

# PSoC™ Automotive Multitouch Generation 6XL Hybrid In-cell

## Datasheet Summary

**Note that this is a Summary Datasheet. To access the full version of this datasheet, register in [My Infineon Collaboration Platform \(MyICP\)](#).**

## Features

- In-cell touchscreen controller
- Multitouch capacitive touchscreen controller
  - 32-bit Arm® Cortex® CPU
  - Register-configurable
  - Noise-suppression technologies for display and EMI
    - AutoArmor improves both electromagnetic emissions and immunity
  - Water rejection and wet-finger tracking using DualSense
  - Multitouch glove with automatic mode switching
    - Ten fingers with thin glove ( $\leq 1$ -mm thick)
    - Two fingers with thick glove ( $\leq 5$ -mm thick)
  - Fingernail tracking
  - Large object rejection
  - Automatic baseline tracking to environmental changes
  - Field upgrades via bootloader
  - Manufacturing test kit (MTK)
  - Touchscreen sensor self-test
- System performance (configuration dependent)
  - Screen sizes up to 15-inch diagonal
    - 6.0-mm electrode pitch; 16:10 aspect ratio
  - Up to 54 RX channels, 1836 intersections
  - Reports up to ten fingers
  - Small finger support down to 5 mm
  - Refresh rate up to 250 Hz; other rates configurable
- Power (configuration-dependent)
  - 1.71 to 1.95 V and 3.0 to 5.5 V logic and digital I/Os supply
  - 3.0 to 5.5 V analog supply
  - 30-mW average power
  - 30- $\mu$ W typical deep-sleep power
- Sensor and system design (configuration-dependent)
  - Supports In-cell sensors
    - TX/VCOM share the same layer
    - RX ITO layer on/above the color filter
- Communication interface
  - I<sup>2</sup>C slave at 100 and 400 kbps
- Package
  - 100-pin TQFP 14 × 14 × 1.4 mm (0.5-mm pitch)

### Features

- Ambient temperature range
  - Automotive-A: -40°C to 85°C
  - Automotive-S: -40°C to 85°C

Ordering information

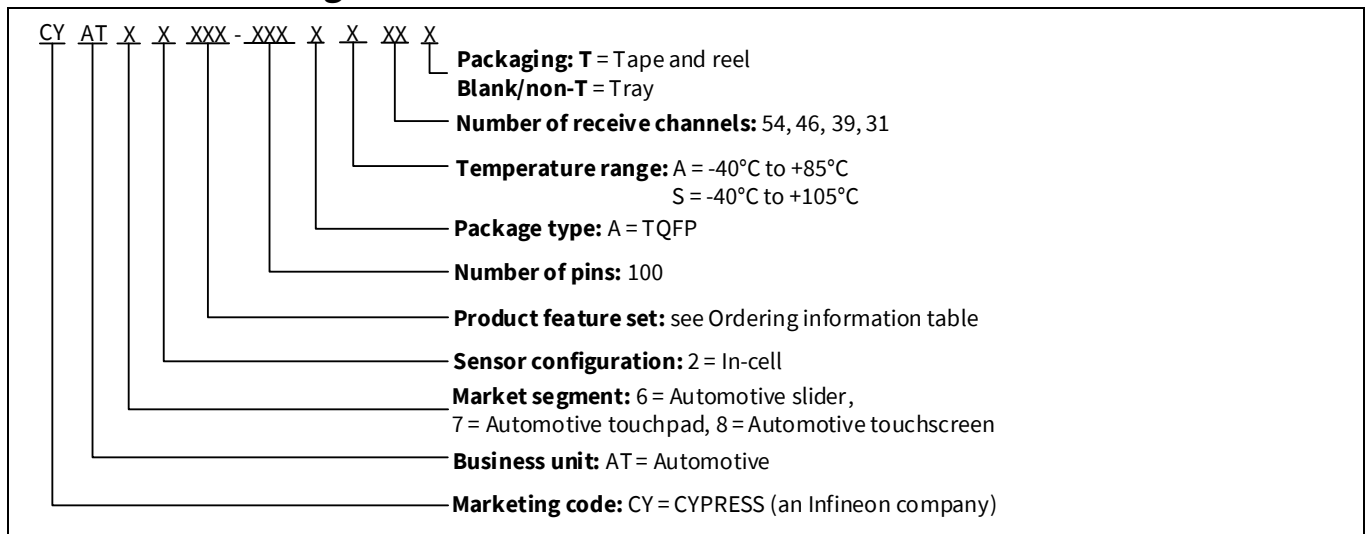
## 1 Ordering information

**Table 1** lists the CYAT8268X touchscreen controllers.

**Table 1** Ordering information <sup>[1]</sup>

| MPN               | Number of receive channels | Number of fingers | Water rejection | Gesture | Thick overlay/thick glove support |
|-------------------|----------------------------|-------------------|-----------------|---------|-----------------------------------|
| CYAT82687-100AA31 | 31                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AS31 | 31                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AA39 | 39                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AS39 | 39                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AA46 | 46                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AS46 | 46                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AA54 | 54                         | 10                | ✓               | ✓       | ✓                                 |
| CYAT82687-100AS54 | 54                         | 10                | ✓               | ✓       | ✓                                 |

### 1.1 Ordering code definitions



**Note**

- All devices have the following base features: Water rejection, DisplayArmor, AutoArmor, DualSense, CAPSENSE™ buttons, and large object detection and rejection.

Revision history

## Revision history

| Document revision | Date       | Description of changes   |
|-------------------|------------|--|
| **                | 2017-01-24 | New summary datasheet.   |
| *A                | 2020-10-29 | Obsolete document.   |
| *B                | 2021-03-29 | Reactivated document.<br>Updated <b>Automotive-S: -40°C to 85°C.</b><br>spec 51-85048 – Changed revision from *J to *K.<br>Updated to new template.<br>Completing Sunset Review. |
| *C                | 2021-04-21 | Updated <b>Ordering code definitions.</b>  |
| *D                | 2022-05-19 | Updated to the PSoC™ Automotive Multitouch branding guidelines.  |
| *E                | 2022-07-26 | Updated to IFX template.<br>Added MyICP link.<br>Removed package diagram.  |