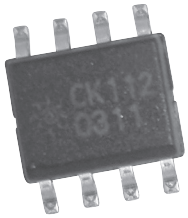
COLOR KINETICS

PHILIPS

CHROMASIC 1



Actual Size

Color Kinetics® Chromasic® 1 is a custom-designed microchip that integrates power, communications, and control to enable next-generation digital lighting systems and networks. Chromasic combines digital LED control and communication technology in a tiny package, enabling highly controllable lamp nodes to generate 64 billion color combinations.

Chromasic technology can be used in numerous system configurations and creates whole new possibilities for small-scale installations comprising a few light nodes to large-scale installations with hundreds of thousands of individual light nodes–each equipped with the intelligence to be automatically addressed and controlled.

The fully-integrated, three channel, 12-bit LED driver encompasses all components necessary to receive a serial command bitstream, decode and extract PWM values, and re-create a new serial bitstream. Also included are a high accuracy bandgap reference, external programming circuit, and all necessary circuitry to drive three independent LED channels. With Chromasic, the only additional components required to create a controlled RGB light node are: LEDs, a single resistor for current programming, and a single bypass capacitor.

Chromasic advances the state of the art in LED illumination with the following benefits:

- **Compact size**: Reduces the size of a single, controllable point of colored light by reducing the number of necessary components and the physical size of an LED node. In its raw form, the Chromasic chip is comparable in size to the head of a pin.
- **Cost effectiveness**: Integrates numerous functions into a single low-cost chip, bringing down the unit cost.
- **Reliability**: Fewer components that can fail.
- **64 Billion Colors**: Enables a high degree of control flexibility, including lighting networks that range from hundreds of thousands of nodes to just a few–and ranging from simple monochromatic intensity to a vast spectrum of 64 billion colors.
- **Chained Architecture**: Eliminates the need to manually address individual nodes by placing the addressing mechanism within the chip itself.
- **Self-clocking**: Requires just three wires to operate, accommodating a wide range of data rates, and avoids the use of additional parts such as oscillators and clocks that are typically used in digital circuitry.

CHROMASIC 1 SPECIFICATIONS

COLOR RANGE	64 billion additive RGB colors; continuously variable intensity output range
CONTROLLER	Fully integrated RGB LED controller
ACCURACY	+/- 5%
RESOLUTION	12 bit PWM
VOLTAGE RANGE	5V to 12V
LED DRIVER DROPOUT VOLTAGE	0.55V, typical at 125˚C
DATA RATE RANGE	10Kbps to 500Kbps
PACKAGES	Wafer, Die, 8-pin SOIC, 8-pin Exposed Pad SOIC, and 8-pin Exposed Pad TSSOP

CHROMASIC®
BY COLOR KINETICS

Chromasic 1 ITEM# 118-000085-00

BRO115 Rev 01

Specifications subject to change without notice.

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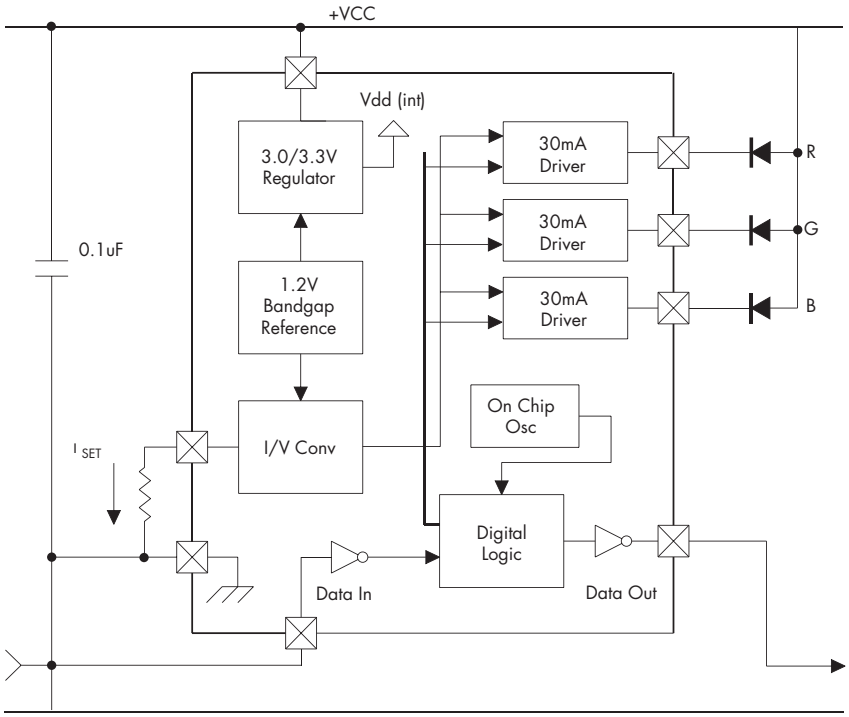
BLOCK DIAGRAM



APPLICATIONS DIAGRAM