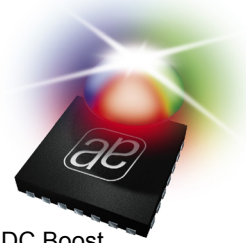


# AS3645

## 1000/720mA Ultra Small High efficient single/dual LED Flash Driver with Safety Features



### 1 General Description

The AS3645 is an inductive high efficient DCDC step up converter with two current sources. The DCDC step up converter operates at a fixed frequency of 2MHz and includes soft startup to allow easy integration into noise sensitive RF systems. The two current sources (one for driving one or two flash LEDs and one for the indicator LED) can operate in flash / torch / assist (=video) light / indicator modes. If a two flash LEDs configuration is used, the LEDs are connected in series. Therefore identical current is guaranteed.

The AS3645 includes flash timeout, overvoltage, over-temperature, undervoltage and LED short circuit protection functions.

The AS3645 can be controlled either with parallel interface mode to allow simple integration. Alternatively it can be controlled by I<sup>2</sup>C mode to allow a more sophisticated control of all settings like currents and timings. The interface is selected by a dedicated pin (I2C/EN).

The AS3645 is available in a space-saving WL-CSP package measuring only 2x1.6mm and operates over the -30°C to +85°C temperature range.

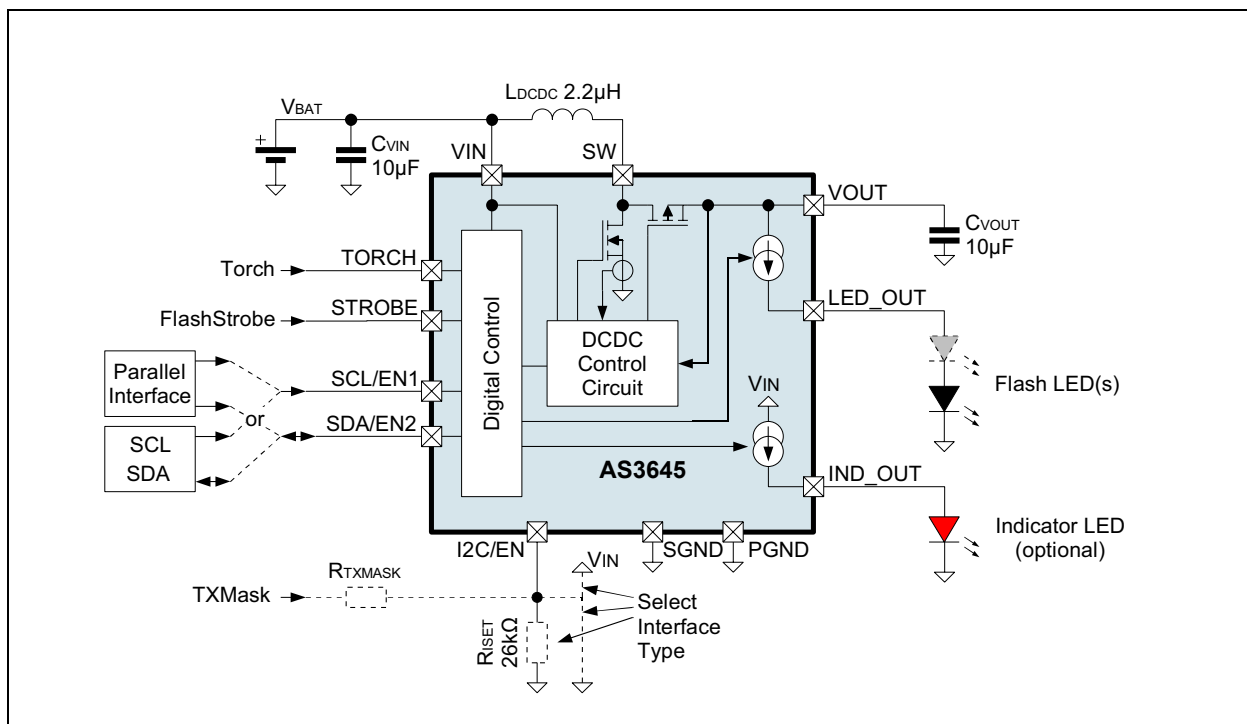
### 2 Key Features

- High efficiency 2MHz fixed frequency DCDC Boost converter with soft start allows small coils
  - Stable even in coil current limit
- High Flash LED(s) current (720mA for single flash LED, 1000mA (2x500mA) for dual flash LED)
- Separate Indicator LED output
- Flash LED(s) cathode connected to ground: Improved thermal performance (ground = heat sink) Simplified PCB layout
- Flash, Torch, Assist and Indicator Mode
- Protection functions:
  - Automatic Flash Timeout timer to protect the LED(s)
  - Overvoltage and undervoltage Protection
  - Overtemperature Protection
  - LED(s) short circuit protection
- Dual Interface selectable by pin (parallel interface mode and I<sup>2</sup>C mode)
- Available in tiny WL-CSP Packages
  - 3x4 balls 0.5mm pitch, 2x1.6mm package size

### 3 Applications

Flash/Torch for mobile phones, digital cameras and PDA

Figure 1. Typical Operating Circuit



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