DESCRIPTION

The MT9542LR is a high-PF, non-isolate, BUCK LED Driver IC with integrated rectifier bridge and ultra-fast recovery freewheeling diode. MT9542LR works in Quasi-Resonant Mode (QRM), which improves both of efficiency and EMI performance.

The system integrates the ultra-high voltage power supply circuit. The external VDD capacitor is not needed. The system realizes error integration through internal digital integrator, which eliminates COMP pin and COMP capacitor.

Various protections with self-recovery, such as input over voltage protection (OVP), cycle-by-cycle over current protection (OCP), over temperature protection, output short-circuit protection, etc. are embedded to improve reliability. The chip programs the output over voltage protection threshold through an external circuit connected to the ROVP pin (e.g. open circuit, GND or a resistor with different values).

The MT9542LR integrates rectifier bridge, freewheeling diode, feedback circuit and high voltage MOSFET, which further simplifies external circuit and saves the BOM cost.

APPLICATIONS

- LED bulb, Spotlight
- LED tube
- Other LED lighting applications

FEATURES

- Single-stage active power factor correction (PF > 0.70)
- Integrated rectifier bridge
- Internal ultra-fast recovery freewheeling diode
- Integrated ultra-high voltage power supply without external VDD capacitor and external power supply circuit
- Embedded digital integrator, no COMP capacitor needed
- Internal line voltage compensation
- Internal demagnetization sensing, no external feedback circuit needed
- High accurate LED current
- Good Line and Load Regulation
- Quasi-Resonant mode (QRM) operation
- Integrated Input OVP, when input voltage is higher than 375Vac, turns off the power switch, resumes at input voltage below 320Vac. Enhances anti-surge capability and improves system reliability
- Various protections and self-recovery
- Set different output OVP thresholds through ROVP pin
- Power on soft-start
- Available in ASOP7 packages

Typical Application Circuit