

## GENERAL DESCRIPTION

OB3635B is an offline LED lighting controller with high power factor, low THD and high constant current (CC) precision. It can achieve low system cost for an isolated lighting application by primary side control in a single stage converter. It significantly simplifies the LED lighting system design by eliminating auxiliary winding.

The proprietary CC control scheme is used and the system can achieve high power factor with constant on-time control scheme. Quasi-resonant (QR) operation and clamping frequency greatly improves the system efficiency. The advanced start-up technology is used to meet the start-up time requirement (<0.5s). The constant output current is compensated for tolerance of transformer inductance variation. And the line compensation and load compensation are built in OB3635B for high precisely constant output current control.

OB3635B offers comprehensive protection coverage with auto-recovery features including LED open loop protection, LED short circuit protection, cycle-by-cycle current limiting, built-in leading edge blanking, VDD under voltage lockout (UVLO), etc.

OB3635B is offered in SOT23-6 package.

## FEATURES

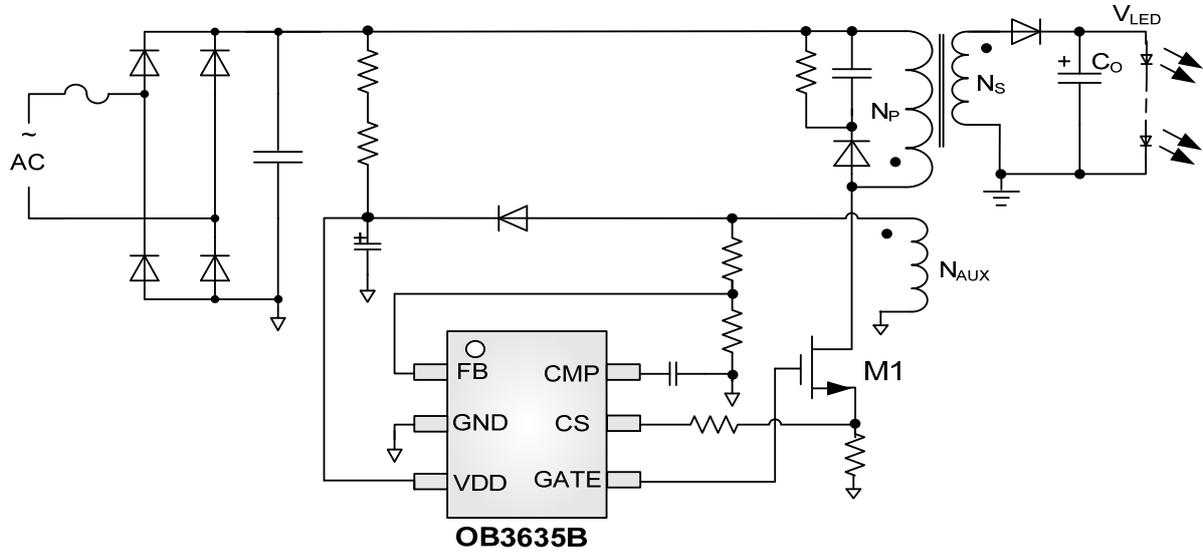
- High PF (>0.9)
- Low THD (<10%)
- High precision constant current regulation at universal AC input
- Fast start-up (<0.5s)
- Primary-side sensing and regulation without auxiliary winding
- Low system cost and high efficiency
- Quasi-resonant operation
- Programmable CC regulation
- Built-in primary winding inductance compensation
- Built-in line compensation
- Built-in load compensation
- LED short circuit protection
- LED open loop protection
- Cycle-by-cycle current limiting
- Built-in leading edge blanking (LEB)
- VDD under voltage lockout with hysteresis
- VDD over voltage protection
- Over temperature protection (OTP)
- Thermal fold-back control

