

General Physical Specification

For product parameters and availability, refer to the CY7C60223 product datasheets available on the Cypress Semiconductor web site (<http://www.cypress.com/>).

Table 1. CY7C60223 Die Physical Specification

Marketing Part Number	CY7C60223	Substrate Connection Req.:	Ground
Die Part Number	7C60223	Wafer Diameter [mm]:	203.2
Die Technology:	0.35 μm CMOS	Die Size [μm]:	1727 μm x 2187 μm
Metal I:	AlCu 0.6 μm	Step Size [μm]:	1792.98 μm x 2272.998 μm
Metal II:	AlCu 0.8 μm	Scribe Size [μm]:	65 x 86
Metal III:	NA	Pad Count:	23
Die Passivation:	0.6 μm SiO ₂ /0.6 μm Si ₃ N ₄	Pad Size [μm]:	70 μm x 70 μm

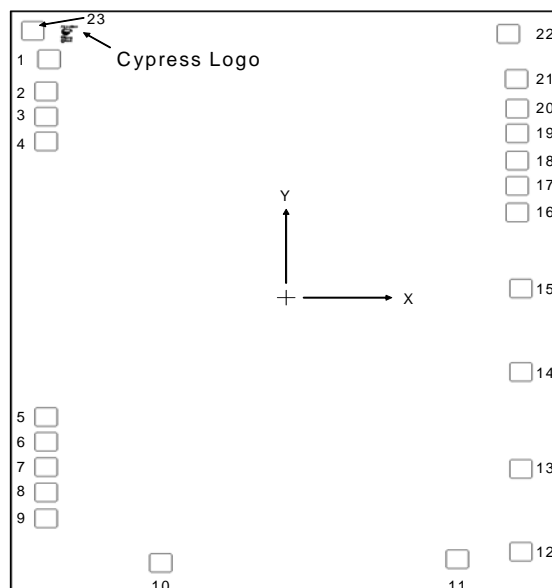
Product Thickness Guide

Table 2. Thickness Guide for CY7C60223

Code	Description	Min	Nom	Max	Unit
X14	Die (14 Mils)	342.5	355	367.5	μm
3XWC	Wafer (29 Mils)	710	725	740	μm

Bond Pads

Figure 1. 7C60223 Bond Pad Locations ^[1]



Note

1. The bond pad diagram gives the approximate location of the pads. The bond pad co-ordinates table gives the accurate location of the pads on the following page.

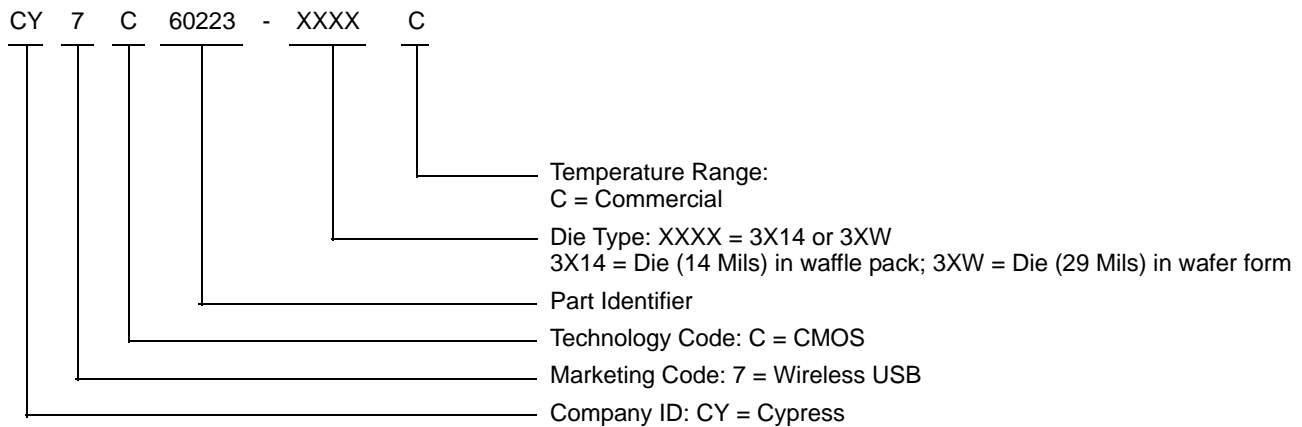
Table 3. Bond Pad Coordinates and Signal Description

