

## DESCRIPTION

The MT7838 is a single-stage buck average constant current controller. With MAXIC proprietary control technique, the system with MT7838 can achieve both high current accuracy and power factor correction. MT7838 works in critical conduction mode (CRM) to reduce switching losses.

The MT7838 can be powered up directly by the main-line voltage without the need of start-up resistors, achieving an ultra fast start-up time of less than 100ms.

The MT7838 provides various protections, such as over current protection (OCP), over voltage protection (OVP), short circuit protection (SCP) and over temperature protection (OTP), etc, to maintain system reliability.

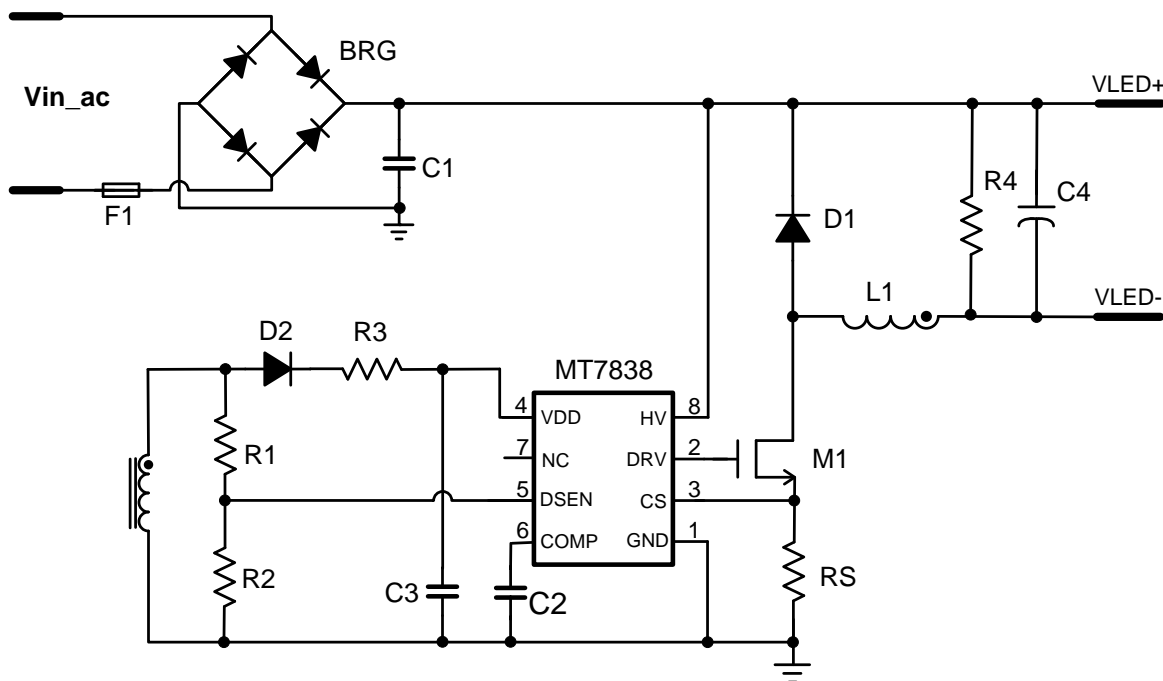
## FEATURES

- Single-stage active power factor correction (PFC > 0.90)
- Ultra-fast start-up time (<100ms)
- High accurate LED current
- Critical conduction mode (CRM) operation
- Up to 60 watt driving capability.
- Various protection schemes.
- Adjustable constant current and output power setting
- Power-on soft-start
- Compact package: SOP8

## APPLICATIONS

- E14/E27/PAR30/PAR38/GU10 LED lamp
- T8/T10 LED tube
- Other LED lighting applications

## Typical Application Circuit



**ABSOLUTE MAXIMUM RATINGS**

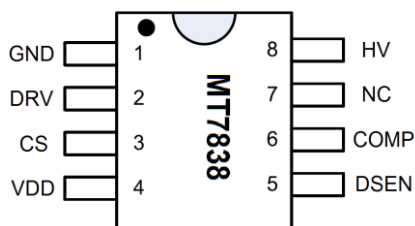
VDD/DRV Pins Voltage	-0.3V to VDD Clamp
HV Pin Voltage	-0.3V to 700V
COMP/CS/DSEN Pins Voltage	-0.3V to 5V
Lead Temperature (soldering, 10 sec.)	260°C
Storage Temperature	-55°C to 150°C
Junction Temperature (Tj)	150°C

**Recommended operating conditions**

Supply voltage	7.2V to 24V
Operating Temperature	-40°C to 105°C

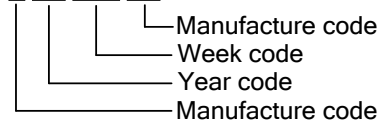
**Thermal resistance<sup>①</sup>**

Junction to ambient (R $\theta$ JA)	128°C/W
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**PIN CONFIGURATIONS**

**Chip Mark**

MT7838

X YY WW XX


**PIN DESCRIPTION**

Name	Pin No.	Description
GND	1	Ground pin.
DRV	2	Gate drive output pin for the external MOSFET.
CS	3	Current Sense pin.
VDD	4	Power Supply pin.
DSEN	5	Feedback pin for inductor zero current crossing detection. This pin also provide over voltage protection simultaneously.
COMP	6	Internal EA's output pin. Connect a capacitor to ground for frequency compensation.
NC	7	No connection pin
HV	8	IC start-up. High-voltage pin.