## APPLICATIONS

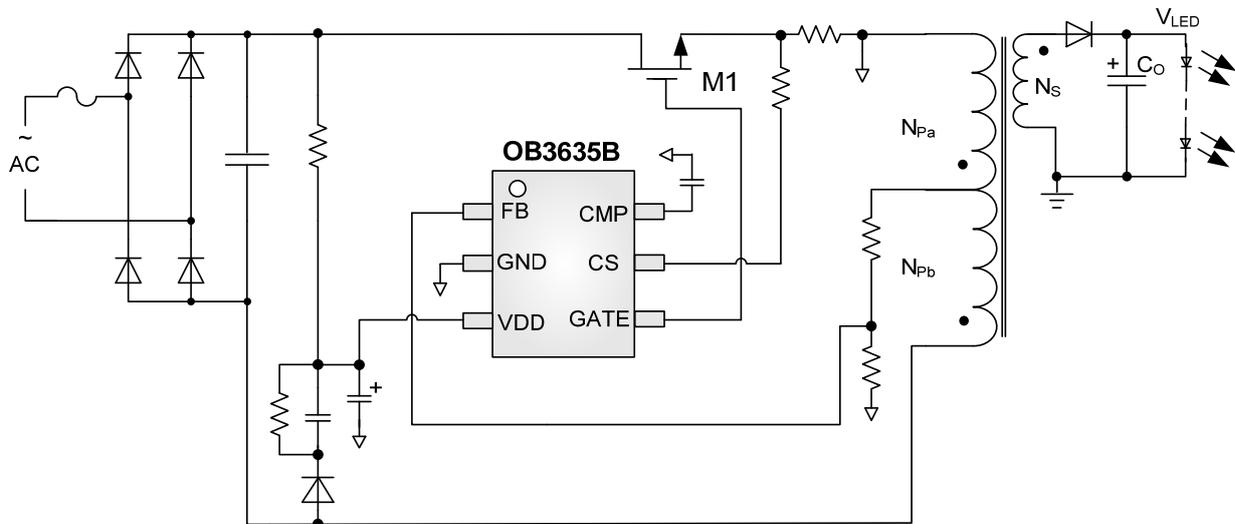
- LED lighting

**TYPICAL APPLICATION**

**Application Schematic 1:**



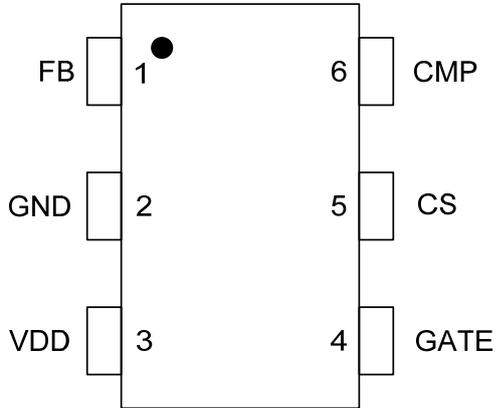
**Application Schematic 2:**



### GENERAL INFORMATION

#### Pin Configuration

The pin map is shown as below for SOT23-6.



#### Ordering Information

Part Number	Description
OB3635BMP	SOT23-6, Pb-free, T&R

**Note:** All Devices are offered in Pb-free Package if not otherwise noted.

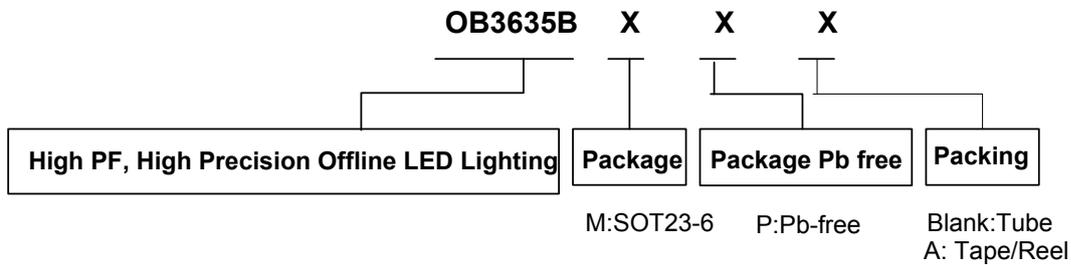
#### Package Dissipation Rating

Package	R $\theta$ JA (°C/W)
SOT23-6	200

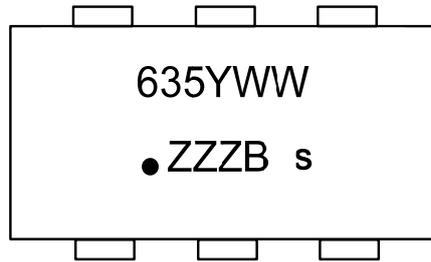
#### Absolute Maximum Ratings

Parameter	Value
VDD Voltage	-0.3 to 40V
Gate Voltage	-0.3 to 40V
CS Input Voltage	-0.3 to 7V
FB Input Voltage	-0.3 to 7V
COMP Voltage	-0.3 to 7V
Min/Max Operating Junction Temperature T <sub>J</sub>	-40 to 150 °C
Min/Max Storage Temperature T <sub>stg</sub>	-55 to 150 °C
Lead Temperature (Soldering, 10secs)	260 °C

**Note:** Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute maximum-rated conditions for extended periods may affect device reliability.



