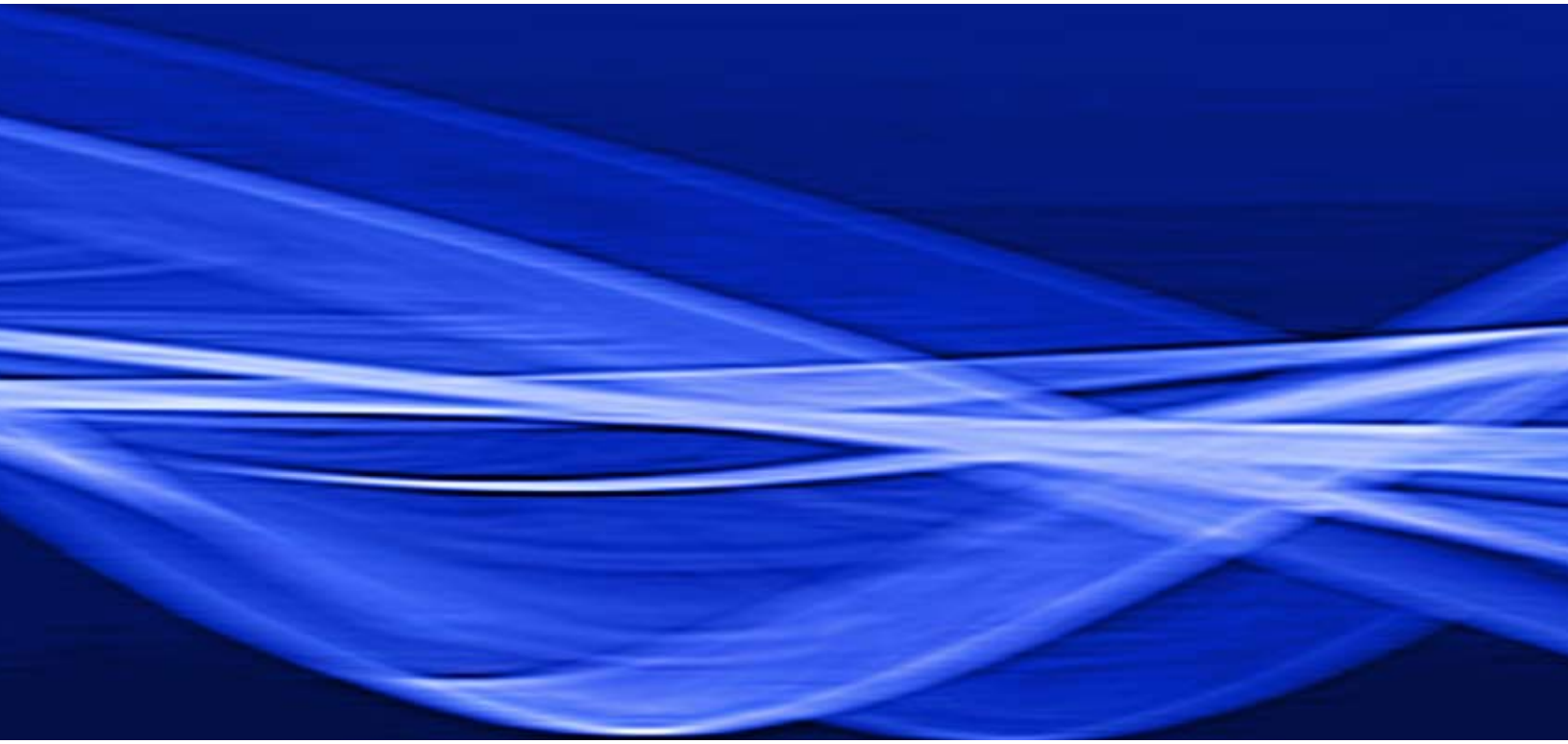
CYPRESS PRODUCT SELECTOR GUIDE
LIGHTING AND POWER CONTROL

SEPTEMBER 2009



AUTOMOTIVE • CapSense™ CAPACITIVE TOUCH SENSING • CLOCKS AND BUFFERS • LIGHTING AND POWER CONTROL • MEMORIES • OPTICAL AND IMAGE SENSING • PHYSICAL LAYER DEVICE • PSoC® PROGRAMMABLE SYSTEM-ON-CHIP • TrueTouch™ TOUCH SCREEN SOLUTIONS • USB SOLUTIONS • WEST BRIDGE® PERIPHERAL CONTROLLERS • WIRELESS/RF

