



# PSoC® (Programmable System on Chip) Microcontrollers



The Programmable System-on-Chip (PSoC) microcontrollers integrate a microcontroller and the analog and digital components that typically surround it in an embedded system. Easy-to-use development tools enable designers to select the precise peripheral functionality they desire, including analog functions such as amplifiers, ADCs, DACs,

filters and comparators and digital functions such as timers, counters, PWMs, SPI and UARTs. The PSoC family's analog features include rail-to-rail inputs, programmable gain amplifiers and up to 14-bit ADCs with exceptionally low noise, input leakage and voltage offset. PSoC devices include up

to 32KB of flash memory, 2KB of SRAM, an 8x8 multiplier with 32-bit accumulator, power and sleep monitoring circuits, and hardware I<sup>2</sup>C, USB and CapSense Technology communications. Operating Voltage from 2.4V – 5.25V Temperature Range: -40°C – 85°C

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Analog Blocks	Digital Blocks	Flash	SRAM	HW Comm Bus	I/O	Vcc	Package	Digi-Key Part No.	1	Price Each 25	100	Cypress Part No.						
1 CapSense	0	8K	512	I <sup>2</sup> C	32	2.4 – 5.25	32-QFN	428-1914-ND	4.09	2.20	1.77	CY8C20434-12LXXI						
4	4	4K	256	I <sup>2</sup> C	6	2.4 – 5.25	8-SOIC	428-1682-ND	1.78	1.09	.89	CY8C21123-24SXI						
					16		16-SOIC	428-1683-ND	2.08	1.28	1.04	CY8C21223-24SXI						
					16		20-SSOP	428-1684-ND	2.13	1.31	1.07	CY8C21323-24PVXI						
					16		24-QFN	428-1685-ND	2.38	1.46	1.19	CY8C21323-24LFXI						
		12	8K	512	I <sup>2</sup> C	12	2.4 – 5.25	16-SOIC	428-1611-ND	2.82	2.20	1.77	CY8C21234-24SXI					
		16				20-SSOP		428-1612-ND	3.04	2.35	1.90	CY8C21334-24PVXI						
		28				32-QFN		428-1613-ND	3.26	2.50	2.04	CY8C21434-24LFXI						
		24				28-SSOP		428-1614-ND	3.28	2.55	1.97	CY8C21534-24PVXI						
26	32-QFN	428-1615-ND	3.54	2.75	2.22	CY8C21634-24LFXI												
6	4	4K	256	I <sup>2</sup> C	6	2.4 – 5.25	8-DIP	428-1602-ND	2.95	1.77	1.48	CY8C24123A-24PXI						
					6		8-SOIC	428-1603-1-ND†	2.73	1.64	1.37	CY8C24123A-24SXIT						
					6		8-SOIC	428-1603-2-ND‡		3270.00/2,500		CY8C24123A-24SXIT						
					16		20-DIP	428-1604-ND	3.68	2.21	1.84	CY8C24223A-24PXI						
					16		20-SSOP	428-1605-ND	3.35	2.01	1.68	CY8C24223A-24PVXI						
					16		20-SOIC	428-1606-ND	3.65	2.19	1.83	CY8C24223A-24SXI						
					24		28-SSOP	428-1608-ND	3.85	2.31	1.93	CY8C24423A-24PVXI						
					24		28-SOIC	428-1609-ND	3.85	2.31	1.93	CY8C24423A-24SXI						
					24		32-QFN	428-1610-ND	3.32	2.55	2.08	CY8C24423A-24LFXI						
					6		4	16K	1K	I <sup>2</sup> C, USB	50	3 – 5.25	56-QFN	428-1651-ND	4.50	3.50	2.82	CY8C24794-24LFXI
6	2	16K	1K	I <sup>2</sup> C, USB	49	3 – 5.25	56-QFN	428-1917-ND	5.85	3.50	2.82	CY8C24894-24LFXI						
					56		100-VFBGA	428-1915-ND	7.38	4.55	3.69	CY8C24994-24BVXI						
					56		68-QFN	428-1916-ND	7.38	4.55	3.69	CY8C24994-24LFXI						
12	8	8K	256	—	16	3 – 5.25	20-SSOP	428-1640-ND	5.95	4.12	3.69	CY8C26233-24PVXI						
		16K	256	—	24	3 – 5.25	28-SSOP	428-1643-ND	6.15	4.26	3.82	CY8C26443-24PVXI						
					24		28-SOIC	428-1644-ND	6.18	4.28	3.83	CY8C26443-24SXI						
12	8	16K	256	I <sup>2</sup> C	6	3 – 5.25	8-DIP	428-1593-ND	5.00	3.00	2.50	CY8C27143-24PXI						
					16		20-SSOP	428-1594-ND	5.40	3.24	2.70	CY8C27243-24PVXI						
					16		20-SOIC	428-1595-ND	5.40	3.24	2.70	CY8C27243-24SXI						
					24		28-DIP	428-1596-ND	5.90	3.54	2.95	CY8C27443-24PXI						
					24		28-SSOP	428-1597-ND	5.68	3.41	2.84	CY8C27443-24PVXI						
					24		28-SOIC	428-1598-ND	5.68	3.41	2.84	CY8C27443-24SXI						
					44		48-SSOP	428-1600-ND	6.03	3.62	3.02	CY8C27643-24PVXI						
					44		48-QFN	428-1601-ND	6.98	4.19	3.49	CY8C27643-24LFXI						
					12		16	32K	2K	I <sup>2</sup> C	24	3 – 5.25	28-DIP	428-1586-ND	8.78	5.27	4.39	CY8C29466-24PXI
											24		28-SSOP	428-1587-ND	7.65	4.80	3.83	CY8C29466-24PVXI
24	28-SOIC	428-1588-ND	7.65	4.59		3.83					CY8C29466-24SXI							
40	44-TQFP	428-1589-ND	8.53	5.12		4.27					CY8C29566-24AXI							
44	28-SSOP	428-1590-ND	8.03	4.82		4.02					CY8C29666-24PVXI							
44	48-QFN	428-1591-ND	9.15	5.49		4.58					CY8C29666-24LFXI							
64	100-TQFP	428-1592-ND	9.78	5.87		4.89					CY8C29666-24AXI							