### Marking Information



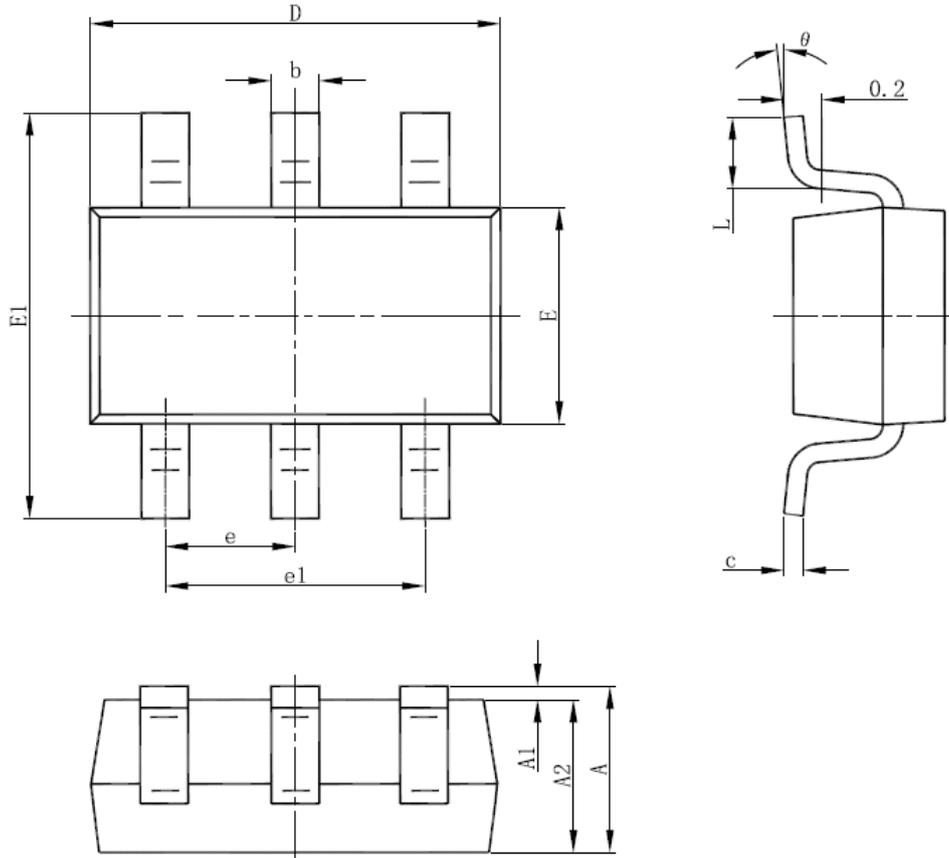
Y: Year Code  
 WW: Week Code(01-52)  
 ZZZ: Lot Code  
 B: Character Code  
 s: Internal Code(Optional)

### TERMINAL ASSIGNMENTS

Pin Num	Pin Name	I/O	Description
1	FB	I	The voltage feedback terminal.
2	GND	P	Power Ground.
3	VDD	P	Power supply Input.
4	GATE	O	Gate driver output for power MOSFET.
5	CS	I	Current sensing terminal.
6	CMP	O	Loop compensation pin. A capacitor is connected between CMP and GND.

**PACKAGE MECHANICAL DATA**

**SOT-23-6L PACKAGE OUTLINE DIMENSIONS**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.000	1.450	0.039	0.057
A1	0.000	0.150	0.000	0.006
A2	0.900	1.300	0.035	0.051
b	0.300	0.500	0.012	0.020
c	0.080	0.220	0.003	0.009
D	2.800	3.020	0.110	0.119
E	1.500	1.726	0.059	0.068
E1	2.600	3.000	0.102	0.118
e	0.950 (BSC)		0.037 (BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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