

## DESCRIPTION

MT9514XF is a high-PF, non-isolated, APFC, Buck IC for LED driver. It works in Quasi-Resonant Mode (QRM), which improves both of efficiency and EMI performance.

MT9514XF integrates the ultra-high voltage power supply circuit and external VDD capacitor is not needed. The system realizes error integration through internal digital integrator, which eliminates COMP pin and COMP capacitor. The chip can meet low THD and odd harmonic requirements through internal THD compensation circuit.

MT9514XF provides various protections with self-recovery, such as input over-voltage protection (OVP), cycle-by-cycle over-current protection (OCP), over-temperature regulation (OTR), output short-circuit protection, output open-circuit protection, etc., to improve reliability. The chip programs the output OVP threshold through an external circuit connection to the ROVP pin (e.g., open circuit, ground or a resistor with different resistance values).

MT9514XF integrates feedback circuit and high-voltage MOS, 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 > 0.90)
- Integrates ultra-high voltage power supply without external VDD capacitor and external power supply circuit
- Embedded with digital integrator, no COMP capacitor needed
- Integrates THD compensation circuit
- Integrates odd harmonic compensation circuit for high subharmonic distortion suppression
- Internal line voltage compensation
- Internal demagnetization sensing, no external feedback circuit needed
- High accurate LED current
- Output current foldback at low input voltage
- Good line and load regulation
- Operates in QRM
- Integrates input OVP, when input voltage is higher than 400Vac, turns off the power switch, resumes at input voltage below 320Vac. Enhances anti-surge capability and improves system reliability
- Set different output OVP thresholds through ROVP pin
- Various protections with self-recovery
- Power on soft-start
- Available in SOP7 and DIP7 packages

## TYPICAL APPLICATION CIRCUIT