Pad Index	Pad Name	Pad Co-ordinates		Signal Description
		X (microns)	Y (microns)	
1	P0.7	-742.730	911.99	GPIO Port 0 bit 7 – Configured individually
2	P0.6/TIO1	-755.060	792.2	GPIO Port 0 bit 6 – Configured individually Alternate function Timer capture inputs or Timer output TIO1
3	P0.5/TIO0	-755.060	699.3	GPIO Port 0 bit 5 – Configured individually Alternate function Timer capture inputs or Timer output TIO0
4	P0.4/INT2	-755.060	606.4	GPIO Port 0 bit 4 – Configured individually Optional rising edge interrupt INT2.
5	P0.3/INT1	-755.060	-430.080	GPIO Port 0 bit 3 – Configured individually Optional rising edge interrupt INT1.
6	P0.2/INT0	-755.060	-522.980	GPIO Port 0 bit 2 – Configured individually Optional rising edge interrupt INT0.
7	P0.1/CLKOUT	-755.060	-618.830	GPIO Port 0 bit 1 – Configured individually Oscillator output when configured as Clock Out.
8	P0.0/CLKIN	-755.060	-714.020	GPIO port 0 bit 0 – Configured individually Oscillator input when configured as Clock In.
9	P2.1	-755.060	-810.220	GPIO port 2 – configured as a group (byte)
10	P2.0	-393.580	-977.930	
11	VSS	537.5	-964.700	
12	P1.0	736.11	-936.680	GPIO port 1 bit 0/ISSP-SCLK. If this pin is used as a general-purpose output it draws current. It is, therefore, configured as an input to reduce current draw.
13	P1.1	736.11	-625.130	GPIO port 1 bit 1/ISSP-SDATA If this pin is used as a general-purpose output it draws current. It is, therefore, configured as an input to reduce current draw.
14	VDD	736.11	-260.670	Power
15	P1.2	736.11	53.8	GPIO port 1 bit 2
16	P1.3/SSEL	723.51	336.78	GPIO port 1 bit 3 – Configured individually Alternate function is SSEL signal of the SPI bus.
17	P3.0	723.51	438.69	GPIO port 3 – Configured as a group (byte)
18	P3.1	723.51	532.88	
19	P1.4/SCLK	723.51	635.31	GPIO port 1 bit 4 – Configured individually Alternate function is SCLK signal of the SPI bus.
20	P1.5/SMOSI	723.51	728.22	GPIO port 1 bit 5 – Configured individually Alternate function is SMOSI signal of the SPI bus.
21	P1.6/SMISO	723.51	839.29	GPIO port 1 bit 6 – Configured individually Alternate function is SMISO signal of the SPI bus.
22	P1.7	696.63	1008.48	GPIO port 1 bit 7 – Configured individually TTL voltage threshold.
23	NC	-795.400	1023.27	No Connect

Die Ordering Information

Ordering Code	Die Type	Operating Range
CY7C60223-3X14C	Die (14 Mils) in waffle pack	Commercial
CY7C60223-3XWC	Die (29 Mils) in wafer form	Commercial
CG7593AS	Die (14 Mils) in waffle pack	Commercial

Ordering Code Definitions



Document Conventions

Units of Measure

Symbol	Unit of Measure
μm	micrometer

Document History Page

Document Title: CY7C60223, enCoRe™ II Low Voltage Microcontroller Die Document Number: 001-75790				
Revision	ECN	Orig. Change	Submission Date	Description of Change
**	3507649	ANTG	01/31/2012	New datasheet
*A	3705650	SIRK	08/07/2012	Updated title and document information with part number CY7C60223-3XWC.
*B	4426785	SETU	07/01/2014	Updated Die Ordering Information (Updated part numbers). Updated in new template.
*C	4447669	VIKS	07/18/2014	Updated Product Thickness Guide : Updated Table 2 : Replaced 27 Mils with 29 Mils in description of 3XWC. Updated minimum, nominal and maximum values of 3XWC. Updated Die Ordering Information : No change in part numbers. Replaced 27 Mils with 29 Mils in "Die Type" column corresponding to Ordering Code "CY7C60223-3XWC". Updated Ordering Code Definitions .
*D	4650356	VIKS	02/04/2015	No technical changes. Sunset ECN.

Sales, Solutions, and Legal Information

Worldwide Sales and Design Support

Cypress maintains a worldwide network of offices, solution centers, manufacturer's representatives, and distributors. To find the office closest to you, visit us at [Cypress Locations](#).

Products

Automotive	cypress.com/go/automotive
Clocks & Buffers	cypress.com/go/clocks
Interface	cypress.com/go/interface
Lighting & Power Control	cypress.com/go/powerpsoc
Memory	cypress.com/go/memory
PSoC	cypress.com/go/psoc
Touch Sensing	cypress.com/go/touch
USB Controllers	cypress.com/go/USB
Wireless/RF	cypress.com/go/wireless

PSoC® Solutions

[psoc.cypress.com/solutions](#)
[PSoC 1](#) | [PSoC 3](#) | [PSoC 4](#) | [PSoC 5LP](#)

Cypress Developer Community

[Community](#) | [Forums](#) | [Blogs](#) | [Video](#) | [Training](#)

Technical Support

[cypress.com/go/support](#)

© Cypress Semiconductor Corporation, 2012-2015. The information contained herein is subject to change without notice. Cypress Semiconductor Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in a Cypress product. Nor does it convey or imply any license under patent or other rights. Cypress products are not warranted nor intended to be used for medical, life support, life saving, critical control or safety applications, unless pursuant to an express written agreement with Cypress. Furthermore, Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress products in life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Any Source Code (software and/or firmware) is owned by Cypress Semiconductor Corporation (Cypress) and is protected by and subject to worldwide patent protection (United States and foreign), United States copyright laws and international treaty provisions. Cypress hereby grants to licensee a personal, non-exclusive, non-transferable license to copy, use, modify, create derivative works of, and compile the Cypress Source Code and derivative works for the sole purpose of creating custom software and or firmware in support of licensee product to be used only in conjunction with a Cypress integrated circuit as specified in the applicable agreement. Any reproduction, modification, translation, compilation, or representation of this Source Code except as specified above is prohibited without the express written permission of Cypress.

Disclaimer: CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Cypress reserves the right to make changes without further notice to the materials described herein. Cypress does not assume any liability arising out of the application or use of any product or circuit described herein. Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress' product in a life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Use may be limited by and subject to the applicable Cypress software license agreement.