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LIGHTING AND POWER CONTROL

POWERPSoC

PowerPSoC is the first device to combine the power of an embedded controller with integrated high-power peripheral functionality. This includes four internal 32V, 1A rated low-side n-channel MOSFETs, four 32V, 6 MHz rated current sense amplifiers with adjustable gain settings, four 2 MHz hysteretic controllers that can be configured as either buck, boost, or buck-boost, and a 32V input voltage regulator.

Due to the flexibility of working with the already integrated power of PSoC®, PowerPSoC offers additional functionality including Cypress's CapSense™, and additional digital (PWMs, timers, counters), analog (ADCs, PGAs), and communication (DMX512, DALI, SPI, RS-232) options.

The ability to reconfigure power with this level of integration can simplify hardware design, lower testing time, and decrease bill-of-materials costs.

Key Applications: LED ballasts, general illumination, architectural lighting, stage lighting, automotive lighting, relay/solenoid drive, fan control

PowerPSoC

Part Number	Description	Modulator Capability	# of FETs	Max Output Current per FET (A)	Max Output Voltage (V)	Input Voltage (V)	Flash (KB)	Package
CY8CLED01D01-56LTXI	One Channel with internal FET	1x16-bit	1	1	32	32	16	56 QFN
CY8CLED02D01-56LTXI	Two Channels with internal FETs	2x16-bit	2	1	32	32	16	56 QFN
CY8CLED03D01-56LTXI	Three Channel with internal FETs	3x16-bit	3	1	32	32	16	56 QFN
CY8CLED03D02-56LTXI	Three Channel with internal FETs	3x16-bit	3	0.5	32	32	16	56 QFN
CY8CLED03G01-56LTXI	Three Channel with no internal FETs	3x16-bit	—	—	—	32	16	56 QFN
CY8CLED04D01-56LTXI	Four Channel with internal FETs	4x16-bit	4	1	32	32	16	56 QFN
CY8CLED04D02-56LTXI	Four Channel with internal FETs	4x16-bit	4	0.5	32	32	16	56 QFN
CY8CLED04G01-56LTXI	Four Channel with no internal FETs	4x16-bit	—	—	—	32	16	56 QFN

WORLD'S FIRST EMBEDDED POWER CONTROLLER

PowerPSoC Features:

- Four low-side 32V n-channel MOSFETs
- Four 32V, 6 MHz current sense amplifiers
- Four 2 MHz hysteretic controllers
- Six fast-response (100 ns) voltage comparators
- Fourteen 8-bit reference DACs
- 32V input voltage regulator
- Adjustable gain on current sense amplifiers
- Buck, boost, or buck-boost options on hysteretic controllers
- Adjustable hysteresis levels

Learn more at www.cypress.com/go/powerpsoc

CONTROL COMMUNICATIONS

Cypress offers a line of high-performance, low-cost communications and control processors that are compatible with legacy designs and provide double the maximum clock rate of earlier products and expanded internal memory configuration options.

Neuron® chips are sophisticated, Very Large-Scale Integration (VLSI) devices that make it possible to implement low-cost control networking applications.

Control networks using Neuron chips are used in a wide variety of applications in building automation, industrial control, and transportation systems.

Key applications: Heating, ventilating, and air-conditioning (HVAC), lighting control, access control, fire and security monitoring, machine control, food industry applications, electrical metering, utility automation, home automation, domestic appliances, scientific and medical instrumentation, semiconductor processing, fuel monitoring and distribution, aircraft flight control, train braking and signage, and entertainment applications

Neuron Chip

Part Number	Status	EEPROM	Ext Memory Bus	Max Clock	Package
CY7C53120E2	NRND	2 KB	No	10 MHz	44 TQFP
CY7C53120E4	Active	4 KB	No	40 MHz	32 SOIC
CY7C53150	Active	0.5 KB	Yes	20 MHz	64 TQFP

NRND = Not Recommended for New Designs

HIGH-BRIGHTNESS LED SOLUTIONS

Cypress's EZ-Color™ devices combine the power and flexibility of Cypress's PSoC programmable system-on-chip with Cypress's PrISM™ (Precise Illumination Signal Modulation) drive technology, providing lighting designers with a 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, giving lighting designers the flexibility to choose the LED array size and color quality. These features, along with Cypress's best-in-class quality and design support, make EZ-Color™ the ideal choice for intelligent HB LED control applications.

