

## DESCRIPTION

The RS2332 integrates 600V ultra high voltage startup circuit reduces the total power consumption to provide a high efficiency solution for lighting applications and it is a single-power stage, isolated, primary-side-control offline LED lighting controller that achieves high power factor in a single SOP-8 package. The proprietary real-current control method can control the LED current accurately from the primary side information. It can significantly simplify the LED lighting system design by eliminating the secondary side feedback components and the opto-coupler.

The RS2332 integrates active power factor correction and works in quasi resonance mode in order to reduce the MOSFET switching losses. The multi-protection features of RS2332 greatly enhance the system reliability and safety. The RS2332 features over voltage protection, short circuit protection, cycle-by-cycle current limit, VCC UVLO and auto-restart over-temperature protection. The driver output voltage is clamped at maximal 18V to protect the external power MOSFET.

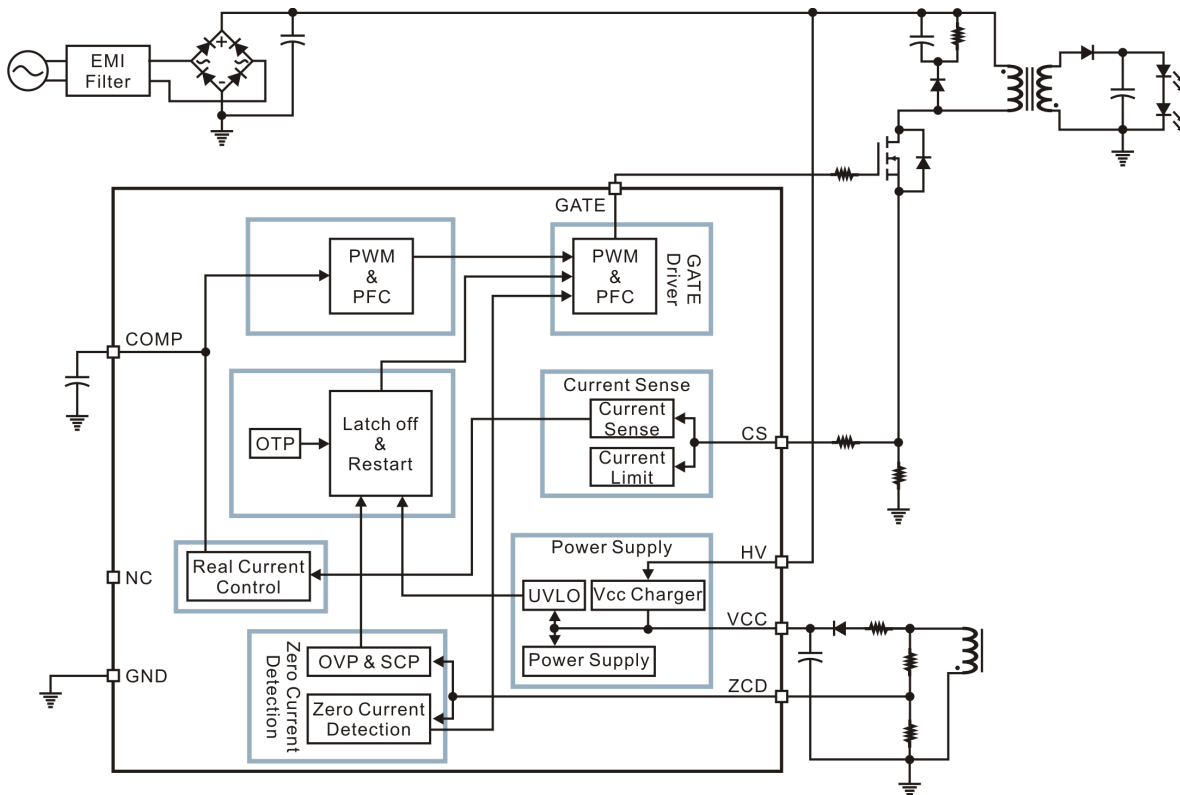
## FEATURES

- Very less components
- Build-in 600V start-up circuit
- Real current control without secondary feedback
- Accurate constant current output
- Active power factor correction (>0.9)
- Quasi resonance mode for high efficiency
- Under voltage lockout (UVLO)
- Programmable input AC voltage compensation
- Leading edge blanking on CS/ZCD pin
- Available in an SOP-8 package
- Protection features
  - Building in hysteresis OTP
  - VCC over voltage protection
  - Clamped Gate output voltage to maximal 18V
  - Cycle by cycle current limiting on CS
  - Secondary peak current protection on CS pin
  - Output short to GND protection
  - Output programmable over voltage protection

