

# TSM1052: CC/CV controller for chargers and adapters

Very low power and extended  $V_{CC}$  make it suitable for applications with an output voltage range from 1.25V to 15V



STMicroelectronics new constant current and constant voltage TSM1052 controller represents the ideal solution for SMPS space constrained adapters and battery chargers.

The wide operating range of  $V_{CC}$  (1.7V - 18V) allows a flexible and robust design.

Thanks to its extremely low power consumption, with a typical quiescent current of just 150 $\mu$ A, the TSM1052 is suitable for applications which must comply with energy saving regulations.

## Key features

- Wide operating range of  $V_{CC}$  (1.7V - 18V)
- Very low quiescent current (typ. 150 $\mu$ A)
- Low external component count
- Easy frequency compensation
- Precision internal voltage reference
- Housed in SOT23-6L micropackage

## Main applications

All types of SMPS adapters and battery chargers for:

- Mobile and smart phones
- MP3 players
- Digital still cameras
- Game consoles
- PDAs
- Camcorders

The new TSM1052 is a secondary side controller for SMPS applications requiring a dual control loop to perform constant current and constant voltage regulation.

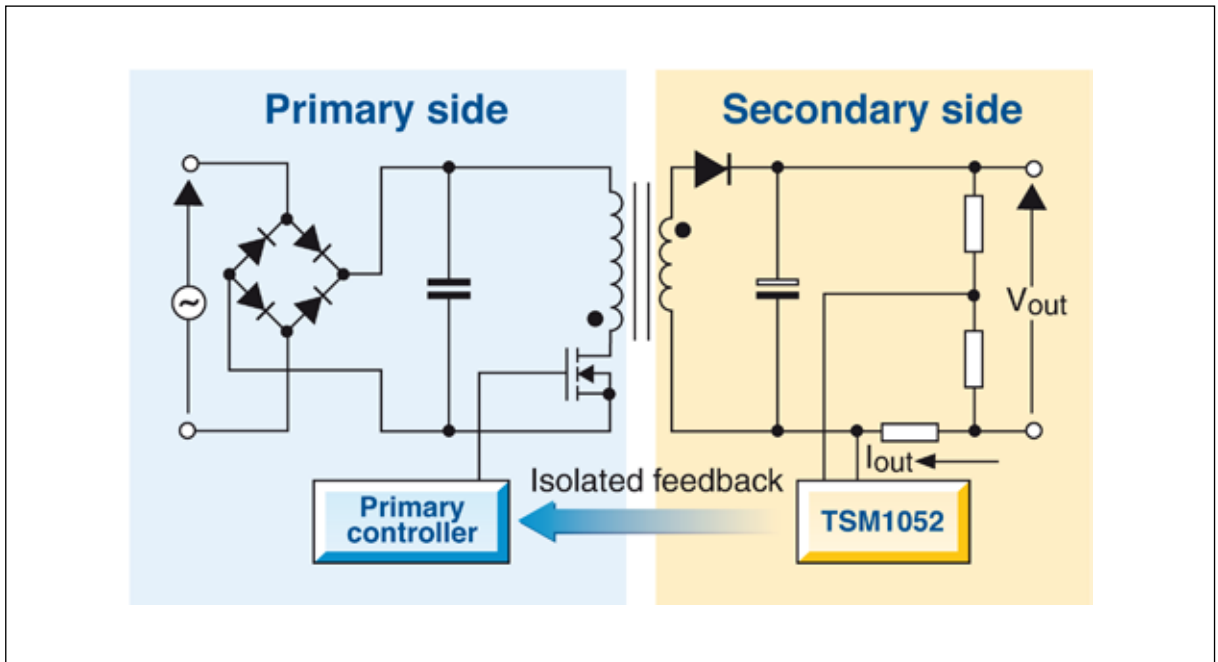
It integrates a precise voltage reference, two operational amplifiers and a low side current sensing circuit.

Its wide power supply operating range (1.7V - 18V) makes this device the leader in the market place. Thanks to the low input voltage the IC can be directly supplied by the SMPS output, allowing the application to manage output voltage as low as 1.7V, greatly reducing the

number of components required. The wide operating range of  $V_{CC}$ , up to 18V, allows design flexibility and increases the robustness to load transient, safe start-up and accidental feedback disconnections. Another advantage of this controller is its low power consumption. In fact, with a typical quiescent current of 150 $\mu$ A, the TSM1052 is suitable for all applications required to comply with energy saving regulations.

Housed in the SOT23-6L, one of the smallest packages available, it is ideal for space constrained applications such as battery chargers and adapters.

The device is pin-to-pin compatible with the TSM1051.



Block diagram of a typical application

## TSM1052 key features

| Part number | Operating voltage range [V] | Quiescent current (typical) [ $\mu$ A] | Package  |
|-------------|-----------------------------|--|----------|
| TSM1052     | 1.7 to 18                   | 150                                    | SOT23-6L |



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