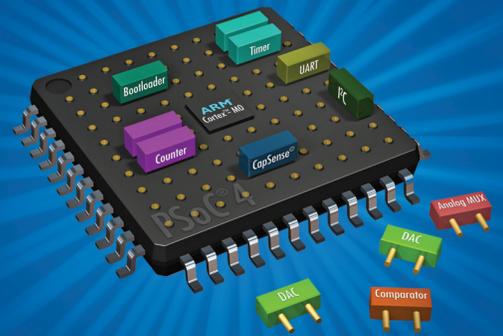


CYPRESS PSoC[®] 4000

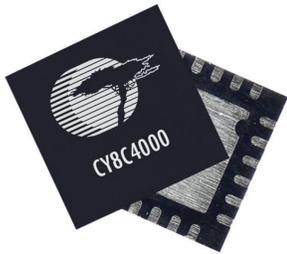
32-BIT ARM[®] PERFORMANCE WITH PSoC FLEXIBILITY



PRODUCT OVERVIEW

INTRODUCTION

PSoC[®] 4000 is a low-cost, entry-level 32-bit ARM[®]-based SoC for quick, simple upgrades of legacy 8-bit and 16-bit MCUs. The PSoC 4000 family delivers PSoC's hallmark design flexibility, along with CapSense[®], Cypress's industry-leading capacitive sensing technology, to cost-sensitive and high-volume applications. The PSoC 4000 family also integrates programmable digital and analog peripherals, such as timers/counters/PWMs, I²C and comparators, to suit a variety of consumer and industrial applications. These devices are available in footprint packages as small as 3 x 3 x 0.6 mm.



Upgrade Legacy 8-bit and 16-bit MCUs

- Embedded system designs now require higher-performing MCUs at the same cost
- PSoC 4000 offers a 32-bit ARM[®] Cortex[™]-M0 MCU to meet processing and power requirements
- PSoC's programmable I/O subsystem enables you to easily connect the internal analog and digital signals to the external I/Os to design your custom footprint.

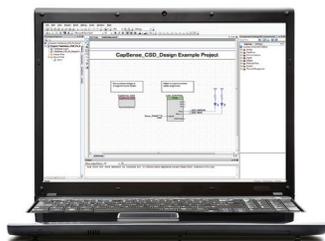
CapSense: The Industry's Best Capacitive Sensing Solution

- Enables a touch user interface with up to 16 I/Os
- Uses SmartSense[™] Auto-tuning during all product design phases
- Prevents false touches caused by liquids
- Implements advanced proximity sensing: wake-on-approach, liquid level detection, and IR sensor replacement
- Performs reliably in noisy environments



Truly Scalable Architecture

- Enables seamless migration up and across all the PSoC 4 device families
- Accelerates time-to-market with hardware and firmware co-design using the free PSoC Creator[™] Integrated Design Environment (IDE)
- ARM-friendly ecosystem with support for third-party tools, including code editors, debuggers and programmers, simplifies design with PSoC 4



FEATURES

32-BIT MCU SUBSYSTEM:

- 16-MHz ARM[®] Cortex[™]-M0 MCU
- Up to 16 KB flash and 2 KB SRAM

PROGRAMMABLE ANALOG:

- Two IDACs (7 bit and 8 bit):
digitally controlled current sources
- One comparator (CMP)

CAPSENSE[®] WITH SMARTSENSE[™] AUTO-TUNING:

- One Cypress Capacitive Sigma-Delta[™] (CSD) controller
- Capacitive sensing supported on up to 16 pins

PROGRAMMABLE DIGITAL:

