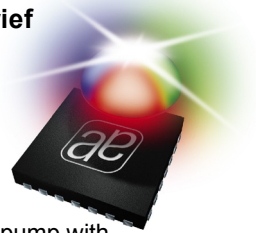


# AS3665

## 9 Channel Advanced Command Driven RGB/White LED Driver

ProductBrief



### 1 General Description

The AS3665 is a capacitive low noise charge pump with 9 current sources. The charge pump automatically switches between 1:1 and 1:1.5 modes. The connected current sources have a very low voltage compliance to improve efficiency of the whole system. Three current sources have the possibility to operate either from VBAT or VCP (especially useful for red LEDs).

The internal control is done by command based pattern generators implemented by three sequencers. These commands are optimized for lighting applications (e.g. ramp up brightness logarithmically). It includes high level commands like conditionals jumps and variables. Any of the three sequencers can be dynamically mapped to any of the 9 PWM generators for the LEDs.

The AS3665 supports an audio input and sophisticated light patterns can be controlled by internal digital filters.

The AS3665 is controlled by I<sup>2</sup>C mode. Synchronization over several AS3665 is possible by the TRIG pin.

The AS3665 is available in a space-saving WL-CSP-25 (2.5x2.5mm) 0.5mm pitch and operates over the -30°C to +85°C temperature range.

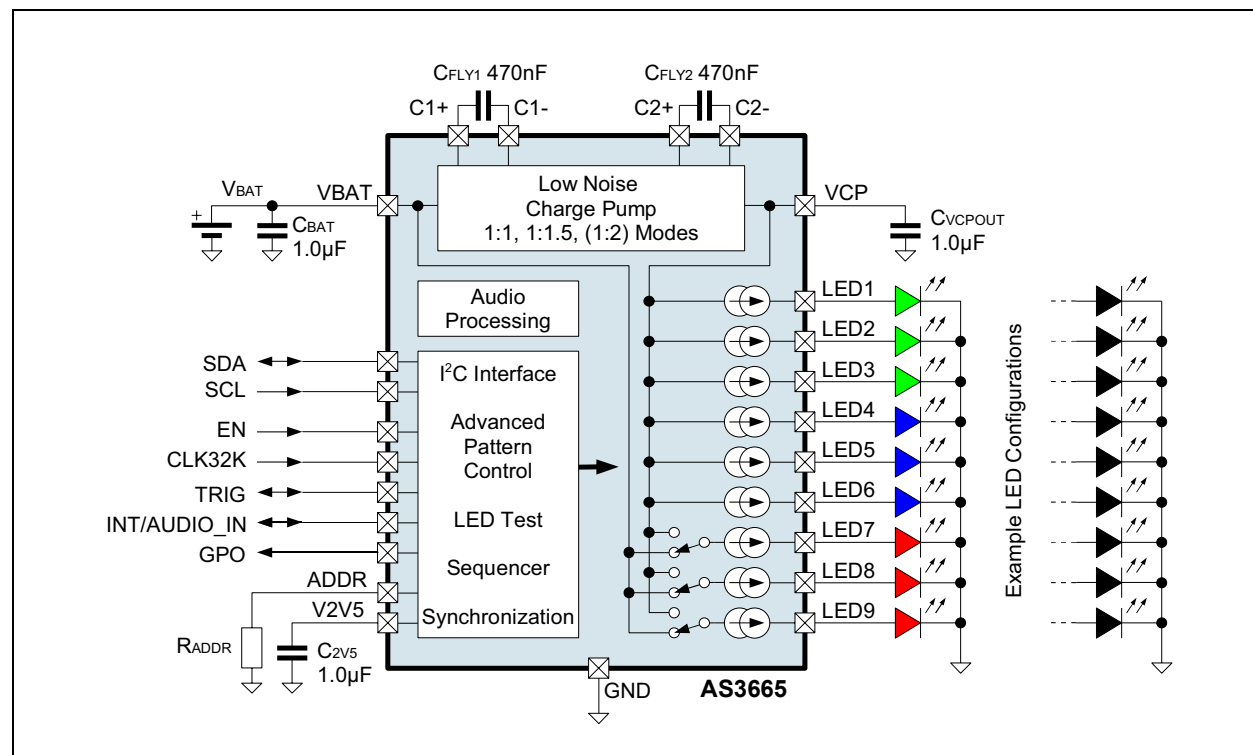
### 2 Key Features

- High efficiency capacitive 150mA charge pump with 1:1, 1:1.5 and 1:2 modes with automatic mode switching; 1:2 mode can be disabled
- 9 Channel High Side 20mA Current sources
  - Less than 50mV at 10mA dropout voltage
  - LED7,8,9 either powered by VBAT or VCP
- Advanced Command based Pattern Generator
  - 96 x 16 bits program memory
  - Dedicated lighting commands like logarithmic fade
  - Programming control and conditional jumps
- Audio Controlled Lighting with internal digital filters
- 3 Sequencers
  - Dynamically mapped to 9 PWM generators
  - Internal/External Synchronization
- 9 PWM generators (12 bit resolution)
  - Automatic RGB Color Correction by TAMB
- I<sup>2</sup>C interface with dedicated EN pin
- Available in WL-CSP-25 (2.5x2.5mm) 0.5mm pitch

### 3 Applications

RGB/White Fun or Event LED for mobile phones or portable devices; Lighting Management Unit

Figure 1. Typical Operating Circuit



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