

PSoC™ Automotive Multitouch Generation 7XL Hybrid In-cell

Datasheet Summary

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

Features

- Automotive Electronics Council (AEC) AEC-Q100 qualified
- In-cell touchscreen controller
- Multi-touch capacitive touchscreen controller
 - 32-bit Arm® Cortex® CPU
 - Register-configurable
 - Noise-suppression technologies for display and EMI
 - AutoArmor improves both electromagnetic emissions and immunity
 - Effective 20-V drive for higher signal-to-noise ratio (SNR)
 - Water rejection
 - Multitouch glove with automatic mode switching
 - Ten fingers with thin glove (≤1-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
 - Android driver support
- System performance (configuration dependent)
 - Screen sizes up to 20-inch diagonal
 - 5.3-mm electrode pitch; 16:10 aspect ratio
 - Up to 64 RX channels, 2176 intersections; 16:10 aspect ratio
 - Reports up to ten fingers
 - Small finger support down to 5 mm
 - Refresh rate up to 250 Hz; other rates configurable
 - Integrated DSP to process and filter data for faster scanning and lower noise
 - 64 RX channels, each with its own ADC, to enable single pass long-side scanning for faster processing of touch data and better noise filtering
- 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
- Sensor and system design (configuration-dependent)
 - Supports In-cell sensors
 - TX/VCOM share the same layer
 - RX ITO layer on/above the color filter
- Primary host communication interface
 - I²C slave at 100 and 400 kbps

Features

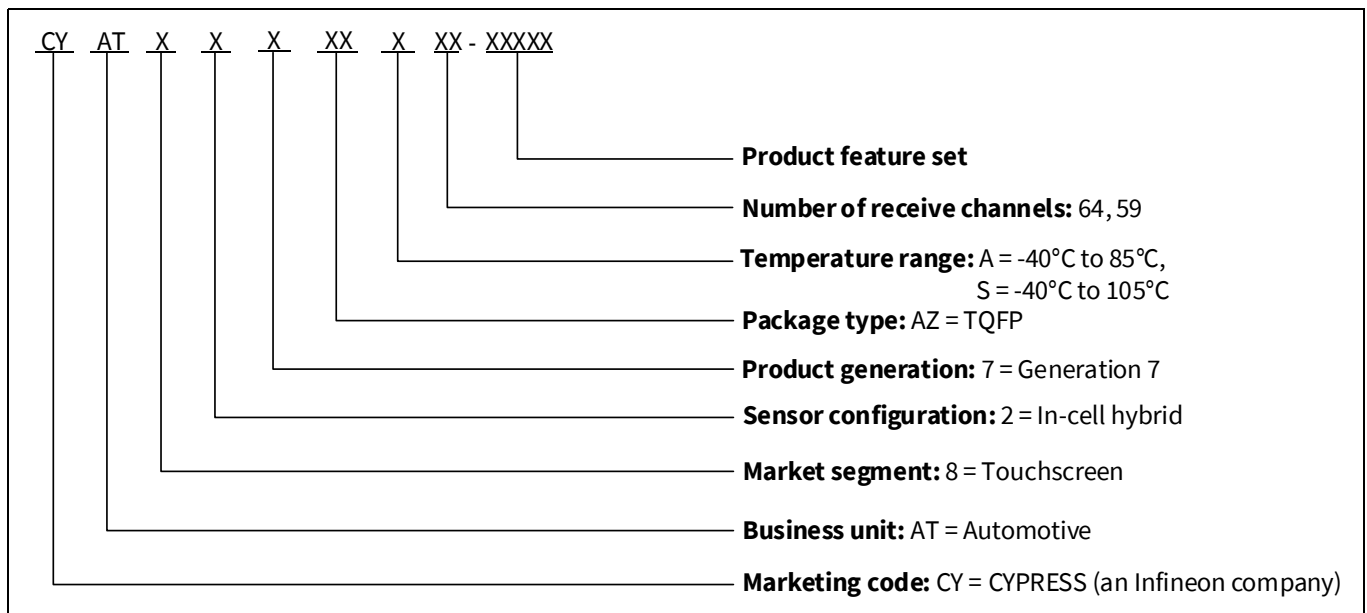
- Package
 - 100-pin TQFP 14 × 14 × 1.4 mm (0.5-mm pitch)
- Ambient temperature range
 - Automotive-A: -40°C to 85°C
 - Automotive-S: -40°C to 105°C

1 Ordering information

Table 1 Ordering information^[1]

MPN	Number of receive channels	100 -TQFP	Rotary knob	Multi-touch	Gesture touch-screen	H2O	Package
CYAT827AZA59-22002	59	✓		✓		✓	100-TQFP
CYAT827AZS59-22002	59	✓		✓		✓	100-TQFP
CYAT827AZA59-2200A	59	✓		✓	✓	✓	100-TQFP
CYAT827AZS59-2200A	59	✓		✓	✓	✓	100-TQFP
CYAT827AZA64-22002	64	✓		✓		✓	100-TQFP
CYAT827AZS64-22002	64	✓		✓		✓	100-TQFP
CYAT827AZA64-2200A	64	✓		✓	✓	✓	100-TQFP
CYAT827AZS64-2200A	64	✓		✓	✓	✓	100-TQFP
CYAT827AZA59-3200A	59	✓	✓	✓	✓	✓	100-TQFP
CYAT827AZS59-3200A	59	✓	✓	✓	✓	✓	100-TQFP
CYAT827AZA64-3200A	64	✓	✓	✓	✓	✓	100-TQFP
CYAT827AZS64-3200A	64	✓	✓	✓	✓	✓	100-TQFP

1.1 Ordering code definitions



Notes

1. All devices have the following base features: Water rejection, DisplayArmor, AutoArmor, DualSense, CAPSENSE™ buttons, large object detection and rejection, grip suppression, and thin/thick glove support.

Revision history

Document revision	Date	Description of changes
**	2022-07-26	Initial release.

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