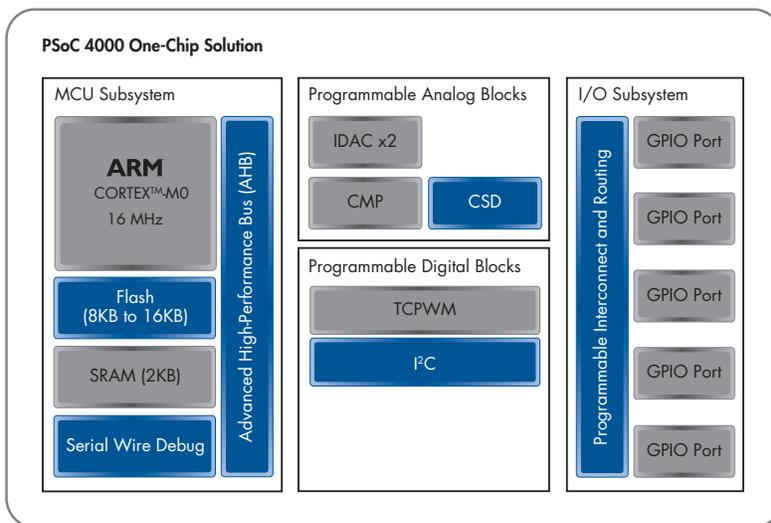
- One configurable 16-bit timer, counter or pulse-width modulator (TCPWM) block
- One I²C master or slave

PACKAGES

8-SOIC, 16-SOIC, 16-QFN, 24-QFN

APPLICATIONS

- White goods • Mobile phones • Tablets • Wearables • Music players • Home automation • Industrial control panels • Servers

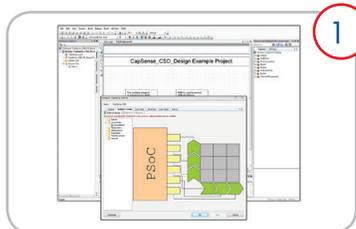


PSoC 4000 Block Diagram

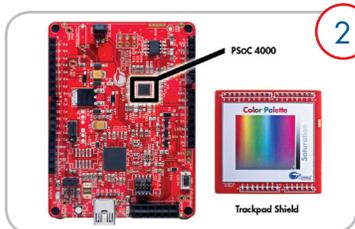
PSoC 4000 DEVICE PORTFOLIO

MPN	Max CPU Speed (MHz)	Flash (KB)	SRAM (KB)	CapSense	7-bit IDAC	8-bit IDAC	Comparators	TCPWM Blocks	SCB (I2C)	Package
CY8C4013SXI-400	16	8	2	-	-	-	-	1	1	8-SOIC
CY8C4013SXI-410	16	8	2	-	1	1	1	1	1	8-SOIC
CY8C4013SXI-411	16	8	2	-	1	1	1	1	1	16-SOIC
CY8C4013LQI-411	16	8	2	-	1	1	1	1	1	16-QFN
CY8C4014SXI-420	16	16	2	√	1	1	1	1	1	8-SOIC
CY8C4014SXI-411	16	16	2	-	1	1	1	1	1	16-SOIC
CY8C4014SXI-421	16	16	2	√	1	1	1	1	1	16-SOIC
CY8C4014LQI-421	16	16	2	√	1	1	1	1	1	16-QFN
CY8C4014LQI-412	16	16	2	-	1	1	1	1	1	24-QFN
CY8C4014LQI-422	16	16	2	√	1	1	1	1	1	24-QFN

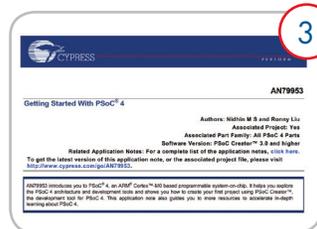
GET STARTED NOW



1



2



3



4

Download the PSoC Creator Integrated Design Environment
www.cypress.com/Creator

Buy the \$30 Evaluation Kit (CY8CKIT-040)
www.cypress.com/go/CY8CKIT-040

Download the Getting Started App Note
www.cypress.com/go/AN79953

Register for a free PSoC 4 workshop in your area
www.cypress.com/workshops

Cypress Semiconductor Corporation

198 Champion Court, San Jose CA 95134
 phone +1 408.943.2600 fax +1 408.943.6848
 toll free +1 800.858.1810 (U.S. only) Press "1" to reach your local sales representative

