

# AS3685A/AS3685B

## Ultra Small High Efficiency 700mA Charge Pump for White LED Flash

### 1 General Description

The AS3685 is low noise high efficiency capacitive charge pump with 1:1, 1:1.5 and 1:2 operating modes in a small 3x3mm DFN10 or a tiny 2x1.5mm WL-CSP (Wafer Level Chip Scale Package) package. It can drive one flash led at up to 700mA current. It supports flash/torch and indicator mode for the flash led.

Additionally the AS3685 limits the flash time automatically to protect the flash LED.

### 2 Key Features

- High Efficiency capacitive charge pump with 1:1, 1:1.5 and 1:2 modes
  - 1:2 Mode can be disabled (factory programmable)
- Up to 700mA Led Current
- Automatic Charge Pump Mode switching (Up)
- LED cathode disconnect in Shutdown

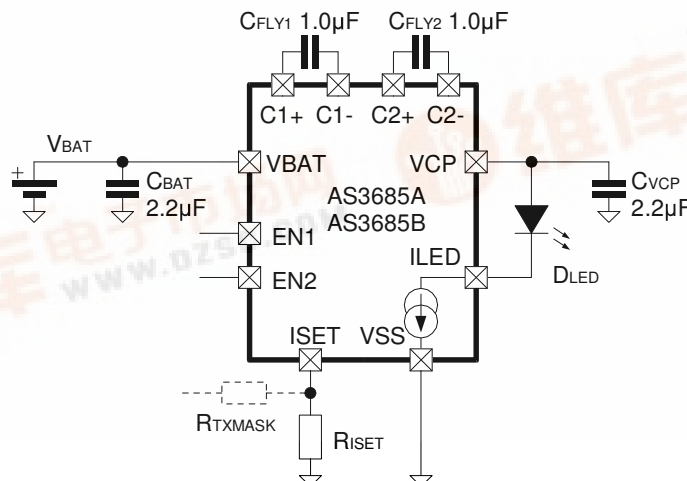
- Overtemperature Protection
- Automatic 800ms Flash Timeout to protect the flash LED (time factory programmable)
- Two Device Variants:
  - AS3685A: Direct control to select three currents
  - AS3685B: Single Pin Interface or Two Pin Interface with Strobe Input; 17 different currents can be selected
- Package
  - DFN10 3x3mm (10 pins + exposed pad)
  - WL-CSP (Wafer Level Chip Scale Package) 3x4 balls 0.5mm pitch (2x1.5mm)

### 3 Application

- Flash / Torch for Mobile Phones, Digital Cameras and PDA

### 4 Application Diagram

Figure 1 – Application Diagram of AS3685A/AS3685B



## Copyright

Copyright © 1997-2006, austriamicrosystems AG, Schloss Premstaetten, 8141 Unterpremstaetten, Austria-Europe. Trademarks Registered ®. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

All products and companies mentioned are trademarks of their respective companies.

## Disclaimer

Devices sold by austriamicrosystems AG are covered by the warranty and patent identification provisions appearing in its Term of Sale. austriamicrosystems AG makes no warranty, express, statutory, implied, or by description regarding the information set forth herein or regarding the freedom of the described devices from patent infringement. austriamicrosystems AG reserves the right to change specifications and prices at any time and without notice. Therefore, prior to designing this product into a system, it is necessary to check with austriamicrosystems AG for current information. This product is intended for use in normal commercial applications. Applications requiring extended temperature range, unusual environmental requirements, or high reliability applications, such as military, medical life-support or life-sustaining equipment are specifically not recommended without additional processing by austriamicrosystems AG for each application.

The information furnished here by austriamicrosystems AG is believed to be correct and accurate. However, austriamicrosystems AG shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interruption of business or indirect, special, incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data herein. No obligation or liability to recipient or any third party shall arise or flow out of austriamicrosystems AG rendering of technical or other services.

## Contact Information

Headquarters:

austriamicrosystems AG  
Business Unit Communications  
A 8141 Schloss Premstätten, Austria  
T. +43 (0) 3136 500 0  
F. +43 (0) 3136 5692  
info@austriamicrosystems.com

For Sales Offices, Distributors and Representatives, please visit:

[www.austriamicrosystems.com](http://www.austriamicrosystems.com)

***austriamicrosystems*** – a leap ahead