† Cut Tape ‡ Tape and Reel

## NEW! CapSense Express™



The CapSense Express Family, supported by PSOC Express™ Visual Embedded System Design Tool and the CapSense Express Configuration Tool, is the quickest and easiest to use for touch sensing functionality.

The CapSense Express family supports up to ten general purpose I/Os for buttons, multi-segment sliders, LEDs and other general purpose functions, all configured via I<sup>2</sup>C registers.

Analog Blocks	Digital Blocks	Flash	SRAM	HW Comm Bus	I/O	Vcc	Package	Digi-Key Part No.	1	Price Each 25	100	Cypress Part No.
1 CapSense	0	2K	512	I <sup>2</sup> C	10	2.4 – 5.25	16-QFN	428-2046-ND	2.23	1.78	1.34	CY8C20110-LDX2I
					10		16-SOIC	428-2047-5-ND	2.61	2.09	1.63	CY8C20110-SX2I
					4		16-QFN	428-2048-ND	2.70	2.16	1.68	CY8C20140-LDX2I
					4		16-SOIC	428-2049-5-ND	2.39	1.91	1.49	CY8C20140-SX2I
					4		8-SOIC	428-2050-5-ND	2.39	1.91	1.49	CY8C20142-SX1I
					6		16-QFN	428-2051-ND	2.70	2.16	1.68	CY8C20160-LDX2I
					6		16-SOIC	428-2052-5-ND	2.59	2.07	1.61	CY8C20160-SX2I
					8		16-QFN	428-2053-ND	2.70	2.16	1.68	CY8C20180-LDX2I
					8		16-SOIC	428-2054-5-ND	2.63	2.11	1.64	CY8C20180-SX2I
					10		16-QFN	428-2055-ND	2.70	2.16	1.68	CY8C201A0-LDX2I
					10		16-SOIC	428-2056-5-ND	2.70	2.16	1.68	CY8C201A0-SX2I

## Port Expanders



Flash	I/O	Vcc	Package	Digi-Key Part No.	1	Price Each 25	100	Cypress Part No.
3KB EEPROM	28	3.0 – 5.25	28-SSOP	428-2015-5-ND	2.95	2.36	1.84	CY8C09520A-24PVXI
11KB EEPROM	48		48-SSOP	428-2016-5-ND	4.84	3.87	3.01	CY8C09540A-24PVXI
27KB EEPROM	100		100-TQFP	428-2017-ND	5.29	4.23	3.29	CY8C09560A-24AXI

## EZ-Color™ High-Brightness LED Controllers



Cypress' EZ-Color family of devices offers the ideal control solution for High Brightness LED applications requiring intelligent dimming control. EZ-Color devices combine the power and flexibility of PSoC® (Programmable System-on-Chip™); with Cypress' PriSM (Precise illumination signal modulation) drive technology providing lighting designers a fully

customizable and integrated lighting solution platform. EZ-Color devices support up to 16 independent LED channels with up to 32 bits of resolution per channel, enabling lighting designers the flexibility to choose the LED array size and color quality EZ-Color's virtually limitless analog and digital customization allow for simple integration of features.

LED Channels	Analog Blocks	Flash	SRAM	Package	Digi-Key Part No.	1	Price Each 25	100	Cypress Part No.	Development Kit
4	6	16KB	1KB	68-QFN	428-1947-ND	9.75	6.00	4.88	CY8CLED04-68LFXI	428-1953-ND
8	12	16KB	256B	48-QFN	428-1948-ND	19.25	11.85	9.63	CY8CLED08-48LFXI	
8	12	16KB	256B	48-SSOP	428-1949-5-ND	19.25	11.85	9.63	CY8CLED08-48PVXI	
16	12	32KB	2KB	28-SSOP	428-1950-5-ND	38.75	23.85	19.38	CY8CLED16-28PVXI	
16	12	32KB	2KB	48-QFN	428-1951-ND	38.75	23.85	19.38	CY8CLED16-48LFXI	
16	12	32KB	2KB	48-SSOP	428-1952-5-ND	38.75	23.85	19.38	CY8CLED16-48PVXI	

More Product Available Online: [www.digikey.com](http://www.digikey.com)

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