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The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

**Continuity of document content**

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

**Continuity of ordering part numbers**

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

## Features

### ■ Fingerprint Sensor

- BGA package consisting of a die mounted on a polymer substrate sensor
- 9.3 mm × 9.3 mm active imaging area fingerprint sensor
- 360 DPI 132 × 132 pixel array at 8-bits per pixel resolution
- Great image quality with polymer, plastic, and ceramic coatings < 100µ in overall thickness
- 32-bit Arm® Cortex®-M0 CPU w/32KB Firmware Flash
- Noise-suppression technologies for the battery chargers, displays, and radios in the device
- Secure firmware updates via bootloader, allowing future product enhancements
- Self-calibration and self-testing
- Factory tuned with on-chip baseline storage, no field tuning required
- Optional False Touch rejection

### ■ System Performance

- Fingerprint image capture and transfer to host MCU < 200ms
- <1% FRR at FAR >1:100K using CY-supplied matching SW including 360° finger rotation
- 14 Finger Identify Match Time: ~500ms (average)
- Live Finger Complete Acquisition Time (Get\_Image): ~224ms)

### ■ Embedded Environment

- Embedded Framework (CYFPEF) provided for porting into host processor
- Recommended MCU Features: Cortex M4, 256KB of flash, and 96KB of RAM
- Ability to import and export templates securely
- Configurable security levels (1:10K to 1:1000K FAR)
- Simple secure external communication protocol over MCU UART Interface

### ■ Sensor Communication Interface

- SPI slave bit rates up to 7.8 Mbps
- Strong 256-bit AES encryption optionally secures the system interface from sensor to the host processor

### ■ Power (configuration-dependent)

- Operation of single 3.3-V supply
- 1.71 V to 1.95 V direct digital supply or 2.0 V to 5.5 V via LDO
- 2.65 V to 5.5 V analog supply
- <80-mW active power (average power while sensing)
- 8-µW typical deep-sleep power
- 400-µW Finger detection power @ 10 detects per second

### ■ Industrial Operating Temperature Range

- -40 °C to +85 °C

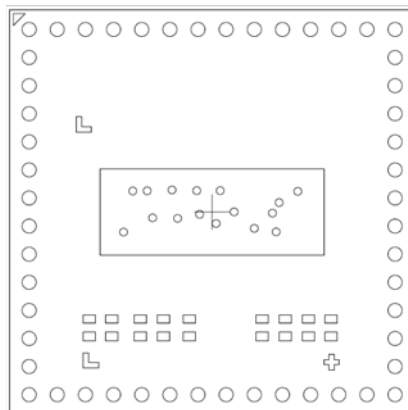
### ■ Package Options

- 52 BGA package
- 11.50 × 11.50 mm External Dimensions

## Optional Features

- False finger rejection limiting host processor interruptions
- Fake finger rejection (anti-spoofing)
- Programmable finger detection timing (Wake-on-Finger)
- Navigation

### Sensor Shown Coating



Back of the Sensor



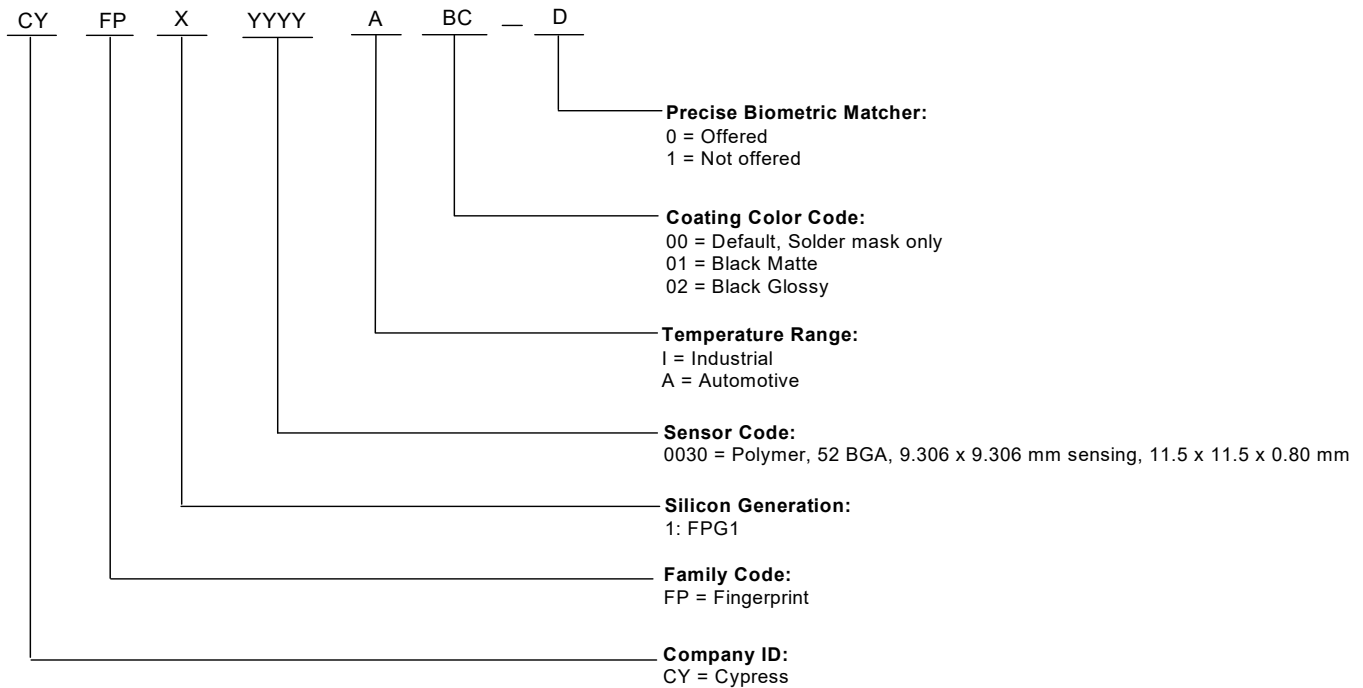
Front of the Sensor

**Ordering Information**

**Table 1. Ordering Information**

Silicon Type	Package Type	Package Size	Operating Temperature
CYFP10030I01	52-Ball BGA	11.5 × 11.5 × 0.80 mm	Industrial
CYFP10030I01-1			

**Part Ordering Code Definitions**



All devices in the CYFP1 family comply to RoHS-6 specifications, demonstrating the commitment by Cypress to Pb-free products. Lead (Pb) is an alloying element in solders that has resulted in environmental concerns due to potential toxicity. Cypress uses the nickel-palladium-gold (NiPdAu) technology for a majority of the lead frame-based packages.

A high-level review of the Cypress Pb-free position is available on our website. Specific package information is also available. Package Material Declaration Datasheets (PMDDs) identify all substances contained within Cypress packages. PMDDs also confirm the absence of many banned substances. The information in the PMDDs will help Cypress customers plan for recycling or other “end of life” requirements.

**Document History Page**

Document Title: CYFP1003XXXX, CYFP1-9393 Datasheet Document Number: 002-24125				
Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	6193568	PMAD	06/01/2018	New datasheet
*A	6283450	PMAD	08/31/2018	Updated <a href="#">Features</a> .

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