Key Applications: LED ballasts, architectural lighting, general illumination lighting, stage lighting, and automotive lighting

CY8CLED16—16 CHANNEL HIGH BRIGHTNESS LED CONTROLLER

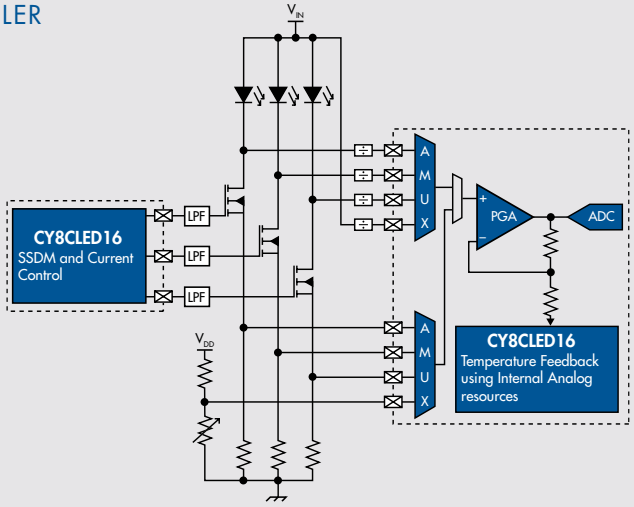
Platform Solution

- Configurable dimmers support up to 16 LED channels
- Dimmers independently programmable from 8 to 32 bits of resolution
- PrISM method eliminates low frequency blinking inherent in typical PWM solution
- Spread spectrum signal increases radiated EMI immunity

Easy to Use

- Modular development tools enable fast time to market

Learn more at www.cypress.com/go/LED16



EZ-Color™ HB LED Controllers

Part Number	Status	# I/O Pins	Analog PSoC Blocks	Digital PSoC Blocks	Memory Size	Operating Frequency	Package	Pins/Ball	RAM	Temperature Range	Vcc (V)
2 Channel											
CY8CLED02	Active	6/12	4:2-CT 2-SC	2-Basic 2-Comms	4 KB Flash	930 kHz to 24 MHz	SOIC	8/16	256 bytes	-40C to +85C	2.4V to 5.25V
4 Channel											
CY8CLED04	Active	56	6:2-CT 4-SC	2-Basic 2-Comms	16 KB Flash	930 kHz to 24 MHz	QFN	68	1K	-40C to +85C	3.0V to 5.25V
8 Channel											
CY8CLED08	Active	44	12:4-CT 8-SC	4-Basic 4-Comms	16 KB Flash	930 kHz to 24 MHz	QFN	48	256 bytes	-40C to +85C	3.0V to 5.25V
16 Channel											
CY8CLED16	Active	24/44	12:4-CT 8-SC	8-Basic 8-Comms	32 KB Flash	930 kHz to 24 MHz	SSOP/QFN	28/48	2K	-40C to +85C	3.0V to 5.25V

CONTACT US

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ABOUT CYPRESS

Cypress delivers high-performance, mixed-signal, programmable solutions that provide customers with rapid time-to-market and exceptional system value. Cypress offerings include the PSoC Programmable System-on-Chip, USB controllers, general-purpose programmable clocks, and memories. Cypress also offers wired and wireless connectivity solutions ranging from its CyFi Low-Power RF solution, to West Bridge and EZ-USB FX2LP controllers that enhance connectivity and performance in multimedia handsets. Cypress serves numerous markets, including consumer, computation, data communications, automotive and industrial. Cypress trades on the NYSE under the ticker symbol CY. Visit Cypress online at **www.cypress.com**.

Job line: 0909/JONA/FLINE | Part number: 2-0909Q3PSG

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