SUMMARY

CY8CTMA884
CY8CTMA616

Automotive TrueTouch® Multi-Touch All-Points Touchscreen Controller

General Description

CY8CTMA884/CY8CTMA616 is a single-chip solution for touchscreen applications. It delivers up to 884-node, high-performance, mutual-capacitive sensing for screen sizes of 5.5-inch to 11.6-inch designs. It employs TrueTouch® Multi-Touch All-Points sensing to track up to 10 fingers simultaneously with no ghosting, and delivers up to 100-Hz refresh rate with 0.5-mm accuracy.

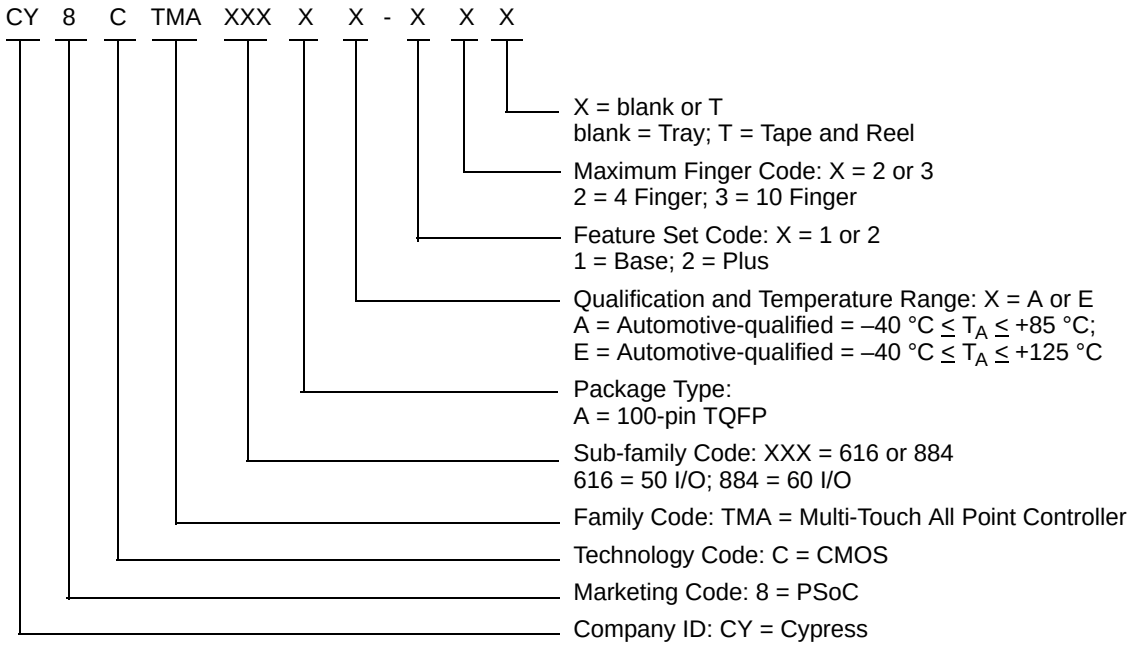
Features

- Automotive Electronics Council (AEC) Q100 qualified
- TrueTouch capacitive touchscreen controller
  - High-performance single-chip mutual-capacitance sensing
  - Up to 100-Hz single-finger refresh rate
  - Scan rate versus signal-to-noise ratio (SNR) trade-off for optimum system performance design
  - TrueTouch Multi-Touch All-Points sensing with up to 884 sense nodes
  - Screen sizes up to 11.6 inches
  - 10-finger simultaneous multi-touch tracking
  - 0.5-mm accuracy
  - 12-mm finger separation with 9-mm fingers
  - Supports up to 26 capacitive buttons
- Number of channels
  - Supports up to 60/50 sensor-driving I/Os: flexible configuration of column sensors, row sensors, and capacitive buttons
  - Supports typical sensor grid configuration
    - Up to 36 columns and up to 26 rows (max of 884 sense nodes with 34 columns and 26 rows) for TMA884
    - Up to 34 columns and up to 22 rows (max of 616 sense nodes with 28 columns and 22 rows) for TMA616
- Advanced capabilities
  - In-system configuration updates through I^2C
  - Programmable power modes: Active (91 mW), Low Power (52 mW), and Deep Sleep (58 µW)
  - On-chip gesture support
  - Water rejection
- Signal processing
  - Advanced analog and digital filtering
  - Self-calibration
  - Large object rejection and suppression
  - EMI immunity
- Communication interface
  - I^2C
  - Dedicated bidirectional interrupt line
- 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 E: –40 °C to 125 °C

Ordering Information

Part Number	Max Sensing I/O	Maximum Fingers	Boot-loader	Water Rejection	I^2C	Capacitive Buttons	Gestures	Description
CY8CTMA616AA-12 (T)	50	4	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA616AA-13 (T)	50	10	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA616AE-12 (T)	50	4	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA616AE-13 (T)	50	10	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA884AA-12 (T)	60	4	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA884AA-13 (T)	60	10	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA884AE-12 (T)	60	4	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA884AE-13 (T)	60	10	✔	✔	✔	×	×	100-pin TQFP
CY8CTMA616AA-22 (T)	50	4	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA616AA-23 (T)	50	10	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA616AE-22 (T)	50	4	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA616AE-23 (T)	50	10	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA884AA-22 (T)	60	4	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA884AA-23 (T)	60	10	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA884AE-22 (T)	60	4	✔	✔	✔	✔	✔	100-pin TQFP
CY8CTMA884AE-23 (T)	60	10	✔	✔	✔	✔	✔	100-pin TQFP

Ordering Code Definitions



Document History Page

Document Title: CY8CTMA884/CY8CTMA616 Automotive TrueTouch® Multi-Touch All-Points Touchscreen Controller Document Number: 001-94114				
Revision	**ECN**	**Orig. of Change**	**Submission Date**	**Description of Change**
**	4495966	KAUL	09/09/2014	New summary datasheet.

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