMA460AS-23	48	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01862390
	CY8CTMA768AA-23	56	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x01792390
	CY8CTMA768AS-23	56	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x017A2390
	CY8CTMA1036AA-23	65	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x017B2390
	CY8CTMA1036AS-23	65	10	✔	✔	✔	✔	✔	–	–	100 TQFP	14 × 14 ×1.4 mm	0x017C2390
Base	CY8CTMA460AA-33	48	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x01872390
	CY8CTMA460AS-33	48	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x01882390
	CY8CTMA768AA-33	56	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x017D2390
	CY8CTMA768AS-33	56	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x017E2390
	CY8CTMA1036AA-33	65	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x017F2390
	CY8CTMA1036AS-33	65	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x01802390
Custom	CY8CTMA1036AA-00	65	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x01812390
	CY8CTMA1036AS-00	65	10	✔	✔	✔	✔	✔	✔	✔	100 TQFP	14 × 14 ×1.4 mm	0x01822390

Ordering Code Definitions



Document History Page

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Revision	**ECN**	**Orig. of Change**	**Submission Date**	**Description of Change**
**	4495966	KAUL	09/09/2014	New summary datasheet.

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