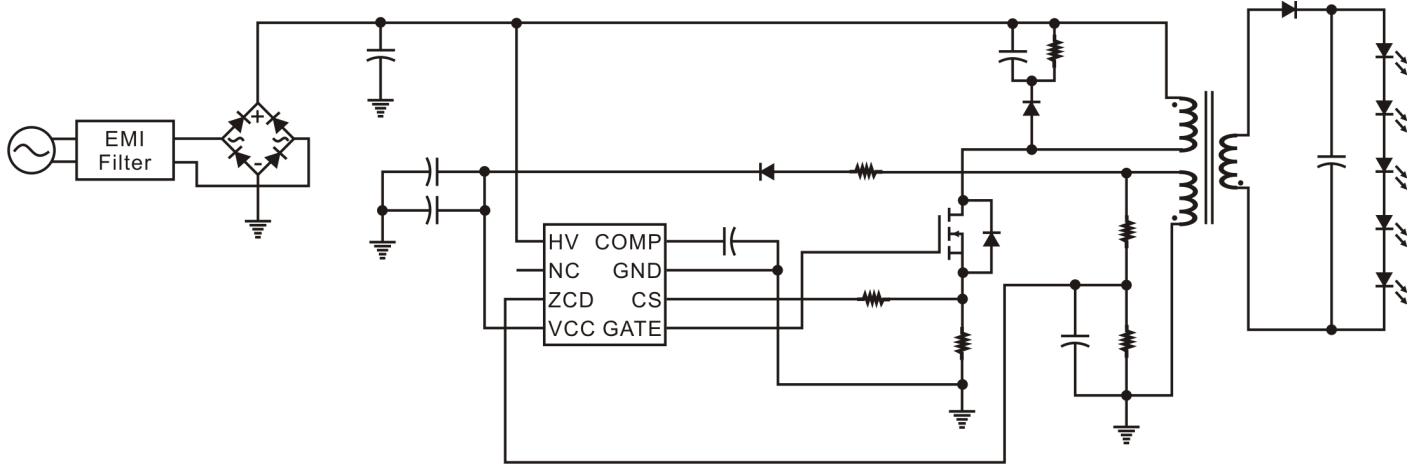
## APPLICATIONS

- Low Power AC/DC offline SMPS for:
  - Solid state lighting
  - Industrial and commercial lighting

## BLOCK DIAGRAM



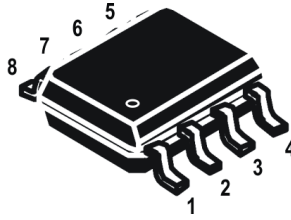
## APPLICATION CIRCUIT



## ORDER INFORMATION

Device	Device Code
RS2332 Y Z	<b>Y is package &amp; Pin Assignments designator:</b> S: SOP-8 <b>Z is Lead Free designator:</b> P: Commercial Standard, Lead (Pb) Free and Phosphorous (P) Free Package G: Green (Halogen Free with Commercial Standard)

## PIN CONFIGURATION



## PIN DESCRIPTION

Pin Name	Description	Pin No.
COMP	Loop Compensation pin. Connect a compensation network to stabilize the LED driver and achieve an accurate LED driver current.	1
GND	Reference GND of IC	2
CS	Current sense pin. The MOSFET current is sensed via a resistor. If the voltage in this pin is higher than the current limit threshold 1.0V after some blanking time in the turn-on interval, the gate signal will be turned off.	3
GATE	Gate drive output pin. The totem pole output stage is able to drive high power MOSFET with a peak current of 0.5A source capability and 0.8A sink capability. The high level voltage of this pin is clamped to 19V to avoid excessive gate drive voltage.	4
VCC	Power supply.	5
ZCD	Zero current detection pin. A negative going edge triggers the turn on signal of the external MOSFET. Connect this pin through a resistor divider from the auxiliary winding to GND. Over-voltage conditions is detected through ZCD. If ZCD voltage is higher than the over-voltage-protection (OVP) threshold after a blanking time 1 $\mu$ s, the over-voltage condition is detected.	6
NC	No connect	7
HV	High voltage startup switch instead of resistor	8

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