



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 I²C USB and CapSense Technology communications. Operating Voltage from 2.4V – 5.25V Temperature Range: -40°C – 85°C

C

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 ² C	28	2.4 – 5.25	32-QFN	428-1914-ND	4.09	2.20	1.77	CY8C20434-12LXKI								
4	4	4K	256	I ² C	6	2.4 – 5.25	8-SOIC	428-1682-ND	1.78	1.09	.89	CY8C21123-24SXI								
								428-1683-ND	2.08	1.28	1.04	CY8C21223-24SXI								
								20-SSOP	2.13	1.31	1.07	CY8C21323-24PVXI								
								24-QFN	2.38	1.46	1.19	CY8C21323-24LFXI								
								16-SOIC	2.82	2.20	1.77	CY8C21234-24SXI								
		20-SSOP	3.04	2.35	1.90	CY8C21334-24PVXI														
		32-QFN	3.26	2.50	2.04	CY8C21434-24LFXI														
		32-QFN	3.67	2.94	2.29	CY8C21434-24LTXI														
		28-SSOP	3.28	2.55	1.97	CY8C21534-24PVXI														
		32-QFN	3.54	2.75	2.22	CY8C21634-24LFXI														
6	4	4K	256	I ² C	6	2.4 – 5.25	8-DIP	428-1602-ND	2.95	1.77	1.48	CY8C24123A-24PXI								
								428-1603-1-ND†	2.73	1.64	1.37	CY8C24123A-24SXIT								
								428-1603-2-ND‡	3270.00/2,500			CY8C24123A-24SXIT								
								20-DIP	3.68	2.21	1.84	CY8C24223A-24PXI								
								20-SSOP	3.35	2.01	1.68	CY8C24223A-24PVXI								
								20-SOIC	3.65	2.19	1.83	CY8C24223A-24SXI								
								28-SSOP	3.85	2.31	1.93	CY8C24223A-24PVXI								
								28-SOIC	3.85	2.31	1.93	CY8C24223A-24SXI								
								32-QFN	3.32	2.55	2.08	CY8C24223A-24LFXI								
								6	4	16K	1K	I ² C, USB	50	3 – 5.25	56-QFN	428-1651-ND	5.50	4.28	3.44	CY8C24794-24LFXI
6	2	16K	1K	I ² C, USB	49	3 – 5.25	56-QFN	428-1917-ND	7.15	4.28	3.44	CY8C24894-24LFXI								
								100-VFBGA	8.88	5.48	4.44	CY8C24894-24BVXI								
6	2	16K	1K	I ² C, USB	56	3 – 5.25	68-QFN	428-1915-ND	8.88	5.48	4.44	CY8C24894-24LFXI								
								428-1916-ND	8.88	5.48	4.44	CY8C24894-24LFXI								
12	8	8K	256	—	16	3 – 5.25	20-SSOP	428-1640-ND	5.95	4.12	3.69	CY8C26233-24PVXI								
								28-SSOP	6.15	4.26	3.82	CY8C26443-24PVXI								
		16K	256	—	24	3 – 5.25	28-SOIC	428-1644-ND	6.18	4.28	3.83	CY8C26443-24SXI								
								8-DIP	5.00	3.00	2.50	CY8C27143-24PXI								
12	8	16K	256	I ² C	6	3 – 5.25	20-SSOP	428-1593-ND	5.40	3.24	2.70	CY8C27243-24PVXI								
								20-SOIC	5.40	3.24	2.70	CY8C27243-24SXI								
								28-DIP	5.90	3.54	2.95	CY8C27443-24PXI								
								28-SSOP	5.68	3.41	2.84	CY8C27443-24PVXI								
								28-SOIC	5.68	3.41	2.84	CY8C27443-24SXI								
								48-SSOP	6.03	3.62	3.02	CY8C27643-24PVXI								
								48-QFN	6.98	4.19	3.49	CY8C27643-24LFXI								
								12	16	32K	2K	I ² C	24	3 – 5.25	28-DIP	428-1586-ND	8.78	5.27	4.39	CY8C29466-24PXI
																28-SSOP	7.65	4.80	3.83	CY8C29466-24PVXI
																28-SOIC	7.65	4.59	3.83	CY8C29466-24SXI
44-TQFP	8.53	5.12	4.27	CY8C29566-24AXI																
28-SSOP	8.03	4.82	4.02	CY8C29666-24PVXI																
48-QFN	9.15	5.49	4.58	CY8C29666-24LFXI																
100-TQFP	9.78	5.87	4.89	CY8C29666-24AXI																
428-1592-ND																				

† Cut Tape ‡ Tape and Reel

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 I²C 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 ² C	10	2.4 – 5.25	16-QFN	428-2046-ND	2.18	1.74	1.31	CY8C20110-LDX2I
								428-2047-5-ND	2.00	1.61	1.25	CY8C20110-SX2I
								16-QFN	1.69	1.35	1.05	CY8C20140-LDX2I
								16-SOIC	1.71	1.37	1.07	CY8C20140-SX2I
								8-SOIC	1.67	1.34	1.04	CY8C20142-SX2I
								16-QFN	1.78	1.43	1.11	CY8C20160-LDX2I
								16-SOIC	1.80	1.44	1.12	CY8C20160-SX2I
								16-QFN	1.87	1.50	1.17	CY8C20180-LDX2I
								16-SOIC	1.89	1.52	1.18	CY8C20180-SX2I
								16-QFN	2.07	1.66	1.29	CY8C201A0-LDX2I
								16-SOIC	2.12	1.70	1.32	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	3.15	2.52	1.96	CY8C9520A-24PVXI
11KB EEPROM	48		48-SSOP	428-2016-5-ND	5.63	4.50	3.50	CY8C9540A-24PVXI
27KB EEPROM	100		100-TQFP	428-2017-ND	5.29	4.23	3.29	CY8C9560A-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.	Evaluation 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	16.25	10.00	8.13	CY8CLED08-48LFXI	
8	12	16KB	256B	48-SSOP	428-1949-5-ND	16.25	10.00	8.13	CY8CLED08-48PVXI	
16	12	32KB	2KB	28-SSOP	428-1950-5-ND	18.50	11.40	9.25	CY8CLED16-28PVXI	
16	12	32KB	2KB	48-QFN	428-1951-ND	19.38	11.95	9.69	CY8CLED16-48LFXI	
16	12	32KB	2KB	48-SSOP	428-1952-5-ND	19.38	11.95	9.69	CY8CLED16-48PVXI	

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

More Product Available Online: www.digikey.com